ACCEPTANCE OF NEW IDEAS BY MOTHERS REGARDING INFANT FEEDING PRACTICES AND ITS IMPACT ON INFANT FEEDING BEHAVIOUR OF MOTHERS IN SOME SELECTED POLYCLINICS IN THE ACCRA METROPOLIS

BY

JUSTICE OWUSU-BEMPAH

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL EXTENSION, FACULTY OF AGRICULTURE, UNIVERSITY OF GHANA, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR AN AWARD OF AN M.PHIL DEGREE

December 2000

CERTIFICATION

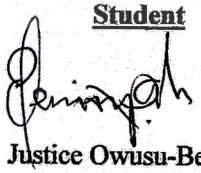
I Justice Owusu-Bempah do hereby declare that, this thesis with the exception of the identified quotations is the product of my own research, which was supervised by Dr. Felix Y.M. Fiadjoe. None of the materials contained herein have been presented either in part or whole for a degree in this University or any other.

Supervisor

DR. Felix. Y.M. Fiadjoe

<H[P5" jioo2

Student



Justice Owusu-Bempah

ACKNOWLEDGEMENTS

Unto you OH LORD I give thanks, honour and praise for seeing me through my course successfully. I am so grateful unto you for your sustenance.

I am highly indebted to my supervisor Dr. Felix Y.M Fiadjoe for his support and guidance throughout this study, I say God bless you.

I cannot go without mentioning Dr. Owuraku Sakyi-Dawson and Mr. E. E. Ackah Nyamike Jr. my other supervisors for their help whenever I called at their respective offices. God richly bless you too.

Thanks also go to Dr. Paschal Atengdem (Head of Agric. Extension Department, University of Ghana). Mr. D.S. Boateng, Mrs. Canacoo and all non-teaching staff at the department for their support.

I would again like to express my deep gratitude to all my good friends; Attram, Kwadwo Gyamfi, Albert Ofori, Mr. and Mrs. Agyemang, Pastors and especially my course mates for their encouragement and prayers when the going became tough. May you all never lack.

My special thanks go to my wife Ivy for her patience, encouragement and support.

I would also like to express my deep gratitude to Dr. Patience Mensah and Dr. Armah-Klemesu all of Nogouchi Memorial Institute for providing the much-needed materials when I called on them. Thanks also to Laetitia Laryea and Sister Hetty for typing most of the work.

ABSTRACT

For proper human development to occur, people should have access to information. If people utilise the information received and improve on what they are doing, then proper human development would be achieved. The Extension Unit of Ministry of Health (i.e. Public Health Unit) is charged with making information regarding infant feeding practices available to mothers with the aim that if mothers use the knowledge embodied in the information, they would feed their infants well, thereby reducing the incidence of malnutrition in Ghana. However, the rate of malnutrition is still high. It therefore became important to investigate the reasons for this high malnutrition rate in Ghana, since majority of the pregnant women attend pre and post natal clinics where they are given information on proper ways to feed infants by the public health nurses. A total of 100 mothers were randomly selected from the five polyclinics in the Accra Metropolis for the study. A pre-test of the structured interview schedule was carried out at the Maternal and Child Health Unit of the Achimota Hospital.

The main concepts considered in the study are the mothers background characteristics, methods/channels of information delivery/acquisition, knowledge levels of mothers and changes in infant feeding practices. Data on these attributes were collected using a structured interview schedule. Frequencies and percentages were generated from the coded data using Statistical Package for Social Science (SPSS).

The results indicated that none of the personal characteristics such as educational background, age, experience and contact with extension agents of the mothers have any significant influence on the mothers' knowledge. The findings again suggest that receiving information from interpersonal sources such as mother-to-mother played a significant role in information dissemination among mothers. However radio, as a source of mformation was not so much used. This could mean that either infant feeding program are not transmitted through such source or the mothers do not like listening to radio. This suggests the need for extensionists to be well versed in the use of multiple information delivery channels. It also suggests that a critical situation analysis of the target

beneficiaries can help in categorising target groups into specific recommendation domains to bring a change in knowledge.

Again the findings also suggest that, the changes that would occur in clients invariably depend on the type of information received. This implies that extension agents should be very careful to deliver only messages that have been planned to bring desired changes in their clients. The findings show that knowing per se is different from practising since the trialability of the idea was found to influence the mother's decision-making behaviour regarding infant feeding behaviour.

T ABLE OF CONTENTS

Section D

T .1ST OF TABLES/FIGURES

CHAPTER ONE

OVERVIEW OF INFANT FEEDING PRACTICES: GLOBAL PERSPECTIVE

1.0 Introduction

The first year of life is a period of the most rapid growth in a child's life. This explains Why an infant's energy, vitamin, mineral and protein requirements are higher per unit of body weight than that of older children or adults (Akre, 1989; Heird, 1995). It is therefore the responsibility of parents and caretakers to be able to satisfy these special needs of their infants Parents bring up their children within their own common culture, where common customs, beliefs, and attitudes influence how they react to a child's behaviour. These customs, beliefs, attitudes also give rise to the expectations and hopes parents have for their children and their future (Ritchie, 1983).

According to Ritchie, (1983) children require different amount of care and attention as they grow and develop and hence parents need to recognise and react to these differences. There are however, certain basic steps in the process by which children grow and develop which are very similar for every child. When parents and other adults know and understand these steps they are better able to recognise critical and important periods in a child's life when certain nutritional needs are particularly important for the later development of the child. The physical and mental developments of infants are dependent on the type of food given; and the time and maimer in which the food is offered affect their psychological development. Infants react to their parents emotions. If food is forced

on a child or withheld until the child is uncomfortable or if the food is presented in a tense manner the child reacts with tension and unhappiness (Nutzon, 1984).

Infant feeding practices have been of great interest since time immemorial, because of the intimate association with the health and survival of the new bom and growing infant (Armar and Wheeler, 1991). Because of this, Ritchie (1983) stated that, the World Health Organisation (WHO) and United Nations International Children's Fund (UNICEF) places much importance on the feeding practices of infants as this goes a long way to help the infant grow to be a mentally, emotionally and physically sound individual.

1.1 Infant Characteristics and Food Needs

After birth, the infant must take in food by mouth, digest and absorb the nutrients in other to survive just like any human being. However, their kidneys as well as their digestive systems are functioning but not fully developed to excrete metabolic wastes and maintain water and electrolyte homeostasis. As a result, their margin of tolerance for water and specific solutes is very narrow compared with older children (Akre, 1989).

Because of the inability of the kidneys to concentrate urine at birth and for several months thereafter, Akre, (1989); Heird (1995), and Savage, (1992), contended that the basis of infants' food is an essentially liquid diet. Infants need to be physically mature and physiologically ready before being introduced to water and/or solid foods. For this reason, WHO (1990) and Ministry of Health, Ghana (1995) stated that giving water or other drinks before the age of six months can be harmful.

Some researchers have therefore stated that, breast-milk is the best liquid diet for infants because it is highly nutritious, easily digestible and contains protein, carbohydrate, vitamin, mineral, fat and water in right proportions for their proper development (Nutzon, 1984; Savage, 1992; WHO, 1983). A research into the quality and quantity of breast millc in 1973 by WHO found that, human milk is the most economical food for infants, because it has definite immunological advantages (WHO, 1985).

In addition to this, Akre (1989) said that, human milk is not only a source of nutrients uniquely adapted to the infants metabolic capacities but also a living substance of great biological complexity that actively protect and stimulates the development of the infants own immune system. Ebrahim (1997) also commented that, there is evidence that show that, human milk is best for the brain development too. According to Ebrahim (1997), a study about premature infants who were given either breast milk or formula showed that the breast-fed children performed better in mental development test at 18 months and seven years. This may be due to the special long-chain fatty acids (used for building brain cells) in the breast milk but not in formula. There are also growth factors in human milk, which promote growth of the gut, and regulate development of the lungs, liver and other organs of infants. Feeding the infant with human milk may be one way to prevent adult health problems such as diabetes and coronary heart problems (Ebrahim, 1997). Breast milk therefore is the perfect meal for all infants (Heird, 1995; WHO, 1990).

1.1.1 Traditional Infant Feeding Practices

Breast-feeding is recognised and accepted as the best form of feeding for infants particularly in the first few months of life world-wide (Annar-Klemesu and Wheeler 1991). Prolonged breast feeding for a period of about 18 months and supplementation with gruel, pap and fresh animal milk, when available was the traditional practice among the lower social classes in the western world until the nineteenth century (Armar, 1989). This shows that breast-feeding is not a recent phenomenon. Traditionally, our ancestors have been breast-fed. Mothers were given the maximum attention needed and were provided with sumptuous meals believed to help in the production of more breast milk. This was done to ensure adequate infant breast-feeding.

There are other infant feeding practices that introduced infants to other foods at various stages of their growth. In some parts of the developing world, infants were given water to "welcome" them into their environment and others were given various concoctions, which is believed to help improve their health (Nuako, 1997). For example, in Ethiopia, immediately after birth but before initiation of breast-feeding, the newborn is often fed butter. The objective of this according to Abate and Yohannes (1987) is to “open up its throat” or to “grease it” and get rid of dirty things in their stomach. Some infants on the other hand are introduced to cereal porridge and other supplementary feeding at a very early age (some even before one month) along side breast-feeding. The reason being that mothers breast milk alone is not sufficient for the infant. In certain cultures, infants often sleep with their grand mothers. In so doing, it was believed, infants would be forced to eat adult food early (Wunu, Solaga, and Williams 1998).

1.1.2 Rise of Breast Milk Substitutes

After the nineteenth century according to Armar (1989) citing Wicke (1952) said, there was a marked decline in breast-feeding and the increase in the popularity of artificial feeding. This challenge to Nature according to UNICEF (Undated) took hold during the industrial revolution where there was a rise in employment of women, which lead to many women spending more time away from home for occupational purposes. There was therefore a growing need for breast milk substitutes. Armar (1989) reported that, processed cow's milk gradually became acceptable as infant food. There was the development of the glass feeding bottle, rubber teat and the efforts by manufacturers to make processed milk preparation as close to human milk as possible. Several technological advances towards the end of the nineteenth century improved infant feeding methods and made artificial feeding safer (Armar 1989).

The manufacturers embarked on aggressive marketing of these breast milk substitutes. They directed attention to doctors and maternity units and even sent 'milk nurses' into communities to advertise their products, knowing that women will mistaken the workers for medical personnel. Infant formulas quickly gained a large market. Many hospitals tied to the rigorous schedules of industrialised societies encouraged the switch from breast milk to regular bottle-feeding (UNICEF, Undated). Commercial success of these breast milk substitutes soon prompted manufacturers to expand their marketing to developing countries, where infant formula was presented as a ‘modem’ progressive practice. Sales were boosted by distributing few free samples of their products to new mothers and intensify promotion through the hospitals and health centres (UNICEF, Undated).

Health workers even accelerated the use of these breast milk substitutes by routinely encouraging mothers to use them. Some hospitals even had milk kitchens that prepared infant formulas for infants (WHO, 1989). Nursing mothers resorted to the habit of giving breast milk substitutes to their infants. The move away from breast-feeding caused more problems for poor families in the developing world, because they (baby foods) became an additional cost to families, depleting the already scanty family incomes. Poverty forced mothers to dilute the formula often with unsafe water or mothers turn to cheaper milk substitutes with little or no nutritive value. The result was malnutrition, infections, diarrhoea diseases and a string of equally dangerous effects (UNICEF, Undated).

1.1.3 Recent Trends in Infant Feeding Practices

Infant mortality and morbidity rate worldwide rose drastically towards the later part of the nineteenth century. Over one million children were dying eveiy year. Available data and statistics indicated that diarrhoea, infections, and malnutrition killed the infants (UNICEF, Undated). This became a cause of concern in international communities because of its public health implications. Several studies clearly demonstrated an association between artificial feeding and increased infant mortality and morbidity. The baby food industiy was blamed for this state of affairs (Armar and Wheeler, 1991). Their sales tactics were described as unethical because of the way they advertise their commodities in communities where breast-feeding is still the norm. The international community reached an agreement that further decline of breast feeding in the developing world might have a serious adverse impact on child health. This is because health and its

related services are woefully inadequate in these areas (Armar-Klemesu and Wheeler 1991)

The baby food manufacturing industries came under attack by action groups including international organisations like WHO and UNICEF. Their actions culminated into a review of the sale of breast milk substitutes. As a consequence, the international code of marketing of breast milk substitutes by the World Health Assembly was adopted in 1981 (UNICEF, Undated). The code was intended to regulate the advertising and promotional techniques used to sell infant formula and to advocate for exclusive breast-feeding for the first four to six months. Because it has been found that on the average breast milk alone can support satisfactory growth for the first six months of the infant's life (Armar-Klemesu and Wheeler, 1991).

Despite the code's best intentions, the 1980s saw bottle-feeding continual increase with breast-feeding declining. For this reason, WHO and UNICEF in 1989 issued a joint statement, which encouraged policy makers to review how health services promote or hinder breast-feeding, so that policies, practices and routines that enhance its early initiation may be established or modified.

In spite of the recognition that, changing a family's habits and the kinds of foods offered to children is not easy, it is however possible to help mothers to understand which foods are important for infants, and how much and how often they need to eat. An effective

way of doing this is through talking to mothers individually about their child s feeding difficulties and finding solutions that would be feasible for them to adopt (WHO 1997).

A number of essential messages about breast-feeding were outlined by WHO and UNICEF and communicated to health workers. They (Health Workers) are also responsible to communicate the messages to mothers who visit the hospitals and clinics. In a further development, 32 governments and 10 United Nation Agencies developed and signed the Innocenti Declaration in 1990. The declaration endorsed health expert's recommendations that children should be exclusively breast-fed for the first 4-6 months and a complementary diet of foods and breast milk should continue past the child's second birthday (UNICEF, Undated).

In 1992, 71 Heads of state and governments agreed at the World Summit for Children on a set of goals for children and development in the 1990s. In this World Summit a declaration was made and a Plan of Action, which gives high priority to recreating an environment that would enable all women to breast feed their children, was suggested (UNICEF, Undated). All participating governments were asked to translate these declarations into national infant feeding policies, which should also be integrated into their overall health development policies. Governments were mandated to set appropriate targets for the 1990s and also establish a national monitoring unit for the attainment of these set targets (UNICEF, Undated).

1.2 Background to Infant Feeding Practices in Ghana

The background of the infant feeding practices in Ghana has been grouped into three. It starts by looking at the traditional practices and then the changes that have occurred in the traditional practices and lastly the current infant-feeding situation in Ghana.

1.2.1 The Traditional Practice

Childbirth is considered a potential asset in womanhood in Ghana. Without it some would even say that womanhood is incomplete. A great deal of social satisfaction is attached to the act of childbirth. Children are a social security for parents in their old age as such parents with more better-cared-for children are respected and thought to have better and happier lives, as they grow older (Nuako, 1997). Because of the importance attached to childbirth, Nuako (1997) further asserted that, many cultural beliefs and practices have a bearing on everything concerned with conception, childbirth and child rearing.

Various traditional practices are intended to protect both mother and child from adversity. However, according to Nuako (1997) some beliefs and practices can damage the health of the child. For example in certain parts of the country especially the northern parts, during the postpartum period, the infant is bathed and given a welcoming drink of water, alcohol or a herbal mixture to help the passing of meconium (a mixture of intestinal secretions and amniotic fluid).

According to John Snow, LAC and ISIT/URC's report to Mothercare, on the state of breast-feeding in Ghana (1993), there are two universal beliefs in Ghana that leads to the early introduction of liquids especially water. Giving water according to some researchers like Armar and Wheeler (1991) and Wunu, Solaga and Williams (1998), is a customary form of welcoming and so newborn infants are "welcomed" with water or glucose water at birth. It is also believed that infants need water because breast milk even though is food, is not sufficient to satisfy infants thirst.

Other traditions in Ghana permit the introduction of complementary food especially fermented maize porridge to infants less than one month of age. The Mothercare's report on the state of breast feeding in Ghana (1993) mentioned that, these fermented traditional porridges usually called "akasa" or "koko" are offered to infants in the central and southern parts of Ghana while in the north their porridge is usually made from millet. But regardless of its base this porridge may be so dilute that it would not give the needed nutrients to the infants, while other mothers may give porridge that is denser in order to make the infant sleep for the mother to rest. Such practices can lead to nutritional deficiencies and anaemia.

Reasons given for the premature introduction of semi-solids are that; mothers feel the infant needs to become accustomed to adult food, and must start early. Some mothers also believe that when the infant looks at her eating, it is an indication that he wants to eat adults food while other mothers just copied the infant feeding practices of their colleagues (Mothercare, 1993).

These beliefs remain deeply entrenched in the lives of people living in most parts of the country despite educational, religious, and tribal differences.

1.2.2 Changes in the Trend of Traditional Infant Feeding Practices

The Ghanaian context is one which has traditionally been very supportive of breast-feeding, to the extent that, both health workers and laypersons observe breast-feeding as universal and prolonged. However the trend of changes in infant feeding practices that has taken place in Ghana is no different from what has happened in the World.

Armar (1989) commented that, Ghana has followed the path of so many countries in both the developed and developing world, going from a situation where artificial milk was virtually unknown to one where it has become available but unaffordable by majority of the population. There has been increased urbanisation, more women entering the formal workforce which forces them to leave home, the fashion of baby bottles and the desire to emulate women of high socio-economic status lead to decreasing periods of breast-feeding and increasing demand for baby foods.

These increases in demand for baby foods lead to the widespread importation of breast milk substitutes and varieties of feeding bottles by both private and public importers. For instance, the Ghana National Procurement Agency imported three infant formula brands: (Babylac, Ostermilk, and Lactogen starter and follow up). The breast milk substitutes flooded the markets of both urban and rural Ghana such that, some men trying to do the fashionable thing for their infants, will purchase a tin of breast milk substitute and send

them to their wives at the maternity wards. Many government hospitals and clinics especially the Okomfo Anokye and Korle Bu teaching hospitals had milk kitchens where infant formulas were prepared for infants in the wards. One common practice was that nurses and other paramedical staffs in the health centres solicited infant formula from commercial houses and sells them cheaply in the hospital premises to mothers.

A term such as " Lactogen baby" became well known in Ghana indicating a plum baby, a feature that is admired and desired in infants (State of breast feeding in Ghana report 1993). Increasing usage of the breast milk substitutes increased infant mortality and morbidity rates. Reports and works done by many researchers (Wunu, Solaga, and Williams 1998; Ministry of health 1995) indicated a correlation between decreased duration and frequency of breast-feeding and increased infant morbidity and mortality rates.

In an attempt to mitigate the decreasing breast-feeding period by mothers, the government of Ghana spelt out some restrictions for the sale and free distribution of breast-milk substitutes. A ban was placed on the importation of these breast-milk substitutes, and also hospitals were not allowed to distribute free milk formulas to new mothers (Ministry of Health 1995).

Supporting international efforts, the Ghana government initiated a National Program of Action (NPA, 1981).

A component of the NPA is an improvement in nutrition; training more health workers, designing and implementing programs to encourage prolonged breast-feeding. The NPA also sought to develop and promote appropriate weaning food production and consumption in the country. More hospitals and polyclinics with maternal and child health units have been built to make health care accessible to mothers. Public health nurses and nutrition officers educate mothers on the importance of breast-feeding and the need to exclusively breast-feed the infant for the first six months of life at these centres. Again the Ghana government in compliance with the Innocenti Declaration (1990), appointed regional breast feeding co-ordinators in the ministry of health.

Their duty is to go round the various hospitals and clinics and train health personnel in the recommended international infant feeding practices (especially exclusive breast-feeding). Several projects on producing nutritious weaning foods using local foods has been undertaken by the nutrition division of the ministiy of health with a joint support from WHO, UNICEF, and the OAU. Notable among these projects was the weanimix project launched in 1986. Mothers were taught how to develop low-cost but nutritious complementary food from local ingredients basically legumes and cereals for proper infant growth.

In addition to these efforts by the ministry of health, several NGOs and other private institutions interested in child welfare also go round educating mothers on the recommended infant feeding practices and the need to adopt them in their local situations.

1.2.3 The Current Infant feeding situation in Ghana

Armar (1989) asserted that breast-feeding is on demand in Ghana and this is one of the reasons that have contributed to the acceptance of universality of breast-feeding in Ghana. A report in the complementary feeding of young children indicated that, the number of months mothers kept their infants on the breast alongside other supplements rose from 15.1 months in 1979/80 to 20.4 months in 1988. Infants in Ghana according to the report grow very well during the first six months of life.

However, the 1993 Demographic and Health Survey reported that, one fourth of children age 0 to 35 months old are chronologically undernourished and that more than one-fourth of the children are under weight. This is a sign of poor feeding of infants by mothers. In a break down of infant feeding situation in Ghana, the 1993 Demographic and Health Survey showed that, 8% of Ghanaian children are exclusively breast-fed and that almost 40% of infants under 4 months old are given some form of supplemental feeding which is not recommended. Approximately 40% of Ghanaian infants' ages 6 to 9 months are fed with solid food in addition to breast milk. In a study of the growth pattern and growth rates of breast-fed infants in Accra, Nti, Owusu and Ayeetey, (1999) found that, mothers breast-fed their infants for at least three months before introducing complementary foods. This means most Ghanaian mothers introduce their infants to foods other than breast milk before six months old. These infant feeding practices of Ghanaian mothers according to Nti, et al (1999) account for the increasing incidence of malnutrition among Ghanaian infants.

There is no wonder that approximately half of all deaths of children under five occur during the 0-12 month period of life. Presently, the 1998 Demographic and Health Survey put the death toll of Ghanaian infants at 57 deaths per 1000 infants per year. These deaths were attributed to infectious diseases, which are associated with the early introduction of foods to infants.

13 Problem Statement

The high rate of infant mortality became a source of public concern. Several factors have been outlined by some researchers as being the main contributors to the causes of malnutrition. Mensah (1989) attributed the incidence of malnutrition to contamination of weaning foods given to infants by mothers. These contaminated weaning foods lead to diarrhoea and other infections. Mensah (1989) further stressed that if foods with little or no bacteria contamination can be obtained then the question of the timing of the introduction of solid foods to infants becomes less critical. In a similar view, Armar (1989) mentioned that intervention measures Ghana needs should be aimed at providing nutritionally adequate and hygienically safe supplements to infants and not rigidly adhering to the 4-6 month WHO recommendation.

However Bobi (1981) has a different opinion by asserting that foods used for weaning infants in Ghana contain enough nutrients to meet the caloric requirements of infants from birth to three or four years. But the prevalence of ill health such as infections and diarrhoea in infants are due to ignorance on the part of mothers on the nutritional

requirements of growing children. Bobi (1981) also accused mothers of using infant-weaning methods that often-caused resentment on the part of infants leading to loss of appetite. Growth faltering and infections according to Mensah (1989) is due to some mothers leaving their infants to eat on their own. At such tender age the hand-to-mouth coordination is not well developed; therefore the food spills on the floor. The infant eventually takes in a little which sometimes go with dirt picked from the floor. This leads to infections and ill health.

Dovlo (Undated) attributed the cause of malnutrition to the early removal from the breast especially among educated women. Rikimaru et al (1998) also stated that lower educational levels and lower household income coupled with less parental care as other causes of malnutrition.

This state of affairs with regards to high malnutrition due to improper feeding is happening in spite of the numerous educational campaigns on proper infant feeding by several development agencies, government institutions, private institutions, and NGOs. One can deduce that, probably the mothers are either not getting the information given to them or the information they receive are not appropriate. Or better still some other factors may be accounting for the increase in malnutrition despite efforts put in by the public health institutions and their partners.

According to Boadi, (1992) and Zikpui, (1997) target clients may differ in previous knowledge, experience and learning abilities, however, the appropriateness of information and the methods used in disseminating such information to them are very important determinants of acceptance and use of such messages.

1.4 Research Questions

The main research question that the study seeks to answer is,

Do mothers knowledge in infant feeding influence their infant feeding practices?

Specifically the study would answer these questions;

1. Are mothers acceptance and use of an idea regarding infant feeding practices dependent on the channels through which information is received?
2. Do the acceptance and use of an idea by mothers regarding infant feeding practices relates to the number of sources of information available?
3. Do mothers acceptance of an idea regarding infant feeding relates to changes in their infant feeding practices?

1.5 Objectives

The main objective of the study is to determine how the acceptance of new knowledge in infant feeding practices by mothers influences a change in infant feeding behaviour.

Specifically the study will amongst others;

1. Identify and describe mothers source(s) of information regarding infant feeding
2. Assess the appropriateness of infant feeding practices embodied in messages from various source(s)
3. Identify and describe the pattern of extension methods used in information dissemination
4. Identify the channels through which mothers have received information regarding infant feeding practices
5. Determine the mothers knowledge regarding infant feeding practices
6. Determine the mothers infant feeding practices.
7. Describe the background characteristics of the mothers
8. Determine the relationship between the mothers knowledge regarding infant feeding and their infant feeding practices

1.6 Hypothesis

The hypotheses for this study are;

1. A high acceptance of an idea regarding infant feeding practices by mothers does not lead to a greater change in infant feeding behaviour
2. Receiving messages on infant feeding practices through multiple methods of information delivery, does not lead to increased acceptance and use of such messages.

3. Receiving more messages on infant feeding practices from different sources does not lead to changes practices.

1.7 Justification of Study

The findings of this study would be a guide to all extension organisations in the area of assessing the impact of their extension activities on knowledge levels of their clients. Again it would provide suggestions as to how to improve the performance of extension delivery. This would strengthen the capacity of field staff for the efficient and effective implementation of extension delivery programmes. Above all the study would add to knowledge in the field of extension.

1.8 Definition of Terms

1. Knowledge. Information about infant feeding practices that mothers have and their understanding of that information.

2. Infant. Children between the 0-12 months of age.

3. Infant feeding. Giving food to infants based on their needs. Infants are fed with different types of foods at certain distinct periods in their life. Based on the foods required at each stage of the infant life, they are categorised for this study as follows;

0-6 months old (requiring only milk either from the breast or milk formula);

6-7 months old (those in transition, requiring the introduction of supplementary food alongside breast-milk)

7-12 months old (requiring supplementary feeding alongside breast-milk)

4. Chanpe Succession of events, which produces modification/ alteration in mothers knowledge regarding infant feeding practices. For this study, change would be looked at in terms of:

(a) the mothers source(s) of the information

(b) the contribution(s) made by the source(s)

(c) the modification/alteration in knowledge and practices that has resulted

5. Methods of information dissemination. The way(s) of getting information to and collecting information from clients

6. Appropriate Information. Information about infant feeding practices which is suitable for feeding the infant at given period of the infant's life. For this study, appropriate information would be considered in the following terms; How the messages about infant feeding practices given out by the nurses and other information sources are suitable based on the age of the infant and his food needs as well as the correct use of information given by the mothers.

7. Characteristics of Mothers. Qualities or features of the mothers. This study would consider these; Age, Occupation, Ethnicity, Religion, and Educational Background, Number of children.

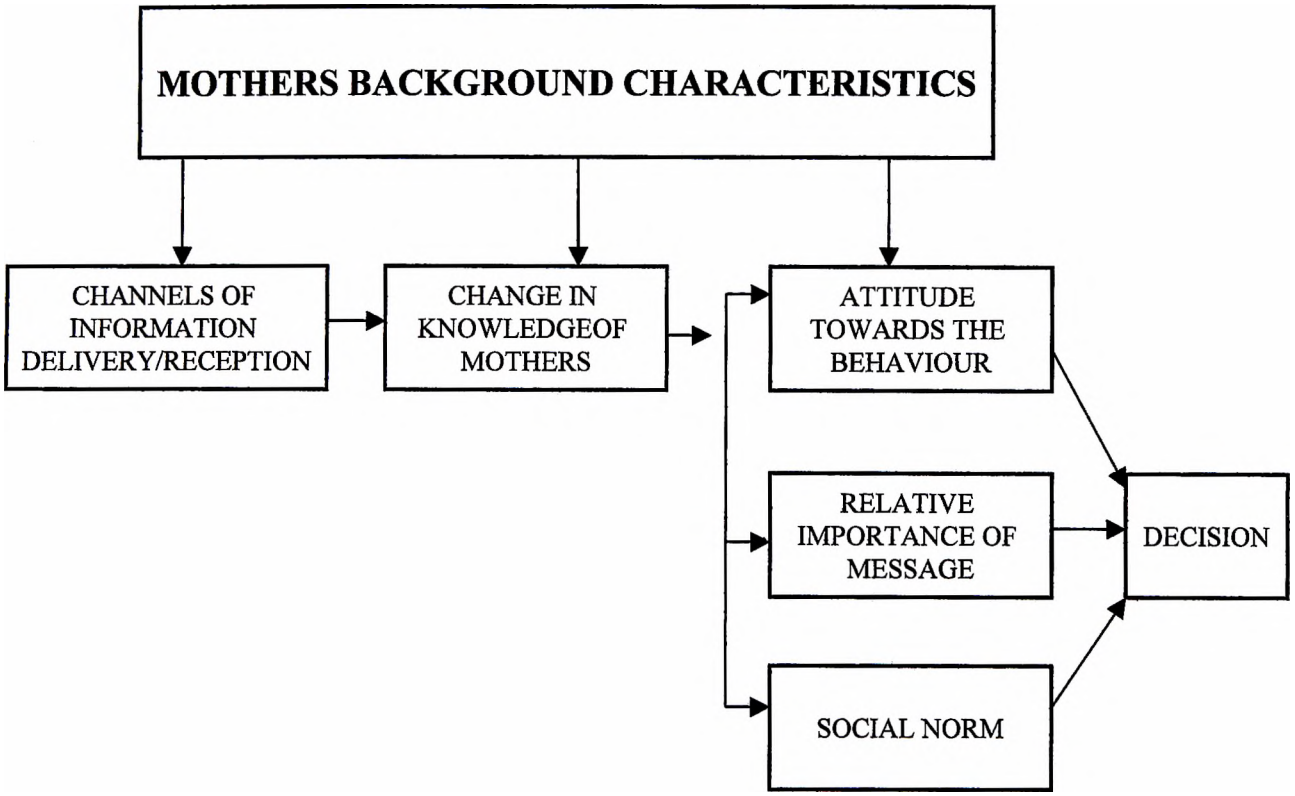
8. Mothers. For this study, are nursing women

9. Mpotompoto. A semi-solid locally made Ghanaian food made up with very ripe plantain cooked and mashed and mixed with vegetables and palm-oil.

1.9 Conceptual Framework

The conceptual framework of this study is made up of interrelated concepts as shown in figure 1.1 below. These concepts include the mothers background characteristics, method of information delivery and channels of information acquisition by mothers, change in knowledge as a result of the newly introduced knowledge, relative importance of the new knowledge over the old one they have, social norms, decisions mothers make and the final change in their practices.

Fig 1.1 Diagrammatic representation of the linkage existing among the mothers background, channels of information delivery/acquisition, attitude toward the behaviour, relative importance decisions mothers make and the resultant change in behaviour.



Mothers Background Characteristics

Mothers come into a learning situation with some specific background characteristics such as age, educational background, experiences, contact with extension and varied sources of information on specific issues etc. These distinct characteristics give the mothers some already formed habits and attitudes concerning specific ideas and knowledge. As a result when they are exposed to information regarding specific issues each of them would perceive it differently because of the differences in their backgrounds. This will influence the mothers as to whether they should accept and use the knowledge or not.

Methods of Information Delivery and Channels of Information Acquisition

At the learning centres, the extension agents give out information regarding infant feeding practices using certain specific extension methods. The methods used are either group discussions coupled with demonstrations and or pictures, individual face-to-face talk or panel discussions etc. However, not all the mothers receive information through the same channels as used by the agents. While some of them would receive information through the individual face-to-face talk only, others would receive it through the group discussions or both with or without demonstrations though the agent might have used many methods in sending the information to them.

Change in Knowledge of Mothers

The knowledge embodied in the information received by mothers adds unto the previous knowledge they have. However, the knowledge that would be acquired by each of the mothers would be different. The reason being that each has a different background characteristic and therefore had built up different attitude and perceptions towards certain

knowledge. The changes that would occur in the mothers practices could either be positive or negative depending upon how the mothers see the new idea.

Attitude Towards the new Knowledge and Practice of infant feeding

Mothers would come into a learning situation with some knowledge of infant feeding practices, which may have been the accepted social norm of infant feeding within their communities. However, upon contact with extension, these mothers would gain new knowledge and an associated practice(s) which may accompany it. These mothers would then weigh the newly acquired knowledge and practices to the old one they have to see the relative importance of each over the other. If these mothers find out that the new knowledge and practice have a comparative advantage over the old one they know and/or practising, then they would no longer see their old knowledge and practice as the ideal but rather begin to have a new look into it. Their way of seeing the old knowledge and practice would begin to change as a result of the newly introduced one.

Decision Making and change in Practice

Based on the outcome of the comparison between the old and new knowledge received, mothers would make a decision as to whether or not to change their old practice for the new one completely or modify it to suit them or even still stick to the old one. If the mothers find that the relative importance of the new practice is greater than the old one without having any conflicting attitudes then they use the new practice and abandon the old one entirely. However, there is a probable situation where a recipient of information would modify the new practice to suit his/her situation or may not practice it at all by sticking to the old practice as stated earlier.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses the main activities within the information transfer process. It begins with some definitions of information transfer and then looks at the communication process as a vital component of the transfer process.

2.1 Information Transfer Process As A Means Of Change

Information transfer is the process whereby the extension worker tries to motivate his extension partner by giving him the capability through the help of encouragement and ideas to act to solve his acute problems (GTZ and BMZ, 1989). Oakley and Garforth (1983) defined information transfer as a means through which the extension worker shares ideas and information with people hoping to influence their decision. Information transfer according to Kroehnert (1996) is moving people from the known to the unknown by supplying them with information that are meaningful and worth while to them, using things they are familiar with and gradually building up with the aim of helping them to become competent problem solvers. Engel (1993) on the other hand saw information transfer as an encounter between an extension agent and a client, which promotes learning. Each of these definitions emphasises some important elements in the information transfer process that is through interaction with extension workers people acquire better insights into the network of problems and are able to recognise alternative solutions that are available to them.

This means that the main aim of information transfer is to get the receiver to perform a task, to gain knowledge or to accept something (Engel, 1993; Rogers, 1995; Van den Ban and Hawkin 1996; Zikpui, 1997). This recognition underscores the importance of communication in the information transfer process.

2.2 Communication Process

Rogers (1962) defined communication as a process by which participants create and share information with one another in order to reach a mutual understanding. Rogers (1995) again defined communication as the process by which an innovation is sent through certain channels over time among the members of a social system. Blackburn (1989) citing Whale (1984), defined communication as helping to convey information in such a way that it fulfils a particular need of the client if effectively applied. Ansu-Kyeremeh (1997) further explains that communication provides a two step process in which facilitators and change agents carry educational messages designed and packaged outside their clients' area, utilising opinion leaders and decision-making leaders in the community. With the communication process, someone sends a message to someone else and receives a response. This process occurs in a more or less on an equal basis (Hedebro, 1986).

All these definitions bring out certain specific elements common in every communication. There must be an originator of the message (source) who sends a message through a selected medium (channel) to receiver.

Commenting on the elements intrinsic in every communication, Ansu-Kyeremeh (1997) mentioned that a person with an idea (source) creates a message about it and then chooses a channel by which the message can be sent to the receiver who is yet unaware of this new idea. This definition assumes communication to be a one-way affair, mainly from a source to the receiver. However, Bovee and Thill (1992) saw communication as being more than a single act, instead it consists of a chain of events that can be broken into five phases as

1. The sender has an idea
2. The idea becomes a message
3. The message is transmitted
4. The receiver gets the message
5. The receiver reacts and sends a feedback

On the part of Dominick (1993), communication involves eight events/elements including

1. Source
2. Process of encoding
3. Message
4. Channel
5. Process of decoding
6. Receiver
7. The potential for feedback
8. The chance of noise

Oakley and Garforth (1983) also listed four elements in the communication process as follows,

1. Source
2. Message
3. Channel
4. Recipient

Berio (1960) also listed six ingredients of the communication process as follows;

The communication source

The encoder

The message

The channel

The decoder

The communication receiver

It is worth noting that all the above references identified certain specific elements/events as being very common to any communication process. This means that all the events/elements are very important and should be taken seriously since the effectiveness of any communication can be adversely affected by the malfunctioning of any one of them. These elements of communication have also been found to be of great importance in the adoption of innovations. Zikpui (1997) reported that the adoption process is essentially a decision making process and that before some one makes good decisions, there should be a proper flow of information from a source to the decision maker (receiver).

2.2.1 The Source

The source provides the relevant stimulus to which the receiver reacts. For communication to be initiated, Dominick (1993) mentioned that a source must conceive a thought or an idea that he wishes to transmit to some other entity of which he may or may not have knowledge. Oakley and Garforth (1983) saw the source as an origin of an information or idea This shows the great influence a source exerts on the effectiveness of information flow to their recipients. Without a source there would be no communication. However, there should be a variety of information sources especially in communications aimed at producing a change in people, because the clients use different information sources to different degrees.

Engel (1993) found many sources that bring about change in people through communicating. Engel (1993) identified the sources as including clients' groups, co-operatives, specialised services and groups or study clubs, industries, public and private research, extension and training institutions, press and information services, policy making units and formal as well as informal network of many kinds. For extension work, Rolling (1990) was of the view that, scientists involved in basic, strategic, applied and adaptive research together with their clients, community level extension agents, subject matter specialist are the sources of information. Though there could be many sources in a single communication process, none of these sources according to Rolling (1990) controls the entire communication process despite being autonomous of each other.

In the view of Engel (1993) all the sources in the communication process pull resources together in ensuring the proper functioning of the process. Rolling (1990) is of the opinion that different sources play complementary roles to ensure the sustenance of the communication process.

According to Berio (1960) no one source has developed an effective way of sending information to the receiver. To enhance effective communication, Berio (1960) and Van den Ban and Hawkins (1996) asserted that, information sources should have some intrinsic characteristics, which must be well developed. These characteristics include the source's communication skills, the knowledge the source has on the message, the attitude of the source concerning the content of the message and the socio-cultural setting within which the communication takes place. The malfunctioning of any of the above characteristics according to Berio (1960) would not only affect the sources communication behaviour but also the purpose, treatment and the content of the message itself.

2.2.2 The Encoding Process

Encoding according to Dominick (1993) refers to the activities that a source goes through to translate thoughts and ideas into a form that may be understood by the beneficiaries or users of such ideas. In the process of translating thoughts into ideas, one can leave many things and assume many others. That means all ideas, according to Bovee and Thill (1992) are simplifications and abstractions of reality filtered through the individual's mind. Very often, our inferences are correct, while other times they are not. In this

regard, when one sends a message, reality is inevitably distorted. The idea is that the individual is just a simplification of the real world. In communications aimed at bringing change(s) in people, Bovee and Thill (1992) asserted that, the first step in the process of encoding is for the source to define the goal of communicating with their clients by asking the reasons for sending the information, and what reaction is expected from the audience. When answers are got then the source can build a message to achieve the purpose of communicating.

Johnson and Kellogg (1984) provided strategies that could help the information transmitters (sources) to encode effectively. These include

1. Diagnosis of clients circumstances
2. Planning and designing of technological adaptation
3. Testing and verification of the knowledge
4. Multi-locational field trials and dissemination

Reddy (1979) did indicate that, the process of encoding ideas or thoughts can be very difficult, but change agents should be guided by certain general guidelines if they (source) want their recipients to exhibit the desired response(s). Blackburn (1989) citing Compton (1983) did also outline a series of interrelated and continuous processes when encoding information. This process follows this sequence;

1. An examination of the situation of the family
2. Assessment of existing problems, needs and interests of the community
3. Identification of available resources
4. Planning of a program

5. Action to implement the plans
6. Steps to monitor and evaluate the action, learning processes and the achievements or failures
7. Follow-up meetings to adjust on-going programme plans in the light of new awareness gained through the previous processes.

In another view, Boone (1985) reported that there are various processes that could be followed when encoding a message to be transferred to a targeted client of an organisation. Boone (1985) suggested that extension agents should first study their clients, map out those their organisation would work with, identify and interface with their leaders, then with a collaborative effort assess and analyse their specific needs. When this is done according to Boone (1985), extension agents can then translate the identified needs into objectives, specifying general educational strategies and learning activities. Based on this, plans of action could be developed alongside implementing strategies. Conyers and Hills (1984) further explains that encoding helps the extension agents to gather data about their targeted clients and determine the nature and extent of their peculiar problems. This helps them to know where to start the planned change they desire in their clients.

Boone (1989) mentioned that, the importance of knowing about and understanding the differences that exists between the users of information is highlighted by the fact that their needs, and hence their readiness to participate in externally contrived programmes vary. For example, variations in the socio- economic status and cultural heritage of social groupings cannot be taken lightly in designing programs for these people (Boone 1985).

Therefore, it behoves on all change agents to study their clients very well so as to be able to encode information which when delivered to their clients will be well beneficial to them so that their plans may be successful.

2.2.3 The Message

When we talk, our speech is the message. When we write, what we put on paper is the message. The message then is the transformation of the ideas in one's mind into visual representations and words either spoken or written. In the view of Dominick (1993), the message is the actual physical product that the source encodes. The source according to Berio (1960) has to express his ideas in the form of a message. A message is the translation of ideas, purposes and intentions into a code, or a systematic set of symbols. Zikpui (1997) stated that, the message is very crucial in determining the quality of communication between the entities involved. The influence of the message in affecting the effectiveness of communication relates to the content and how the message is treated before transmission.

In extension delivery for instance the content of a message is a very important factor in bringing about a planned change, therefore when sending a message, Bovee and Thill (1992) advised change agents to consider the subject of the message, the purpose of sending the message, and the audience the message is meant for. The reason being that these ingredients if well considered makes communication effective. Boone (1989) cautioned that clients are in transition and are ready to listen and learn things that are relevant to help them solve their needs, hence if the content of a message does not

address the needs of targeted clients, communication will not be effective. Wilson (1992) asserted that if change agents are able to go through the encoding process very well, they stand a better chance of formulating well suited contents in their message about the identified needs of the their clients and even better able to treat such messages well when sending it to the users.

The aim of communication according to Rogers (1995) is to get the receiver to perform a task, or to gain knowledge. However, to achieve this aim, extension workers should consider the relative advantage, compatibility, complexity, triability as well as the observability aspects of their messages in their clients situation, otherwise no planned change can be achieved.

2.2.4 The Channel

A physical transmission of the message from the source to the receiver is the channel. Dominick (1993) defined channel as the ways in which the message travels to the receiver. For example sound waves carry spoken words; light waves carry visual messages. According to Van den Ban and Hawkins (1996) and Oakley and Garforth (1983), people in information transfer have several ways through which they send information to their recipients. In extension service delivery, extension agents send information to their clients either by individual contacts, group contacts, or using mass methods. With the individual methods, Oakley and Garforth (1983) further stated that, the agents or sources of information deal with their clients on a one-to-one basis, while in the group methods, the agent brings the clients together in one form or another to

undertake his extension work, the mass method on the other hand exposes large numbers of people to the same information at the same time. However, all these methods are suited for different purposes in extension work.

It is therefore important for the agent to consider the range of methods at his disposal and to select the method appropriate to the situation. It is also important to remember the educational purposes of the information to be delivered and to ensure that the method selected is used to promote the clients better understanding of the idea involved (Oakley and Garforth 1983). Apart from thinking about which method to use to get information to the intended users, agents or information transmitters must also be concerned about how to use a combination of the channels available to them (Van den Ban and Hawkins 1996). When choosing a communication channel according to Van den Ban and Hawkins (1996), the source/agent should be guided by the following;

1. The extent to which a receiver is involved in the activities associated with the message
2. The size of the audience
3. The nature of the audience
4. Who controls the pace of communication?
5. The cost per person reached effectively

According to van den Ban and Hawkins (1996), if the agent gets to know the extent to which the receiver is involved in the message being sent out to them, it will give the agent an idea as to how much importance the receiver would attach to that message or how much interest will be shown in the message.

In addition to this van den Ban and Hawkins (1996) further asserted that, if receivers are included in the preparation of all the activities associated with a given message before delivery, their interest in such messages are very high since they are directly involved in all the processes associated with it. The size and nature of the audience would give the agent an idea as to what extension methods to use. The cost per person reached would also help the agent to work within the budget constraint given to him/her from planning to the final implementation stage.

2.2.5 The Receiver

For communication to occur, the receiver has to get the message sent by the source. This means, the receiver is the main target of the information that is sent. The source may or may not have knowledge about the receiver(s). Dominick (1993) contended that, just as there are varied sources in the communication process, there are equally different receivers. The receiver can be a single person, group of people, an institution, or even a large anonymous collection of people.

Van den Ban and Hawkins (1996) commented that, like the source, we find that the receivers' communication skills, attitudes, and social background influence how they receive and interpret a message. Commenting on interpretation given to messages, Boone (1985) asserted that targeted clients (receivers) live in families that have shared goals, beliefs values, customs and sentiments. All these are inculcated into the individual thereby forming his/her basis of understanding and decision-making.

Boone (1985) further stressed that these patterned interactions and processes of socialisation forms the individual's total personality. That is, the way the individual thinks, feels, make decisions and his knowledge base etc.

The values, beliefs customs and cultural attitudes according to Johnson and Kellogg (1984) could also determine the interest of clients. Therefore extension messages aimed at bringing a change to them should take note of this if maximum acceptance and use is to be achieved. Johnson and Kellogg (1984) further asserted that clients always put the received message into their value system and assess the message before selecting the part that best suit them. It is therefore essential that extension agents try as much as possible to know more about these socio-cultural background of their clients before sending messages to them. Though communication skills, attitudes, and the social background are important factors to be considered in the intended receivers, Berio (1960) asserted that, other factors like age, educational background, income, and sources of information used are also factors worth noting.

2.2.6 Feedback

Every effective communication is a two-way affair that is the sender sends a message and the receiver also gives a response to the message received. The response given by the receiver is the feedback. It also helps the sender to evaluate the message sent to see whether the idea carried to the sender was received as intended. This helps the sender to make clarifications to the message/ideas sent where necessary.

2.3 Intended Outcomes of messages/ideas sent

Rogers (1995) defined intended outcomes (desirable outcomes) as the positive change that occurs in an individual or a social system when an idea is introduced to that individual or social system.

All extension activities generally aim at bringing a positive change in people by sending information/innovation, ideas, knowledge, skills, etc. to them. It is hoped that if they use such skills or ideas or innovations they would be able to improve upon whatever they are doing and bring about the desired change. However, according to Marcellin (1998) citing Schultz (1964) contended that, the introduction of new ideas sets the receiver in a state of disequilibria and that resources have to be committed efficiently by the receiver in other to reach a new equilibrium. When the receiver finally decides as to accepting, using, or rejecting the idea learning takes place. This means after receiving information, change(s) occurs in the recipients. That change is the outcome of every information transfer. However, if these outcomes are in the direction of what the source sets out to achieve in the receiver, then communication is effective.

Rogers (1995) mentioned that, when an innovation/idea is introduced to an individual or a social system, we don't only get intended (desirable) outcomes. Some of the outcomes can be unintended (undesirable), others can be direct or indirect while others can also be anticipated or unanticipated.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the research design and the nature of information collected on the variables under study. It also presents the population, sampling methods used, procedures used in gathering the data, sample size, instrument design, data collection and analysis and limitation of the study.

3.1 Research Design

A plan which shows or gives a detailed outline of the activities/steps the researcher followed to achieve the goals the study set out to achieve is called a research design. The steps/outline a researcher followed is based on the type of information required, the resources available to the researcher and the extent of control the researcher has over selecting the study population.

A causal-comparative approach was chosen based on the objectives of this study. The causal-comparative approach according to Fraenkel and Wallen (1993) has four distinct characteristics;

1. it seeks to find an association existing among the variables under study
2. it attempts to determine the causes or consequences of differences that already exist between or among groups of individuals;
3. it begins with a noted difference between the two groups and then looks for possible causes for, or consequences of this difference;

4. it then goes on to check if the relationship existing between the variables can be identified;

The main objective of this study is to determine whether the acceptance of ideas regarding infant feeding by mothers influences their infant feeding practices agree with the first characteristic of the causal-comparative approach. Secondly the study attempted to find an explanation for the differences in the mothers acceptance level. These satisfy the first and second characteristics of the causal-comparative approach respectively, hence the use of the causal-comparative approach.

3.2 The Nature of Information Gathered

Four variables were under study. These include mothers' characteristics such as age, educational background, occupation etc, information delivery/acquisition, and knowledge of mothers regarding infant feeding practices and changes in their infant feeding behaviour. The connections between the various variables mentioned raised certain questions (refer to research questions) which the researcher sought answers to.

Based on these questions specific concepts (Table 3.1) and the information needed on them, and how the information would be gathered were outlined and defined. A questionnaire (appendix I) was designed to solicit information from the respondents

TABLE 3.1: Main Concepts, Information Required about Them, and Sources of that information

MAIN CONCEPTS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD OF INFORMATION GATHERING
Mothers knowledge	• What mother know • What mothers have heard • Mothers understanding of what they have heard or know	Mothers and public health nurses (agents)	Individual interviews and questionnaire
Methods of information delivery and information reception	• How infant feeding information is transmitted to the mothers • How mothers received the transmitted information	Mothers and the public health nurses (agents)	Individual interviews and questionnaire
Infants feeding practices	• Foods given to infants at the various stages, i.e. 0-6 months, 6-7 months, 7-12 months and reasons why such foods are given • Number of times food are given and why • Preparation of the foods given and reasons	Mothers and the public health nurses (agents)	Individual interviews and questionnaire
Mothers background characteristics	• Age • Educational background • Number of children	Mothers	Individual interviews

3.3 Study Area

The study was conducted in the Accra metropolis in the Greater Accra Region of Ghana. Five polyclinics were used for the study. Mothers who attended postnatal and antenatal clinics in such polyclinics were covered for the study. These polyclinics are Mamobi polyclinic, Kaneshie polyclinic, Adabraka polyclinic, La polyclinic, and Mamprobi polyclinic. These clinics are important places where public health nurses (extension agents) give mothers information regarding improved infant feeding practices on specific days.

3.4 Study Population

The study Population comprised

1. Nursing mothers with infants between the ages of 0-12 months and attending antenatal clinic at any of the five polyclinics for information on infant feeding practices
2. Public Health nurses (extension agents) who had knowledge of or training in infant feeding practices and were in contact with the mothers for the purpose of making available information on improved infant feeding practices to enable the mothers to improve their infant feeding practices

3.5 Sampling Technique

Nursing mothers with infants between the ages of 0-12 months and attending antenatal clinic were purposively selected because of the nature of information needed to answer the objectives of this study. This technique was chosen because once a mother visits any polyclinic for purposes of weighing the child, there was a higher possibility of coming

into contact with a public health nurse who will make information on improved infant feeding practices available to her. These polyclinics have specified days where the mothers assembled for information. For Mamobi polyclinic it was every Tuesday of the week, Wednesday for Kaneshie polyclinic, Thursdays for Adabraka polyclinic, and Fridays for both La and Mamprobi polyclinics respectively.

3.5.1 Selecting the Respondents

A total of 100 mothers were used for the study. Twenty mothers each were selected from each of the five polyclinics. At each of the polyclinics, the mothers were grouped and numbers from 0-9 were written. One of the mothers is called to pick a number. The number picked is used to choose mothers as they are seated. Example if at Mamobi, number two was picked; therefore every mother occupying a second position was picked till all the twenty were got. This continued until at each of the clinics all the 20 respondents were got. All the public health nurses who were involved in educating mothers were selected.

3.6 Data Gathering Instrument

Interview schedule were designed for the mothers (appendix I) to solicit information from them while questionnaires (appendix II) were given to the nurses to fill them out. The questionnaire used had both open and closed ended questions. The questionnaire was pre-tested at the maternal and child health unit at the Achimota Hospital. After the pre-test, most of the questions were revised after consulting my supervisor, other colleagues both in my own department, from sociology and adult education. Other lecturers from various

departments were also contacted to ensure validity and reliability of the questions in providing answers to the stated objectives of the study.

3.7 Data Gathering Process

The investigator visited each of the polyclinics on their clinic days, join the mothers and listen to the talks given by the nurses. After this the researcher sat with each of the selected mothers and explained every question in the interview schedule while they provided answers to them. This process continued at each clinic until all the mothers were interviewed. The questionnaires for the agents (nurse) were given to them to fill by themselves.

3.8 Data Analysis

The data was reduced and coded. The SPSS (statistical package for social sciences) program was used to analyse the data into frequency and percentage distributions and presented in tables. Based on these tables key variables of personal characteristics of the respondents, information delivery and acquisition, and the practising levels of the respondents were compared. The relationship between the knowledge of the respondents and their infant feeding practices were also established and compared for difference.

CHAPTER FOUR

FINDINGS

4.0 Introduction

This chapter shows the findings of the study. The findings are presented to reflect mothers knowledge and practices at three distinct periods in the lives of their infants. These are 0-6 months (period of exclusive breast-feeding), 6-7 months (transition to the introduction of solid foods) and 7-12 months (where solid food levels are increased). The chapter is divided into four sections. Section A shows the newly introduced knowledge in infant feeding to the mothers and the mothers previous and newly acquired knowledge regarding infant feeding. Section B shows the mothers infant feeding practices. Section C shows mothers channels of information reception, appropriateness of the information received and the methods of information delivery used by the extension agents. Section D shows the mothers background characteristics.

SECTION A

4.1 Knowledge of Mothers

This section presents the introduced knowledge and mothers previous and new knowledge acquired. It also shows how the mothers were categorised into three groups based on the responses they gave.

4.l.lNew Knowledge on Infant feeding (Standard Knowledge)

Research has proven that breast milk alone is able to sustain the infant from 0-6 months after which the infant needs other semi-solid foods in addition to breast milk (WHO, **1989).** The reason for the introduction of semi-solid foods at six months or thereabout is that the infant cannot survive entirely on breast milk alone at such periods. They need more nutrients, which the breast milk alone cannot provide for them from six-seven months going. Foods that has been suggested by WHO to be good for the infant within such age range is completely sieved cereal porridge cooked veiy thin, given at least once to three times daily. The reason being that the infant needs time to be accustomed to such foods and that their stomachs are not well developed to digest thick foods. Then from the seventh to the twelfth month, infants needed increased numbers of variety of semi-solid as well as solid foods alongside breast milk at least thrice a day, however, peppery or hot foods should be avoided (WHO, **1997).** In Ghana suggested foods for infants in the **7-12** month age group include cereal porridge cooked a bit thick, "mpotompoto", kenkey, rice and stew etc. At this stage the infants need more energy and protein foods for bodybuilding (Wunu, Solaga, Williams **1998).**

4.1.2 Previous Knowledge of Mothers

All the mothers indicated that they knew previously that infants were exclusively breast fed at least two months before being introduced to cereal porridge and/or milk formula together with adult foods.

4.1.3 Current Knowledge of Mothers

After interacting with the nurses at the polyclinics, all the mothers indicated that they became aware that breast milk alone is the best food that should be given to infants from birth till they are six-month old before introducing them to cereal porridge. However, only 75% out of the total sampled mothers mentioned that they have accepted and are practising the six-month exclusive breast-feeding.

4.1.4 Levels of infant feeding practices of Mothers

For this study, mothers are categorised into three groups. The basis of the categorisation is the WHO (1989) research finding that liquid diets are essentially the best food for the infants, with breast milk being the best liquid diet for the infant from birth to six months of age. The mothers who have accepted this knowledge given to them and are practising it are classified as having absolute level practice with regards to infant feeding, they form group one. All others who have accepted this knowledge but are giving their infants milk base supplement in addition to breast-milk are classified as having medium level practice. They form group two. All mothers who have accepted this knowledge but give non-milk base supplement such as porridge form group three, and are classified as low-level practice.

SECTION B

4.2 Infant Feeding Practices of Mothers

This section describes the infant feeding practices of the sampled mothers in the study, during the three critical stages of growth in the life of infants. The three stages are 0-6, 6-7, 7-12 months respectively.

4.2.1 Mothers Infant Feeding Practices From 0-6 Months

The responses given by the mothers show that **75%** of the total sample is exclusively breast- feeding their infants from birth to six months period so they form group one. While ten percent are feeding breast milk and milk formula they form group two. Group three is made up of **15%** of the remaining mothers who fed their infants with breast milk and cereal porridge from birth to the six-month period in the life of the infant.

4.2.1.1 Reasons given by mothers for their infant (0-6 months old) feeding practices

The mothers in group one mentioned that they exclusively breast fed their infants because they think that breast milk alone is the best food for their infants within this age group. Majority (90%) of the mothers in group two said they are out from the home most part of the day so their infants need some supplement when they are away, with mothers in group three stating that they think breast milk alone is not sufficient for the infants within this age range.

4.2.2 Mothers Infants Feeding Practices from 6-7 Months Old

Table 4.1 shows that majority of the mothers in all the groups feed their infants in this age range with cereal porridge in the form of local 'akasa' or 'koko', or fortified weanimix or cerelac. More than half (53%) of the mothers gave their infants local cereal porridge and breast-milk, while 28% of them gave fortified cereal porridge in the form of cerelac and weanimix and breast-milk with a few (2%) still exclusively breast feeding their infants in this age group.

Table 4.1 Percentage Distribution of mothers infant feeding practices from 6-7 months

Foods Given	Group One		Group Two		Group Three		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq	%
Porridge + Breast-milk	44	44.0	5	5.0	4	4.0	53	53.0
Weanimix+ Breast-milk	17	17.0	1	1.0	0	0.0	18	18.0
Cerelac+ Breast-milk	7	7.0	2	2.0	3	3.0	10	10.0
Porridge & Adult Foods + Breast-milk	5	5.0	2	2.0	8	8.0	13	13.0
Breast-milk only	2	2.0	0	0.0	0	0.0	2	2.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

Within group one, more than half (about 59%) of the mothers fed their infants in this age group with local cereal porridge and breast-milk, while half (50%) of mothers in group two and approximately 27% in group three also did feed their infants with the same type of food. Similar glaring differences exist among the feeding practices of the mothers. One such

difference could be seen with mothers feeding their infants with porridge, adult foods and breast-milk. Whereas 53% of the mother in group three fed their infants with porridge, adult foods and breast-milk 20% in group two and about 7% in group one also fed their infants with the same type of food.

4.2.2.1 Reasons given by mothers for their Infant (6-7 Months Old) Feeding Practices

Table 4.2 shows the reasons mothers gave for feeding their infants with the foods they mentioned. More than half (51%) of the sampled mothers said they fed their infants with the foods they mentioned because at this age breast milk alone was not sufficient for their infants. Twenty six percent stated that they were told by the agents and other mothers to feed their infants with the foods they mentioned while 14% said because they fed then-older children with the same type of food when they were at this age as their current child.

Table 4.2 Percentage Distribution of Reasons given by Mothers for Feeding their infants 6-7 months with foods mentioned

Reasons Given	Group One Freq.	%	Group Two Freq.	%	Group Three Freq.	%	Total Freq.	%
Breast-milk alone is not enough	43	43.0	7	7.0	1	1.0	51	51.0
1 was told to give such foods to infants	19	19.0	3	3.0	4	4.0	26	26.0
1 gave such foods to my older children when they were at this stage	4	4.0	0	0.0	10	10.0	14	14.0
No response	9	9.0	0	0.0	0	0.0	9	9.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

Majority (70) of mothers in group two as against approximately 57% in group one and about 6% in group three gave the reason that breast-milk alone was not enough for their infants in this age group. Similar noted difference could be identified for the reason mothers gave that they fed their older infants with such foods when they were at such age. Approximately 67% of mother in group three as against about 5% in group one gave same reason.

4.2.2.2 Number of Times Infants 6-7 months old are fed by Mothers

Table 4.3 shows the number of times mothers fed their infants (6-7 months) in a day. The number of times infants are fed with the foods mentioned by the mothers within and across the various groups vary. Whereas 59% of the sampled mothers fed their infants twice a day, 23% fed them thrice with 16% feeding their infants four or more times a day.

Table 4.3 Frequency Distribution of Number of Times infants 6-7 months are Fed

Number of Times (a day)	Group One		Group Two		Group Three		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Once	3	3.0	1	1.0	3	3.0	7	7.0
Twice	45	45.0	5	5.0	8	8.0	58	58.0
Thrice	17	17.0	4	4.0	2	2.0	23	23.0
Four and More	10	10.0	0	0.0	2	2.0	12	12.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

Sixty percent of mothers in group one fed their infants twice a day, while half (50%) of the mothers in group two and 60% in groups three also feed their infants twice a day. None of the mothers in group two fed her infant in this age group four or more times a

day whilst approximately 13% of mothers each in groups one and three fed their infants four or more times a day.

4.2.3 Mothers infant feeding practices 7-12 Months Old

Table 4.4 shows the foods given to infants between 7-12 months by mothers. It is found that a similar pattern is followed here within and across the groups. More than half (59%)of the sampled mothers gave their infants Banku, other foods and breast-milk, while 23% of them gave cereal porridge in addition to breast-milk while only one percent still exclusively breast feeding in this age group.

Table 4.4 Frequency Distribution of the infant feeding practices of mothers from 7-12 months

Foods Given	Group One Freq.	%	Group Two Freq.	%	Group Three Freq.	%	Total Freq.	%
Porridge + Breast-milk	17	17.0	4	4.0	2	2.0	23	23.0
Banku & soup + Breast-milk	13	13.0	1	1.0	3	3.0	17	17.0
Banku & other Foods + Breast-milk	45	45.0	5	5.0	9	9.0	59	59.0
Breast-milk only	0	0.0	0	0.0	1	1.0	1	1.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

Several glaring differences exist among the feeding practices of the mothers within each group. More than half (60%) of the mothers in group one were feeding their infants in this age group with Banku, other foods and breast-milk, 50% in group two and 60% in three also fed their infants with the same type of food. Again, while approximately 22% of the mothers were feeding their infants with porridge and breast-milk in group one,

40% and approximately 13% in groups two and three respectively, also fed their infants with the same types of foods.

4.2.3.1 Reasons given by mothers for their infant (7-12 months old) feeding practices

Table 4.5 shows the reasons mothers gave for feeding their infants with the foods they mentioned. More than half (57%) of the sampled mothers said they feed their infants with the foods they mentioned because at this age the infant is now accustomed to adult foods. Twenty seven percent stated that at this age infants need a variety of foods to grow well while 10% said they were told by the agents and other mothers to feed their infants in this age range with the foods they were using.

Table 4.5 Percentage Distribution of reasons given by mothers for feeding infants 7-12 months

Reasons Given	Group One Freq.	%	Group Two Freq.	%	Group Three Freq.	%	Total Freq	%
Infants need a variety of foods to grow well	13	13.0	7	7.0	7	7.0	27	27.0
1 was told to give such foods to my infants	7	7.0	1	1.0	2	2.0	10	10.0
1 saw other mothers give such foods to their infants at this age	5	5.0	0	0.0	1	1.0	6	6.0
Infant is now accustomed to adult foods	50	50.0	2	2.0	5	5.0	57	57.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

Approximately 67% of mothers in group one as against 20% and about 33% in groups two and three respectively gave the reason that infants are now accustomed to adult food at this age. Similar noted differences are evident within the respective groups. Seventy percent of mothers in group two as against approximately 47% in group three and about 17% in group one said they fed their infants with a variety of foods to ensure that they grow well.

4.2.3.2 Number of Times Infants 7-12 months old are fed by Mothers

Table 4.6 shows the number of times mothers fed their infants (7-12 months) in a day. The number of times infants are fed with the foods mentioned by the mothers within and across the various groups vaiy. Whereas 35% of the sampled mothers fed their infants thrice a day, 21% feed them once with 34% feeding their infants twice a day.

Table 4.6 Frequency Distribution of Number of Times infants 7-12 months are Fed

Number of Times (a day)	Group One		Group Two		Group Three		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Once	16	16.0	2	9.5	3	14.3	21	21.0
Twice	23	23.0	3	3.0	8	8.0	34	34.0
Thrice	29	29.0	4	4.0	2	2.0	35	35.0
Four and More	7	7.0	1	1.0	2	2.0	10	10.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source Field Data

Approximately 31% of mothers in group one fed their infants twice a day, while 30% and about 53% in groups two and three also fed their infants twice a day. A similar noted difference is seen when it comes to feeding infants thrice. Approximately 39% of mothers in group one, 40% in group two and 13% in group three feed their infants thrice a day.

SECTION C

4.3 Method of Information delivery and channels of information acquisition

This section describes the methods used in information delivery by the agents (public health nurses) and other sources of information regarding infant feeding of mothers and the channels through which mothers received information on infant feeding practices. The specific information the mothers received from the sources identified are also presented.

4.3.1 Source of Information

The mothers mentioned several sources from which they get their information. Table 4.7 shows that the agent is the main source of information for the sampled mothers. Again, mother-to-mother as a sources of information to the sampled mothers also featured prominently.

Radio as source of information was not used by any of the mothers in group three, while approximately 85% of mothers in group one and 15% in group two used it as an additional source of information. None of the mothers in groups one and three received information from infant food sellers.

Table 4.7 Distribution of Mothers' Sources of Information regarding infant feeding

Source of Information	Group One Freq.	%	Group Two Freq.	%	Group Three Freq.	%	Total Freq.	%
Public Health Nurse (agents)	75	75.0	10	10.0	15	15.0	100	100
Mother-to-mother	40	75.5	6	11.3	7	13.2	53	100
Radio	11	84.6	2	15.4	0	0.0	13	100
Print media	6	60.0	3	30.0	1	10.0	10	100
Infant food sellers	0	0.0	1	100.0	0	0.0	1	100

(Multiple responses. Percentages and numbers are not mutually exclusive) Source: Field Data

4.3.2 Information provided by the sources mentioned by the mothers in group one

Table 4.8 shows that all the mothers in this group received information on infant feeding practices within the three distinct stages of the infant life from the agent. Other mothers as a source of information featured prominently in the provision of information regarding foods to be used to feed infants for the three distinct stages in the lives of the infant. None of the mothers in this group ever received information on specific foods to be used to feed infants from radio or print media.

Table 4.8 Distribution of Mothers in group one by type of Information Received from different Sources

TYPE OF INFORMATION	SOURCES							
	Agents		mother-to-mother		Radio		Print Media	
	Freq	%	Freq	%	Freq	%	Freq	%
Exclusive Breast feeding	75...	100.0	11	14.0	2	2.7	" 1	1.3
Preparing and feeding Infants with cereal Porridge	75	100.0	7	9.3	0	0.0	0	0.0
Preparing and feeding Infants with nutritious Foods from seven months	75	100.0	11	14.7	7	9.3	4	5.3
Specific foods to be used To feed infants from 6months	75	100.0	4	5.3	0	0.0	0	0.0
Giving water and porridge To infants at 4 months	0	0.0	7	9.3	0	0.0	0	0.0
Keeping baby's bottle	0	0.0	0	0.0	3	4.0	0	0.0

(Multiple responses. Percentages are not mutually exclusive) Source: Field Data

4.3.2.1 Appropriateness of the information provided by the sources mentioned by mothers in group one

In comparison with the standard knowledge i.e. breast-milk being the best food for infants for the first six months before the introduction of cereal porridge (WHO, 1989), the sampled mothers in group one rated all messages they had received as appropriate except giving water and porridge to infants at four months received through mother-to-mother contacts.

4.3.3 Information provided by the sources mentioned by the mothers in group two

Table 4.9 shows that the agents provided information regarding foods to be used to feed infants within the three distinct stages in infant life to mothers in this group. However, 10% of the mothers in this group received extra information on preparing and feeding infants with nutritious foods from seven months through mother-to-mother contacts, radio and print media. While 10% received information on how to prepare milk formula from sellers of infants' foods.

Table 4.9 Distribution of mothers in group two by type of information from different Sources

TYPE OF INFORMATION	" SOURCES									
	Agents		mother-to-mother		Radio		Print Media		infant food sellers	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Exclusive Breast feedingTo	10	100.0	3	30.0	1	10.0	0	0.0	0	0.0
Preparing and feeding Infants with cereal Porridge	10	100.0	2	20.0	0	0.0	0	0.0	0	0.0
Preparing and feeding Infants with nutritious Foods from seven months	10	100.0	1	10.0	1	10.0	1	10.0	0	0.0
Specific foods to be used To feed infants from 6months	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Preparing and feeding Infants with milk	0	0.0	0	0.0	0	0.0	0	0.0	1	10.0
Keeping baby's bottle	0	0.0	1	10.0	0	0.0	1	10.0	0	0.0

(Multiple responses. Numbers and percentages are not mutually exclusive) Source: Field Data

4.3.3.1 Appropriateness of the information regarding infant feeding received from the sources by mothers in group two

In comparison with the standard knowledge i.e. breast-milk being the best food for infants for the first six months before the introduction of cereal porridge (WHO, 1989), mothers in this group rated all the information they received from all the identified sources as being appropriate.

4.3.4 Information provided by the Source Mentioned by the Mothers in Group Three

Information provided by the sources mentioned by mothers in group three as shown in Table 4.10 below, indicates that, 20% of the mothers received information on preparing and feeding infants with nutritious foods from seven months through mother-to-mother contacts, while approximately 7% of them received this same information from print media.

Table 4.10 Percentage Distribution of mothers in group three by type of Information received from different Sources

TYPE OF INFORMATION	SOURCES					
	Agents		mother-to-mother		Print Media	
	Freq	%	Freq	%	Freq	%
Exclusive Breast feeding	15	100.0	0	**0.0**	0	**0.0**
Preparing and feeding Infants with cereal Porridge	15	100.0		6.7		**0.0**
Preparing and feeding Infants with nutritious Foods from seven months	15	100.0		**20.0**		6.7
Giving water and porridge To infants at 4months	0	0.0		**20.0**	0	**0.0**

(Multiple responses. Numbers and percentages are not mutually exclusive)
Source: Field Data

4.3.4.1 Appropriateness of the information regarding infant feeding received from the sources mentioned by mothers in group three

In comparison with the standard knowledge i.e. breast-milk being the best food for infants for the first six months before the introduction of cereal porridge (WHO, 1989), the mothers in this group rated all the information they have received from the sources as being appropriate except giving water and porridge to infants from 4months that they received through mother-to-mother contact, which they rated as inappropriate.

4.3.5 Mode of Information Delivery

The public health nurses (agents) mentioned that in delivering the messages to the mothers, they grouped them and talk to them using demonstrations and pictures. After this they counsel the mothers individually (one-to-one basis).

4.3.6 Channels of Information Acquisition by Mothers

The mothers in various groups mentioned different channels through which they received information on infant feeding practices. Majority (80%) of the sampled mothers said they received information through group talk and other sources such as reading print media while 7% out of the total sampled mothers received information by observing other mothers. However, in group one 36% of the mothers mentioned that they have received information through group channels only, with 40% receiving information on infant feeding through individual channels only, while the remaining 24% received information on infant feeding through both group and individual channels. A similar trend is seen in group two where 47% of the mothers mentioned individual channel such as face-to-face

talk, while approximately 13% mentioned group channels such as group talk as the only means through which they have received information on infant feeding with **33%** receiving information through both group and individual channels. Seven percent of the mothers received information through observation. Majority **(70%)** of the mothers in group three received information through individual channel such as face-to-face talk as the only means through which they have received information while **60%** received information through both individual and group channels. Ten percent of the remaining received their information through group channels such as group discussions.

SECTION D

4.4 Mothers Background Characteristics

This section shows the demographic background of the mothers used for the study. The characteristics presented in this section include mothers' age, educational level, occupation, number of children, and the length of hospital attendance (contact with extension).

4.4.1 Age of Mothers

The ages of the mothers shown in table **4.11** reveals that majority of the mothers **(80%),** were between the ages of **22** to **33,** indicating very young motherhood. However, there are noted differences existing amongst the ages of the respondents. However, **20%** of mothers in group two were between **22** to **24** years, whereas approximately **19%** in group one and **13%** in group three were also found to be in this same age range. Again, **20%** of mothers in group three were between the age range of between **37** to **39** years while none

talk, while approximately **13%** mentioned group channels such as group talk as the only means through which they have received information on infant feeding with **33%** receiving information through both group and individual channels. Seven percent of the mothers received information through observation. Majority **(70%)** of the mothers in group three received information through individual channel such as face-to-face talk as the only means through which they have received information while **60%** received information through both individual and group channels. Ten percent of the remaining received their information through group channels such as group discussions.

SECTION D

4.4 Mothers Background Characteristics

This section shows the demographic background of the mothers used for the study. The characteristics presented in this section include mothers' age, educational level, occupation, number of children, and the length of hospital attendance (contact with extension).

4.4.1 Age of Mothers

The ages of the mothers shown in table **4.11** reveals that majority of the mothers **(80%),** were between the ages of **22** to **33,** indicating very young motherhood. However, there are noted differences existing amongst the ages of the respondents. However, **20%** of mothers in group two were between **22** to **24** years, whereas approximately **19%** in group one and **13%** in group three were also found to be in this same age range. Again, **20%** of mothers in group three were between the age range of between **37** to **39** years while none

of the mothers in groups two and 4% in group one were in this age range. Similar noted differences exist among the mothers ages identified in the study.

Table 4.11 Percentage Distribution of the Ages of Mothers

Age of mothers (in years)	Group One Freq.	%	Group Two Freq.	%	Group Three Freq.	%	Total Freq.	%
19-21	12	12.0	1	1.0	0	0.0	13	13.0
22-24	14	14.0	2	2.0	2	2.0	18	18.0
25-27	10	10.0	1	1.0	4	4.0	15	15.0
28-30	16	16.0	3	30	5	5.0	24	24.0
31-33	17	17.0	2	2.0	2	2.0	21	21.0
34-36	3	3.0	1	1.0	2	2.0	6	6.0
37-39	3	3.0	0	0.0	0	0.0	3	3.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

4.4.2 Number Of Children of Mothers (Experience in infant feeding)

The number of children of the respondents in all the groups ranged from one to five children. Group One is made up of approximately 43% first timers i.e. mothers who have just had their first child, and thus having had no experience in infant feeding, and 57% of mothers having had more than one child. Group two on the other hand is made of 50% first timers and 50% of mothers who have more than two or more children, and thus having had experience in infant feeding. Group three is made up of 20% first timers and 80% mothers who have more than one child.

4.4.3 Occupation of Mothers

The occupational distribution of mothers shown in Table 4.12 reveals that majority (71%) of the sampled mothers were self employed, while 12% were unemployed with 17% working for some people. Differences exist among the mothers in the various groups. More than half of the mothers in both groups one and two as well as all the mothers in group three were self employed. Thirty percent of mothers in group two and approximately 19% in group one were employed by somebody, while 15% in group one and 10% in group two were unemployed.

Table 4.12 Percentage Distribution of the Occupation of Mothers

Occupation	Group One		Group Two		Group Three		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Unemployed	11	11.0	1	1.0	0	0.0	12	12.0
Self Employed	50	50.0	6	6.0	15	15.0	71	71.0
Employed by some One	14	14.0	3	3.0	0	0.0	17	17.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

4.4.4 Educational Background of Mothers

The educational background of the sampled mothers were identified and presented table 4.13. The educational background of the mothers ranged from no formal education to tertiary level. More than half (56%) of the mothers had basic form of education while 17% had Technical/Vocational forms of education and 9% have no formal education. Fourteen percent of the mothers were found to have secondary education.

However, there are noted differences existing among the mothers educational levels within and across the groups. Whereas 53% of the mothers in group one had basic forms of education, 60% and 67% in groups two and three respectively also had basic forms of education. None of the mothers in group three had tertiary education, however, 4% in group one and 10% in group two had tertiary level of education.

Table 4.13 Percentage Distribution of Educational Background of Mothers

Educational Background	Group One		Group Two		Group Three		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No formal Educ.	6	6.0	0	0.0	3	3.0	9	9.0
Basic Education	40	40.0	6	6.0	10	10.0	56	56.0
Secondary Educ.	11	11.0	1	1.0	2	2.0	14	14.0
Tec/Vocational Educ.	15	15.0	2	2.0	0	0.0	17	17.0
Tertiary Education	3	3.0	1	1.0	0	0.0	4	4.0
Total	75	75.0	10	10.0	15	15.0	100	100.0

Source: Field Data

4.4.5 Length of Clinic Attendance (Contact with Extension Agents)

The mothers in the various groups attended clinic either during the antenatal or postnatal period or both. At these clinics mothers come into contact with extension agents who give them information regarding infant feeding. In group one 4% of the mothers attended clinic only when they gave birth i.e. during the post-natal period, while the majority (96%) attended clinic during pregnancy and after having given birth. All mothers in group two attended clinic when they were pregnant and after delivery. The attendance of Mothers in group three is no different from their colleagues in group one, 7% attended clinic when they were pregnant and the majority (93%) during pregnancy and after delivery.

4.5 Summary

The chapter is sub-divided into four sections, with each section looking at certain specific attributes under study. The first section looked at mothers' acceptance of ideas and their practising level. The mothers old knowledge in infant feeding was identified. The new knowledge on infant feeding was obtained mainly from the public health nurses. Based on this the mothers new knowledge acquired was ascertained. The responses given by the mothers were categorised into three different practising levels. Those in group one were classified as having absolute practice level, followed by group two with medium practicing level and group three mothers having low practice level.

Section B showed that the infant feeding practices of the mothers within and across the various groups differ. It was shown that 75% of the sampled mothers exclusively breast-fed their infants for the first six-month period of the infants life, while 10% of the mothers gave in addition to the breast-milk a milk base such as lactogen or SMS to their infants within this same age group with 15% adding a non-milk base such as cereal porridge to the breast milk. Based on this, three distinct classes or groups were identified. In the transitional period of the infant life, i.e. 6-7 months, majority of the mothers in all the groups gave cereal porridge as such as local ‘akasa’ or ‘koko’, or fortified cereal porridge such as cerelac or weanimix in addition to breast-milk, as weaning foods to their infants. Some mothers (13%) gave cereal porridge and other adult foods such as ‘banku’, rice, ‘mpotompoto’ etc. and breast-milk to their infants in this age range. Mothers mentioned several varieties of foods they gave to their infants within 7-12 month period. Notable among these foods are ‘mpotompoto’, ‘banku’, rice, kenkey and cereal porridge.

The third section looked at the channels through which mothers have received information and the very nature of information they have received. The agent was mentioned by all the mothers in the three groups as being the main source of information, while mother-to-mother contact also featured prominently as a means through which mothers received information. Mothers in groups one and two mentioned print media and radio as their additional source of information on infant feeding practices. Mothers in group three did not mention radio as other sources of information. The channels through which mothers received information included individual face-to-face talk and group discussions with others observing their colleagues. The last sections looked at the mothers background characteristics. Here it was found that the ages of the mothers in group one were across all the age ranges identified. 19 to 39 years. The spread of the ages of mothers in group two ranged from 19 to 36, while that of mothers in group three was between 22 to 36 years. Majority of the mothers in groups one and two were self-employed while others worked for somebody. All the mothers in group three were all self employed. The educational background of the sampled mothers ranged between no formal education to the tertiary level with the concentration (70%) being at the basic and secondary school level. None of the mothers in group had tertiary education, while some (4%) mothers in groups one and two had tertiary education. All mothers in group two had formal education while some mothers (9%) in both group one and three had no formal education.

CHAPTER FIVE

INTERPRETATION OF FINDINGS

5.0 Introduction

The findings of the study are interpreted under the following headings.

Section A. Information Acquisition

Section B. Extension methods used in information deliveiy and mothers infant feeding practices

Section C. Acceptance of message and Infant feeding practices of mothers

Section D. Acceptance of message and changes in mothers infant feeding behaviour

SECTION A

This section looks at how mothers acquire information. It further looks at the levels of acceptance and use of messages by mothers and their background characteristics such as age, education, number of children (experience in infant feeding practices), and length of clinic attendance (contact with extension).

5.1 Information Acquisition

The findings show that all the respondent mothers were exposed to the same message on infant feeding for the three distinct periods in the life of the infant. However, three quarters of the total sampled mothers (75%) accepted and applied the message that breast

milk alone is the best food for the infant from birth to six months, while 25% did not apply the message. This finding supports the assertion made by Rogers (1962) that when a message is given to a group of people at the same time, not all of them accept and use the message. Though in the case of this study all the mothers accepted the given message. For example, in promoting tree planting in the Garu area of Northern Ghana, Gubbels (1996) mentioned that the World Neighbours created awareness on the importance of tree planting in the prevention of desertification using flannel boards and filmstrips to a group of villagers. However, after the sessions, less than a quarter of the recipients got the message exactly as it came. Several reasons could account for differences in receiving and understanding the same message by recipients. According to Mathews (1982) the attitude of an individual concerning a particular message shows the importance attached to it That is, if a person has a positive attitude toward a particular message, there is a greater possibility of accepting and using that message, than the one who may have a negative attitude toward the same message. Rogers (1995) is of the opinion that, when intended clients receive a message of change, they weigh it and compare it with their old knowledge to see which one has a higher advantage over the other. If the benefits of the old one are more than the new one received, they abandon the new and use the old. However, the reverse is also true.

Batchelor, Mckemey and Sakyi-Dawson (1999) were of the opinion that an individuals knowledge and past experiences are the factors that distort new knowledge and information received. They continued that, individuals receive different socialisation and personal history during their up bringing and therefore they tend to weigh and judge

differently. Van Den Ban and Hawkins (1996) reported that interpretations given to a message received by individuals depend on their previous experiences, mental sets and cognitive styles as well as the nature of the message. On the part of Rogers (1962) distortions given to messages by receivers account for the differences in the various aspects of the message they get. Rogers explained that individuals exposes themselves to messages that agree with their opinions, values, attitudes and previous knowledge, and then retain knowledge of it before making decisions on the basis of their perceptions whether accurate or not. Mathews (1982) see message distortions as inevitable because receivers drop out many details of the message so that it could fit into their own expectations. That is why every person sees the same thing differently.

These findings clearly indicate that the aspects of an information an individual gets from a given message is dependent upon his background characteristics, including opinions, attitudes and habits about the given idea The reason given by mothers in group three that breast milk alone is not enough for the infant for the first six months in the infant life could mean that these mothers either do not see breast milk as food or probably see it as too light to satisfy their infants. This reason given by the mothers may have created conflicting opinions regarding the mothers previous knowledge and the new knowledge regarding infant feeding in the minds of the mothers in group three. This could have accounted for the reason why these mothers are not practising the exclusive breast feeding idea given to them, though they have accepted it. This supports the assertion made by Rogers (1962) that recipients opinion about an idea affects whether or not to accept and retain knowledge of it or practice it.

Mathews (1982) citing Festinger (1976) postulated that if there are two conflicting cognitive elements in the minds of individuals at the same time, cognitive dissonance occurs. Mathews (1982) continued that these individuals would either abandon the old cognitive element or use the new one or strike a balance between the two or still resort to the old cognitive element. That could be the reason why all of them resort to their old infant feeding practices of giving cereal porridge and breast milk to infants between 0-6 months. According to Rogers (1995), people who hold strongly to their set beliefs and habits always prefer to stick to their past habits rather than welcome a new idea.

The mothers in group one ranked the agent as their most important source of information. This could mean that they trust the agents as a credible source of information on infant feeding practises. This revelation could account for the use of the accepted idea given by the agent. This supports the assertion made by Mathews (1982) that if clients have some trust in the source of information there would be high acceptance and use of the ideas embodied in the message given to them. This is the more reason why extension agents have been advised by Boone (1989) and other researchers like Engel (1993), Rogers (1995), that to enhance wider acceptability and use of messages planned to bring about change in clients, the agents should try as much as possible to win the confidence of their clients.

5.1.1 Acceptance and Use of new idea and Age of mothers

The findings reveal that the ages of the sampled mothers vary across the various groups.

In group one, the ages ranged from 19-39. However, all of them were absolutely

practising the message they received on exclusive breast-feeding for the first six months in infant life. Group two and three are also made up of mothers with varying ages. This finding seems to suggest that age may not necessarily be a determining factor regarding whether or not an individual would accept and use a idea or not. However Rogers' (1962) made an assertion that young people tends to accept and use new ideas faster than old people. Here it is found in this study that mothers who accepted the idea and were absolutely practising it were made up of different age groups, signifying a mixture of both young and middle aged women.

The implication here is that one's age per se might not necessarily be a likely determining factor of whether or not to accept and use a message at a given time. This finding supports the wise saying that the 'age of Methuselah has nothing to do with Solomon's wisdom'. Majority of the mothers in all the groups was between the ages of 23-33 years.

5.1.2 Acceptance and Use of an Idea by mothers and their educational level

The results indicate that mothers in all the three groups were of different educational backgrounds. In group one, the educational levels identified ranged from no formal education to tertiary level. The number of mothers who have had formal education in group one is high (Table 4.12) with few having had no formal education. However, comparing the educational levels of mothers across the groups, it was found that mothers in group two comparatively had a higher educational level than their colleagues in group one. Yet mothers in group are rather practicing the new knowledge absolutely. The finding revealed that even within those who had formal education in group one, the levels

were varied ranging from basic to tertiary. But all of them accepted the idea regarding infant feeding and were absolutely practising it. Probably the quality of information and the time the agents and the other sources of information had with the mothers played a significant role to the acceptance and use of the new idea Again, another probable reason could be the experience of the source(s) of information and their presentation skills may have all contributed to the acceptance and use of the new idea. If the above-mentioned factors are true then one could say that the educational level of an individual per se may not be the determinant factor as to whether or not to accept and use a given idea. However Lionberger (1960) stated that people with high formal education levels are likely to accept and use a new idea quicker than those having low formal or no education. Probably mothers in group one of this study fall into what Higgins (1990) classify as people with a high achievement motivation. Such people according to Higgins (1990) may not necessarily have had formal education but rather have a high standard of excellence, wanting to reach an achievement goal by trying various alternate ways and seeking information. Rogers (1962) identified such people as venturesome. A similar trend is seen with the educational backgrounds of mothers in groups two and three. However, all mothers in group two had formal education though the levels vary from basic education to tertiary level, but in group three it varies from no formal education to secondary level.

5.1.3 Acceptance and Use of the Idea by mothers and Number of children (Experience in infant feeding practices)

The findings on the number of children shows that, all the mothers in the three groups were made up of women who have either had their first child and thus having had no experience in infant feeding practices or those who had more than one child and thus have had experience in infant feeding practices. This finding suggests that having had previous knowledge and experience in particular situation alone may not necessarily be a likely factor of whether the individual would accept and use a new idea in a given similar situation. If the experience were the only criteria used in determining whether ah individual would accept and use a given idea in a given situation, then all the mothers in group one should have had an earlier experience in infant feeding. Higgins (1990) stated that people who have had earlier experience^) in a situation, when they encounter a similar situation stand a better chance of dealing with such situations) because their earlier experiences had built a strong knowledge base than first time encounters. However, the finding proved otherwise.

Some possible reasons that may have accounted for even first timers accepting and using the new idea could be that their educational levels are quite high to receive and synthesize ideas quickly, or they spend quality time with their source(s) of information, or even the frequency of meeting their source(s) is such that they can ask and rectify bordering questions. Apart from the above even the situation an individual is in at that particular moment of information acquisition could determine whether or not to accept and use such information. For instance if an individual is in a critical period where specific information is needed and such a person comes across the information needed,

he/she would accept and use the information received quicker than the one who is not in such critical period.

5.1.4 Acceptance and Use of the Idea by mothers and Length of clinic attendance (Contact with extension)

The result shows that mothers in all the three groups were made up of women who either attended clinic during pregnancy and after delivery thus having had a longer contact with extension services and women who only came into contact with extension at the clinic after delivery and thus having had a shorter contact with extension. These two categories of women are found in all the three groups, the meaning here could be that the length of contact with extension agents alone may not necessarily influence one's acceptance and use of ideas given. However, as mentioned earlier, perhaps the duration at each meeting was such that mothers had enough time to ask questions and get solutions to pertinent problems, or possibly most of them were in their teachable moments as a result, they easily accepted and use the information given out, or probably the presentational skills of their source(s) of information had great impact on their accepting and using of the idea given them, or may be their educational levels are quite high to receive and synthesize ideas quickly. All these factors may have accounted for the differences in acceptance and use of the new idea and not only the frequency of contact with extension agents.

SECTION B

5.2 Extension Methods Used in Information Delivery and Mothers infant feeding Practices

This section tries to establish whether there is a link between mothers infant feeding practices and their source(s) of information. It also attempted to look the link between the actual information mothers received from the identified sources, the appropriateness of the messages and mothers infant feeding practices.

5.2.1 Source Of Information and level of acceptance and use of ideas by mothers

The results show that mothers in all the groups mentioned various sources where they got their information. However, the agents were the main source of information for all the mothers, with the other sources supporting the efforts of the agents. The other sources mentioned by the mothers provided information, which either confirms or adds to what the mothers received from the agents. This supports the assertion made by Rolling (1990) that the source involved in sending similar/same information play complementary roles.

The findings again reveal that in group one some of the mothers had only the agent while some received information from three additional sources with others having two sources. A similar trend is seen in groups two and three. The indication here is that an individual having more than one source of information concerning an idea does not necessarily mean that she would accept and use that idea. This is because whether or not to accept and use an idea is not only dependant on the number of sources of information alone, other factors such as duration of meeting, frequency of meeting, one's educational level,

the situation in which the individual is in, whether he/she is teachable or not and even the presentational skills of the agent/source plus other factors all influence acceptability and use of an idea.

However, the finding reveals that mothers in group one and two had comparatively more sources of information than their colleagues in group three. This finding could account for the differences in their acceptance and use of the idea given to them. If the above statement is true, then it implies that to some extent the more sources of information one has, the higher the likelihood that that individual would practice the idea given. Because according to Rolling (1990) different sources of information play complementary roles to ensure effective communication. Probably each of different sources may have confirmed or clarified the same message sent out thereby making it easier for mothers to understand, accept and even use the idea given to them. This supports the assertion made by Rogers (1962) that when an individual hears the same message over and over on several occasions he may retain more knowledge of it and eventually use it though he may not be interested in it initially. The agent being the main source of information for the sampled mothers is an indication of how well information on infant feeding practices has been promoted in the selected polyclinics in the study area.

The finding further revealed that sellers of infant foods were not so much involved in the promotion of infant feeding practices. Their contribution may more or less be geared towards the promotion of their products rather than actual extension. The findings again show that, the mothers did not make use of radio as a source of information. Two

possibilities could be drawn from this revelation. Either the mothers in the study sample do not like listening to radio or the information about infant feeding practices is not transmitted through radio. If the former were the case then, infant-feeding messages transmitted through radio with the aim of reaching out to larger numbers of mothers would fail.

On the contrary, mother-to-mother contacts featured prominently in the diffusion of infant feeding information as majority of the sampled mothers in all the groups received information through such contacts. No wonder the sampled mothers rated other mothers as source of information as very important. The indication here is that, there exists a good interpersonal communication between the mothers in the study area. This finding supports Zikpui's (1997) assertion that people involved in the same/similar profession (in this case infant feeding) are very important sources of information particularly at the point where individuals decide whether/or not to accept and use a new practice. Their colleagues in the same profession are a store of knowledge about new as well as traditional methods, therefore a high interpersonal communication existing among such group.

One common practice in Ghana according to Nuako (1997) is that, other mother friends, grand mothers and siblings wait on a woman who have given birth. This could possibly account for the good interpersonal communication existing among the sampled mothers.

Few mothers within and across the groups mentioned books and other print media sources of information. The finding revealed that those mothers who mentioned print media especially those in groups one and two had higher educational levels than their counterparts in group three.

This revelation supports the assertion made by Van Den Ban and Hawkings (1996) that well educated people pay more attention to print media because it gives them the opportunity to select articles which interest them. The finding that some of the mothers in the groups had more than the agent as a source of information could mean that receiving messages from multiple and interpersonal sources does not account for the differences in the acceptance and use of messages.

The findings again show that some mothers in group two and three received additional information on infant feeding from radio which none of the mothers in group three ever had. The possibility here is that these additional information from the above mentioned source might have confirmed the messages received from the agent and therefore might have had a strong impact on the recipients and could account for the practice of the idea. This supports the assertion made by Rogers (1962) that when an individual hears the same message over and over on several occasions he may retain more knowledge of it and eventually use it though he may not be interested in it initially.

5.2.2 Appropriateness of Information and Extension Method Used in disseminating information

The results show that most of the sampled mothers especially those who have had two or more children in groups one and two have abandoned the old innovation on infant feeding and are using a new one either in full or modified. They (mothers) stated that with their older children they introduced them to porridge and water around three months of age. But currently mothers in group one are exclusively breast-feeding for six months while mothers in group two are giving breast milk and milk formula before they introduce their infants to weaning foods such as porridge.

However, some of the mothers in group two especially those working for someone as teachers and office workers mentioned that they have modified their infant feeding practices, giving the reason that their working conditions do not permit the use of the new idea in full. They further stated that the new idea of exclusive breast feeding demands that the infants is always with the mother throughout the day, but their working conditions do not permit them to take their infants along therefore making it impossible for them to practice this new idea in full. This is in line with Zikpui's (1997) finding on the study of shallot farmers. He identified the following three factors as determinants of the appropriateness of information as l.by comparing the innovation used before with those still being used, 2. the ratings respondents give to such innovations, 3. reasons for stopping usage of the old innovations

This finding also agrees with Rogers (1993) when he wrote that knowing about an idea is often quite different from using it because it may not suit one's conditions. The above

finding suggests that, before an individual accepts or rejects an idea, he first looks at the applicability of that idea. That is why Rogers (1995) mentioned that before individuals adopt or reject an idea, they look at certain inherent characteristics of that idea before making a decision. These characteristics Rogers mentioned are; the complexity, divisibility, relative advantage, observability. It therefore suggests that extension agents should understand the situations of their clients very well and check up to see whether the information/idea they are sending suits the clients. If this is done properly according to Boone (1989) a planned change in the clients could be achieved. The findings again shows that, the mothers especially those who had more than one child in groups one and two mentioned that the new idea received on infant feeding is comparatively better and cheaper than the practice they were using. They contended that, with the earlier practices of giving cereal porridge and water to infants before six months was very expensive. The reasons being that their infants were liable to diarrhoea and other infections, which costs them more money and time before fighting it off.

However, with the new practices of exclusive breast-feeding, their infants grow stronger and healthier and become more resilient to infections. The deduction here is that, the relative advantages derived from the new practices out weigh the old one that could be the reason why mothers in group one and two especially those who had more than one child abandoned their earlier practice. This supports an assertion made by Rogers (1995) that before an individual accepts a new idea, its advantages of the new one should out weigh the old one that the individual is using. Mothers in group three on their part mentioned that, they still prefer the old practice to the new one.

All thp mothers in group two unanimously rated the information received from the identified sources as appropriate. However, the mothers in groups one and three rated all messages they received as appropriate except one of the messages received through mother-to-mother contact. Since according to them the message contradicts with the new idea given them. Though the mothers in group three rated the information of exclusive breast feeding as being appropriate yet they are not practising it. Perhaps as mentioned earlier they are holding onto their old habits and traditions. Or it could be that their perception of the benefits of the new idea in meeting their needs is far below their expectation so they prefer to use the old idea they have than the new one. This finding supports the assertion made by Rogers (1995) that accepting and using are two different things altogether. Another finding revealed by the study indicates that the mothers in group three rated the idea of giving water and porridge to infants at 4months as inappropriate, yet they were practising it. However, mothers in group one also rated this same idea as inappropriate and were able to ignore this idea possibly because they have had more knowledge which has resulted in a change in their attitudes than their colleagues in group three. Other possible reasons that could be made from the above statement is, though other mothers as sources of information have been found to be very important in the dissemination of information. However, this could lead to misinformation especially when what is being observed is wrong. This supports the assertion made by Lionberger (1962) that if an individual in a particular profession receives information only from friends and relatives in the same profession alone could perpetuates low knowledge.

5.2.3 Acceptance and Use of ideas by mothers and Channels of Information Delivery

At the selected study area all mothers are grouped together whenever the agent is delivering messages regarding infant feeding without due consideration of their differences. The agents mentioned group and individual lectures coupled with demonstrations and visual aids as the means they use to get ideas across to the mothers. Multiple channel usage in information delivery is very good. This is because different channels meet different needs of different mothers therefore the chance of information getting to mothers would be great. However, an interesting revelation indicated by the finding is that none of the mothers in the three groups ever recall receiving information through demonstrations or visual aids from the agents. That is why Conyers and Hills (1994) advised extension officers that before messages aimed at bringing a change in clients are given out to them, agents should gather data about their clients so as to be able to determine the nature and extent of their peculiar problems. Boone (1989) further explained that data gathered about clients would help agents to know the readiness of clients to participate in externally contrived programmes and even be able to group them into recommendation domains.

The finding suggests that the mothers did not receive the information on infant feeding practices through all the channels mentioned by the agents. The probable explanation could be that the mothers may have preferred certain channels than others and therefore received information, which came to them only through their preferred channels. The implication here is that probably channels through which mothers have received information may have direct impact on whether or not to accept and use an idea in a

particular situation. However, all the mothers rated the channels through which they have received information as being appropriate for them.

The results again revealed that some mothers in group two and three received information by observing other mothers feeding their infants. Observation is another important channel through which people learn and gain knowledge. Though observing without asking questions for clarity can sometimes lead to wrong judgements. This reinforces the notion of feedback in communication. This finding is in agreement with Rogers (1995) that, an individual learns from another by means of observational modelling, where the observer extracts essential elements from the observed behaviour pattern in order to perform a similar behaviour. However, the caution here is that if the individual performing the action does it wrongly, it could have serious repercussions on those observing

It is probably because of the above observation that T&V extension system that is currently being followed in Ghana encourages the training of some clients to be the contact line of their colleagues for information either through teaching, or for them to observe their behaviour and learn.

5.2.4 Acceptance and Use of the Idea by mothers and Availability of Information

The findings further show that the information received through mother-to-mother contact and print media were readily available to all mothers who received information through such sources. This could enhance asking questions for clarity especially with the

mother-to-mother contact. However, the information from the agents though not readily available but was received on regularly scheduled meeting days. This is a good sign of extension activities in the study area. Despite the high extension agent-mother ratio in the study area the agents were able to regularly arrange meetings with mothers in the study area. This suggests their ability to create regular teaching and learning opportunities for the mothers. Information from friends and sellers of infant foods was not readily available.

SECTION C

5.3 Acceptance of new Idea and Infant Feeding Practices of Mothers

This section looks at the feeding practices of the mothers for the three distinct identified periods in the life of the infants. These periods are 0-6, 6-7, 7-12 months.

5.3.1 Acceptance of new Idea by mothers and infant feeding practices for 0-6 month period

The finding on infant feeding practices show that, mothers in group one have accepted and are using the exclusively breast feeding for the first six month period of infant life, with mothers in group two adding milk formula to the breast milk for their infants within this age group. The mothers in group one indicated that they trusted the agent as a credible source of information. It is not surprising that these mothers have accepted and using the new practice. This finding supports Mathews (1982) that if clients have trust in the credibility of the source of information, there is the likelihood of a wider acceptability and use of messages received.

As indicated earlier, some mothers in group two especially those working for some body that their working conditions put a constraint on the use of the six-month exclusive breast-feeding. They further mentioned that this idea demands that the infant is always with the mother within the whole period but they cannot take their infant to work that led to the use if milk formula. This finding supports the conclusion made by Rogers (1962) that if people receive a new idea, they may modify some aspects of it to suit their conditions. Lionberger (1960) also emphasises that the nature of a practice greatly influences whether or not clients would accept and use, modify or reject it.

The finding again reveals that all the mothers in group three have accepted the six month exclusive breast feeding and could even differentiate between an appropriate and inappropriate messages yet they were not practising what they know. This is an indication that knowing an idea is different from practising it as shown by this finding. This finding is in agreement with Rogers (1962) that, people may know about an idea but may not practice it either because it may not suit them or may be conflicting with their belief systems

5.3.2 Acceptance of new Idea by mothers and infant feeding practices for period 6-7 months

Given cereal porridge to infants within this age group was accepted and used in full or modified by majority of the mothers in the three groups as indicated by the findings on foods used to feed infants 6-7 months. Majority of mothers in all the groups were giving cereal porridge in the form of local ‘akasa’ or ‘koko’ or fortified in the form of cerelac or weanimix. The indication here is that despite the differences in the mothers acceptance

and use of the exclusive breast feeding for the first six months in the infant life, their infant feeding practices were relatively the same during the 6-7 months of their infants life. The high acceptance and use of the idea given to the mothers here could be attributed to the fact that cereal porridge is part of the normal Ghanaian diet and also it has been a normal practice of giving such foods to infants. That is, the idea is compatible with the mothers knowledge on feeding infants and food habits and therefore the mothers find it convenient and easier accepting and using the idea either in full or modified. An idea similar to an individual's practices according to Rogers (1993) is easier accepting and using than a totally different one.

A similar trend is seen with the number of times mothers fed their infants within this age group. Majority of all the mothers in the three groups fed their infants twice or thrice a day as indicated by the agent. The result clearly show that the mothers infant feeding practices within this age range of the infants life are relatively similar. The similarities in their practices at this age in the infant life is likely due to the close association between the new practice and the mothers previous knowledge. The reason given by some mothers in group two (Table 4.2) that they have given such foods to their older children when they were at this age confirms the fact that most of the mothers have previously built up some knowledge concerning the foods used to feed their infants within this age. So they found it easier and convenient accepting and using the new idea suggested by the agent. Another reason given by the mothers across all the groups was that, they gave cereal porridge because they were told to do so. This shows the significant role information sources play in bringing a change in recipients. The finding again shows that some

mothers in group one (those who accepted and are using the new infant feeding practices) exclusively breast-feeding their infants at 6-7 months. This finding again confirms the revelation that knowing and practices are two different things altogether.

5.3.3 Acceptance and use of new Idea by mothers and infant feeding practices from the period 7-12 months

The mothers feeding practices for the infants within this age group as indicated by the findings on the foods to use to feed infants was also similar. All accepted and were using the new idea given them by the agents about the foods to be used to feed infants within this age. Another revelation by the finding is that the foods used to feed infants within this group were mostly the local Ghanaian diet and also the way they prepare such foods were the same. The compatibility of the mothers food habits with the new idea received may be a likely reason why all the sampled mothers find it easier to accept and use. This finding again supports the assertion made by Rogers (1993) that a practice similar to the cultural one being used is easier to accept and use than an entirely new one.

This finding could also mean that because mothers had already built some knowledge and experience with foods they were to use to feed their infants within this age group, the mothers selected and stored these messages faster than the relatively new idea given to them. The reason could likely be that because of the earlier knowledge and experiences built up by the mothers coupled with the compatibility of the new idea to their previous one, they found it easier accepting and using the new idea. This finding again supports the assertion made by Rogers (1993) that if an idea is compatible with the recipients previous knowledge and experience, it is easier to accept and use.

SECTION D

This section looks at the changes that have occurred in the mothers infant feeding practices as a result of the information received from the various sources.

5.4 Acceptance of New Idea by Mothers and Change in Infant Feeding Practices

The ultimate aim of extension is to bring about a positive change in clients. As a result extension seeks to send information, skills, ideas, innovations, etc. to their clients. It is expected that if clients use these ideas given to them, they would improve upon their practices and bring about the desired change(s) the extensionist seek to achieve. The sampled agents indicated that they have noticed changes in their infant feeding practices of their clients. They further indicated that these changes were noticed through the feedback they got from the mothers during their scheduled meeting days. Talking about the practices of the mothers they (nurses) acknowledged that though all the mothers have accepted the new idea on infant feeding practices, however not all their clients are using the recommended practices. This they attributed it either to their work schedules or clients still holding onto their old practices.

All the sampled mothers unanimously indicated that there has been a change in their practice from adding porridge to breast milk at 4 months to exclusively breast-feeding their infants from birth to six months. However, the mothers in group one and two, especially those who had more than one child, mentioned that their infant feeding practices have changed. These mothers again stated their readiness to use these new ideas should incase they give birth in the near future. The possible reason could be that, these

mothers see the new idea as being able to solve their needs better than the old one they had so they don't see why they shouldn't retain the idea for future use.

However the mothers in group three especially those with more than one child stated that there is no change in their infant feeding practices for the first six-month period though they accepted the six month exclusive breast feeding idea. They indicated that breast milk is too light to take care of the infant for a whole six-month period. This statement indicates that, the mothers perception about the benefits the new idea would give them in meeting their needs was very low or non existent. That could be the reason why they accepted it, rated it as being appropriate and could even tell you all that they've learnt and yet they are not using it.

Looking at the working conditions of mothers in group three, one would have expected that since they are all self employed it would have been more easier to accept and use the new idea of exclusive breast-feeding than their counterparts working for somebody. However, the picture painted in this study is different. The reason could be that, though they are self-employed but the very nature of their work makes it impossible for them to practice the new idea. Possibly they work demand that one spends more time away from their infants. If this scenario is true then there's no way such mothers could practice the exclusive breast-feeding idea given to them. On the other hand the reason could also be that these mothers may instead prefer to stick to their past habits and ideas than accepting a new idea. The advice to the agents is that, they should not always expect a total acceptance and use of messages diffused to clients.

CHAPTER SEX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusions made as a result of the findings and interpretations given to them. It also indicates recommendations for improvement of extension delivery.

6.1 Conclusion

As regards the influence of the background characteristics on whether or not acceptance and use of given ideas, it was found that the mothers in the study had different background characteristic within and across all the groups. Therefore age, educational level, experience may not necessarily be the only factors that could account for either to use or not to use an accepted idea.

The findings of this research show that when information is disseminated to target clients, because of the selectivity on their part, each of them picks an aspect of the message as it fits his/her own expectations. This could likely account for the differences in acceptance and use of messages given to the mothers. Acceptance of an idea is also found as not being the same as use. Since mothers who could repeat exactly what they were told at the clinic were found not to be practising what they know and accept. The findings again showed that from 6-12 month old in the period of the infant, the mothers infant feeding practices were about the same, the reason being that the recommended practices at this age range was in line with the mothers' knowledge in infant feeding and their cultural practices.

Majority of the mothers were found to have multiple sources of information. However, mothers in group one and two were found to have received information from radio which mothers in group three did not get. This additional information could have accounted for differential practices regarding infant feeding of mothers. That could mean that having more sources of information could enhance the acceptance and use of a given idea. However, since some mothers in group one had only the agent as their source of information and yet accepted and uses the given idea, the above conclusion may not hold.

Due to time and financial constraints, this research could not delve into the actual contributions made by other information providers such as NGOs, private organisations, churches etc to the differences in the mothers acceptance and use of ideas in infant feeding practices. As this may also influence the rate of adoption. It is suggested that further research be carried out in this area.

6.2 Recommendations

Based on the findings and conclusions of this research the following recommendations have been made:

1. Extension basically deals with heterogeneous groups of people and as result, it is very difficult to bring about the desired change in the entire client as one group since one solution may not satisfy the different needs. It is recommended that extension agents should try and group their clients into homogeneous groups either using a common base like their educational levels, sources of information, experiences etc. This would help them to know where to start each group.

2. Information received through multiple and interpersonal sources could lead to increase in the acceptance and use of an idea. It is recommend that extension agents should learn to use different techniques creatively, thus they have to develop new skills in preparing and disseminating their messages using various channels available to them.

3. Mother-to-mother contacts featured prominently in the diffusion of the new idea either through face-to-face talk and/or by observation. It is therefore expedient that the one being observed does the right thing otherwise the observer copies wrongly. This is one of the problems the T&V extension system being followed in Ghana aims at solving. With this system, extension agents train people who act as contact points for their fellow colleagues either through face-to-face talk or observation. It is therefore recommended that more people (in the same profession) be trained to inject the right information to targeted clients since the importance of sources of information cannot be overemphasized in bringing a change in individuals.

4. Knowing has been found to be different from practising, however, if ideas given out are similar to previous knowledge and practices, it is easier for clients to accept and use the new one given to them. It is recommended that extension agents should tiy as much as possible to find out the previous knowledge of their clients and try as much as possible to fit the new idea into the old knowledge and practices of their clients. If this done properly, there is the greater chance that the desired changes expected in clients would be achieved.

REFERENCE

Abate, G Yohannes, C. (1987). "Traditional weaning practices in Ethiopia" Proceedings of a workshop held in Nairobi, Kenya, 12-16 October. UNICEF

Akre, J. ed. (1989). Infant Feeding: The Physiological Basis. Bulletin of the World Health Organization (suppl to) vol. 67. World Health Organization. Geneva.

Ansu-Kyeremeh, K. (1997). Communication. Education and Development: Exploring an African Cultural Setting. Ghana, University Press. Accra.

Armar, M. A. (1989). Maternal Energy Status. Lactational Capacity and Infant Growth in Rural Ghana: A study of the Interaction of Cultural and Biological Factors. Unpublished Doctoral dissertation, University of London.

Armar-Klemesu, M. A. (1998). Health, Nutrition status and Household Caring Capacity in Greater Accra: Noguchi News. University of Ghana. 6 (1), 5.

Armar-Klemesu, M. A. and Wheeler, E. F. (1991). Weaning Practices and their Outcome: A critical Look with special References to Ghana. Noguchi News. 4.(1) 3-21 Special Edition.

Berio, D. K. (1960). The Process of Communication. An Introduction to Theory and Practice. Michigan State University, Rinehart Press, San Francisco.

Blackburn, E. J. (1989). Foundation and Changing Practices in Extension. University of Guelph.

Boadi, D. (1992). Diffusion and Adoption of the Chokor Smoker in Tema U Compound Unpublished Master of Philosophy dissertation, University of Ghana.

Bobi, F. (1981). Indigenous Ghanaian Weaning Foods and their Nutrient Value: The HOME ECONOMICS: Journal of the Ghana Home Science Association. 6. (1, 2,3) 20-27.

Boone, E. J. (1989). Philosophical Foundation of Extension. In Blackburn, D. J. (Ed), FrmnHatinn and Changing Practices In Extension. (Chapter one), Ontario, University of Guelph.

Boone, E. J. (1985). Developing Programs in Adult Education. Prentice-Hall Inc. Englewood Cliffs, New Jersey.

Bovee, L. C. and Thill, V. J. (1992). Business Communication Today. McGraw-Hill Inc. New York.

Conyers, D. and Hills, P. (1994). An Introduction to Development Planning in the Third World. John Wiley and Sons. Singapore.

Dominick, R. K. (1993). The Dynamics of Mass Communication. McGraw-Hill Georgia, Athens.

Dovlo, F. E. (Undated). Infant Feeding Practices in Ghana. Unpublished Manuscript.

Ebrahim, G. J. (1997). Update on Breast Feeding. Child Health Dialogue. 9. 6

Engel, P. G. H. (1993). Diving into the Deep: Choosing an Approach to Intervention in Facilitating Agricultural Innovation (draft OP. Agricultural University of Wageningen. Netherlands.

Feeding Young Children; Child Health Dialogue (1997-). 9. 8

Fraenkel, J. R. and Wallen, N. E. (1993). How to Design and Evaluate Research in Education. McGraw-Hill Inc. New York.

Gardiner C. N. (1991). Effects of Maternal Education on Weaning Practices and Child Health. Noguchi News. 4 (1), 48-53. Special Edition.

Ghana Statistical Service, (1993). Demographic and Health Survey.

Ghana Statistical Service, (1998). Demographic and Health Survey.

GTZ and BMX (1980). Agricultural Extension. TZ Verlag, Rossdorf.

Gubbels, P. A. (1996). An Approach to Promoting Tree Planting in Africa: The World Neighbours Experience in Northern Ghana. In Havekort, B., van de Kamp, J. and Waters-Bayer, A. (Eds.) Joining Farmers Experiment: Experiences in Participatory Technology Development. Intermediate Technology Publication. UK.

Hedebro, G. (1986). Communication and Social Change in Developing Nations: A Critical View. Iowa State University Press. Aims.

Heird, W. C. (1995). Nutritional Requirements During Infancy and Childhood. In Shills, M. E. Olson, J. A. and Shike, M. (Eds.) Modern Nutrition in Health and Diseases. Williams and Wilkins. USA. 740-746.

Higgins, E. T. (1990). Personality, Social Psychology, and Person-Situation Relations: Standards and Knowledge Activation as a Common Language. In Pervin, A. L. (Ed.) Handbook of Personality: Theory and Research. The Guilford Press. New York.

Innocenti Declaration on the Protection, Promotion and Support of Breast-Feeding. 1990. Florence, Italy.

Johnson, S. H. and Kellogg, E. D. (1984). Extension's Role in Adapting and Evaluating New Technology for Farmers. In Swanson, B. E. (Ed.) Agricultural Extension Reference Manual. FAO, Rome.

Kroehnert, G. (1996). Basic Training for Farmers. A Handbook for New Trainers. McGraw-Hill Book Company. Sidney

Marcellin, A. C. (1998). Adopting Mucuna as Soil Management Crop in Republic of Benin. Unpublished Master of Philosophy dissertation. University of Ghana.

Mensah, P. P. A. (1989). Microbiological Studies of Fermented Ghanaian Maize Dough. Unpublished Doctoral dissertation. University of London.

Ministry of Health (1989). Improving Young Child Feeding Practices in Ghana. (Research Rep. no. 1).

Ministry of Health (1995). Nutrition Facts for Ghanaian Families. Nutrition Unit. Acts Commercial Ltd. Accra.

Mothercare, John Snow Inc / Manoff Group and LAC Health and Nutrition Sustainability, ISIT/URC, (1993). The State of Breast-Feeding in Ghana: Practices and Promotion. Final Report presented to USAID. April 1993.

National Programme of Action (NPA). 1981 Draft Report.

Nti, C. Owusu, R. and Aryeetey, A. (1999). Growth Pattern of Breast-Fed Infants in Accra, Ghana. Journal of Asian Regional Association for Home Economics. 6. (1) 46-50.

Nuako, S. (1997). Cultural Practices in Ghana. World Health. 2. 13-15 50th Year Special Edition.

Nutzon, F. (1984). Trends in Infant Feeding in Developing Countries. McGraw-Hill. Inc. New York.

Oakley, P. and Garforth, C. (1983). Guide to Extension Training. FAO, Rome.

Reddy, A. K. N. (1979). National and Regional Technology Groups and Institutions. An Assessment. In Towards a Global Action for Appropriate Technology. Pergamon Press. UK.

Report on Breast Feeding Counseling Course ***(1996).*** Unpublished Manuscript.

Rikimaru, T. Yartey, J. E. Taniguchi, K. Kennedy, D. O. and Nkrumah, F. K. (1998). Risk Factors for the Prevalence of Malnutrition among Urban Children in Ghana. Journal of Nutritional Science and Vitaminology. 44. 391-407

Ritchie, J. A. S. (1983). Nutrition and Families. Macmillan Press. Hong Kong.

Rogers, E. M. (1962). Diffusion of Innovations. New York.

Rogers, E. M. (1995). Diffusion of Innovations. New York.

Rolling, N. (1990). The Agricultural Research Technology Transfer: A Knowledge Systems Perspective. In Kaimowitz (Ed). Making the Link: Agricultura Research nnH Tw.hnnlnpv Transfer in Developing Countries. Westview Press. London.

Rolling, N. and Engel, P. G. H. (1991). The Development of the Concept of Agricultural Knowledge Information Systems: The Implicaiton for Extension. In Rivera and Gustatson (Eds.) Agricultural Extension: World-wide Institutional Evolution and Forces for Change. Elsvier. Applied Science Publishers Ltd. England

Savage, F. K. (1992). Helping Mothers to Breastfeed- African Medical and Research Foundation. Kenya.

UNICEF (Undated). Take the Babv-Friendlv Initiative: A Global Effort with Hospitals. Health Services and Parents to Breast-Feed Babies for the best start in Life. Unpublished Manuscript.

Van Dan Ban, A. W and Hawkins, H. S. (1996). Agricultural Extension. Blackwell Science.

World Health Organization (1997). Malnutrition: Avoiding the Downward Spiral: Improving Child Health: the Integrated Approach. Geneva

World Health Organization (1989). Protection, Promotion and Support for Breast Feeding. A Joint WHO and UNICEF statement. Geneva.

World Health Organization (1985). The Quantity and Quality of Breast-Milk. (Report on the WHO Collaborated study on Breast Feeding). Geneva

World Health Organization (1990). Weaning-from Breast Milk to Family Food. A Guide for community Workers. 4. (3). Geneva

World Health Organization and UNICEF (1988). Weaning-from Breast Milk to Family Food. _A Guide for community Workers. Geneva.

Wunu, W. Solaga, M. and Williams, B. (1998). Nutrition and Growth Monitoring. Ministry of Health. Ghana

Zikpui, D. S. K. (1997). The Effects of Extension Services on Shallot Farming in the Anloga Area: with respect to the Adoption of Innovations. Unpublished Master of Philosophy dissertation. University of Ghana.

Van Den Ban. A.W. and Hawkins.H.S. (1996). Agricultural Extension. Blackwell Science.

World Health Organisation, (1997). Malnutrition: Avoiding the Downward Spiral: Improving Child Health: The Integrated Approach. Geneva

World Health Organisation, (1989). Protection, Promotion and Support for Breast Feeding: A Joint WHO and UNICEF statement. Geneva

World Health Organisation, (1985). The Quantity and Quality of Breast Milk. (Report on the WHO collaborated study on Breast Feeding). Geneva

World Health Organisation, (1990). Weaning-From Breast Milk to Family Food A Guide for Health and Community Workers. Vol. 4 Number 3. Geneva 1990.

World Health Organisation and UNICEF (1988). Weaning; From Breast Milk to Family Food: A Guide for Health and Community Workers. Geneva. ***(1988)***

Wunu, W., Solaga, M., and Williams, B. (1998). Nutrition and Growth Monitorinp-Ministry of Health. Ghana

Zikpui, D. S. K. (1997). The Effects of Extension Services on Shallot Farming in the Anloea Area: with respect to the Adoption of innovations. Unpublished Master of Philosophy dissertation, University of Ghana.

APPENDIX I

INTERVIEW GUIDE FOR MOTHERS

ACCEPTANCE OF IDEAS REGARDING INFANT FEEDING PRACTICES BY MOTHERS AND CHANGES IN INFANT FEEDING BEHAVIOUR

This interview schedule is design to solicit information from you. I promise that any information you would provide would be kept as confidential as possible and would be used only for academic purposes. Thanks for your co-operation.

MOTHER BACKGROUND CHARACTERISTICS

1 a. Age b. no. of children.....

c. Occupation..... d. Ethnicity.....

e. Educational Level

i. no formal educ.

ii. basic educ.

iii. secondary level

iv. Tech/vocational level

v. Tertiary level

f. How Long have been attending clinic?

i. Prenatal

ii. Postnatal

iii. Other, specify.....

INFANT FEEDING PRACTICES AND KNOWLEDGE ABOUT DEVELOPMENTAL STAGES AND FOOD NEEDS

A. (FROM 0-6 MONTHS)

2. List all the foods that you give to your infant at the age of 0-6 months

a. breast-milk only

b. breast-milk and milk formula

c. breast-milk and porridge

d. other, specify.....

3. Why do you feed your infants in this age with the food you mentioned above?

a I see other women feed infants with such foods

b. That is the best food for infants at this stage

c. I was told to give such foods

d. Breast-milk alone is not sufficient

e. Other specify.....

(FROM 6-7 MONTHS)

4. List all the foods you give to your infant between this age group

a. sieved porridge and breast-milk

b. weanimix and breast-milk

c. cerelac and breast-milk

d. other specify.....

5. Why do you feed your infant in this age with the foods you have listed above?

a. breast-milk is not sufficient

b. I was told to give such foods

c. That was the food I gave my older children when they were at this age

d. The infants stomach is not well developed to accept adult food

e. Other specify.....

6. how many times do you feed your infants with the foods you have mentioned above a day?

a. once

b. twice

c. thrice

d. four and more

e. other specify.....

7. why do you feed your infant the number of times you have mentioned in a day?

8. how do you prepare the foods you have listed above?

9. why do you prepare the food the way you do?

10. briefly describe how you feed your infant with the foods you have mentioned above

(FROM 7-12 MONTHS)

11. List all the foods you give to your infant within this age group

12. why do you give such foods to the infant at this age?

    a. infants need a variety of foods at this age

    b. infants can now digest such foods well

    c. I was told to give such foods

    d. I see other women give such foods to their infants

    e. Other specify.....

13. how do you prepare the foods you have mentioned above?

14. why do you prepare the foods this way?

15. how many times do you feed your infants with foods you mentioned a day?

    a. once

    b. twice

    c. thrice

    d. four and more

    e. other specify.....

INFORMATION DELIVERY/EXTENSION TEACHING METHODS

16. have you had any information on infant feeding? Yes No.....

17. if yes from which sources do you get the information on infant feeding from?

(please tick those sources that are applicable to you more than one source is possible)

a. mothers

b. friends

c. sellers of infant foods

d. extension agents (nurses)

e. print media

f. other specify.....

18. please rate your sources of information on infant feeding in order of importance by ticking the appropriate column against the information

Source of information	most important	important	least important	not important
Mothers				
Friends				
Sellers of infant foods				
Extension agents				
Print media				
Others				

19. with regards to the information on infant feeding in general, how would you rank your major sources of information (enter rank as 1=1st, 2=2nd, 3=3rd)

Rank source

20. if yes to Q 16 fill out the table below

source place of contact Information provided mode of delivery

21. indicate the nature of information delivery about infant feeding from the sources listed in Q17

(please check you responses from below)

NATURE OF INFORMATION

Source readily available not readily available continues occasional

22. how would you rate the information you received on infant feeding?

(fill it out below indicating your rating by ticking the relevant column)

Source Information Provided Rating (appropriate, inappropriate, indifferent)

23. How would you rite the methods use in sending the information on infant feeding to you?

(please indicate by ticking the appropriate column)

Teaching method used Rating (appropriate, inappropriate, indifferent)

24. do you always understand the information you receive from your sources? Yes No

25. give a general comment on the answer given above

26. what things would you consider as newly introduced into the infant feeding over the last two years? Please specify

27. why do you consider them as new?

28. list the new idea and indicate the source from which each was introduced to you below

new idea source

29. which aspects of the infant feeding has new ideas been introduced?

30. is there any change(s) in your infant feeding practices? Yes No

31. if yes to the above question, briefly describe the changes below

old practice **newpractice**

32. if no to Q30, why?

33. if you are to have a child again in future, would you use the new feeding practices?

Yes No

ifnogoto Q35

34. if yes briefly describe how you would feed infant from birth to 12 months

35. if no give reason

APPENDIX II

INTERVIEW GUIDE FOR EXTENSION AGENTS (NURSES)

ACCEPTANCE OF NEW IDEAS BY MOTHERS REGARDING INFANT FEEDING PRACTICES AND CHANGES IN INFANT FEEDING BEHAVIOUR

This questionnaire aims at collecting data to evaluate the changes in mothers infant feeding practices as a result of extension delivery from the agents point of view. Could you please answer the questions without discussing them with any one. Where alternative responses are supplied to questions, tick the appropriate response. Where a number of ideas are suggested please put 1,2,3.. against them in order of priority.

ORGANISATIONAL ISSUES

1. Age Educational Level.....

Rank Years worked as a field worker.....

2. Have you had any training in infant feeding practices in relation to extension delivery?

Yes No

3. if yes, please state what you learnt

4. has your organisation communicated methods/strategies you should use in your interaction with

the mothers? Yes ..No..

5. if yes, what does the strategy state?

INFORMATION GIVEN TO MOTHERS ON INFANT FEEDING PRACTICES

A. FOR INFANTS 0-6 MONTHS

6. list all the foods you advice mothers to give to their infants within this age range?

Food No. of times a day Reason

B. INFANTS 6-7 MONTHS

7. List all the foods you advise mothers to give to their infants within this age range by filling the spaces below

Food No. of times (a day) Reason Mode ofpreparation Reason

C. INFANTS 7-12 MONTHS

8. List all the foods you advise mothers to give to their infants within this age range by filing the spaces below.

Food No. of times (a day) Reason Mode ofpreparation Reason

9. who chooses the messages that you give to the mothers?

Message	Choice Maker
For infants 0-6 months	.....
For infants 6-7 months	.....
For infants 7-12 months	.....

EXTENSION METHODS USED

10. What extension methods do you use in communicating the messages on infant feeding practices to the mothers?

a. group methods

b. individual face-to-face talk

c. mass methods

11. briefly describe how you use the methods you have ticked above

12. why do you use this/these methods in your extension delivery?

13. are this/these methods mentioned appropriate for the mothers? Yes ... No...

14. give reason for your answer above

15. do mothers understand the messages you give them? Yes .. No ..

16. how do you determine the answer you have given above

17. in your opinion, what new ideas have you introduce into infant feeding?

18. why do you consider such ideas as new?

19. are your clients using this/these ideas? Yes ... No...

20. give reason for the answer taken above

OUTCOME

21. have you notice any changes in the infant feeding practices of the mothers you talk to? Yes No

if no, go to Q24

22. if yes, how are you able to notice such changes identified?

23. if yes what changes have occurred in the mothers

24. if no, why has no changes occurred?