TINTVERSITY OF GHANA

SCHOOL OF PUBLIC HEALTH

A COMPARATIVE STUDY OF THE

PRACTICE OF EXCLUSIVE BREASTFEEDING AS RELATED TO THE TYPE OF

HEALTH CARE PROVIDER ASSISTING DELIVERY

BY

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DECLARATION

I hereby declare that this submission is my own work and that to the best of my knowledge, it contains no material previously published or written by another person nor material, which to a substantial extent, has been accepted for award of any degree or diploma of a university or other institution of learning except where due acknowledgement is made in the text.

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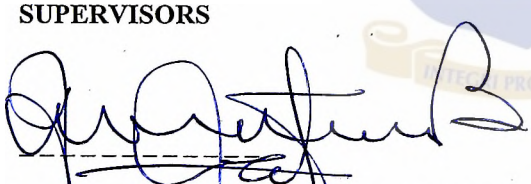

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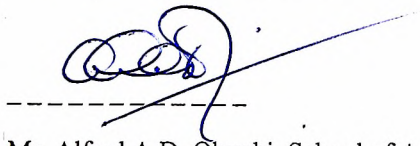

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DEDICATION

This study is dedicated to the One who cares and watches over us always, and to 'the best people in the world', my family.

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I am deeply indebted to the Director and all the staff of the School of Public Health of the University of Ghana for their much needed support and encouragement during the training we received in the diverse aspects of public health. I am particularly grateful for the 'new view' of health I have developed.

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To the chiefs, elders, assembly members and all the community members of the Akwapim South District, for their kind help and co-operation.

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ABSTRACT

This study is an investigation of one of the known factors that contribute to the high incidence of infant diarrhoea and malnutrition, the low level of the practice of 'exclusive breast-feeding'. Breast-feeding practice^ were studied in mothers who were assisted at delivery by different types of care provider in the Akwapim South District of the Eastern Region of Ghana.

In the Akwapim South District, there is a high incidence of diarrhoea and malnutrition in infants (MOH. Annual Report, Akwapim South District 1997). The practice of exclusive breast-feeding is known to significantly reduce the incidence of diarrhoea and some of the other causes of high infant and under-five mortality and morbidity, and is one way of addressing this health problem (UNICEF, 1990). However health workers are only now seriously advocating this practice in an attempt to increase the presently unacceptable low level of the practice in Ghana. This objective is being achieved through training of health workers, which equips them with the ability to educate and help mothers to breast-feed exclusively. The different levels of training given different categories of health care providers in exclusive breast-feeding gives them varying degrees of capability to ensure that all babies are exclusively breast-fed from birth till they are at least six months old.

The main objective of the study is to compare the influence of health care providers who assist mothers during delivery on the practice of exclusive breast-feeding with the view of investigating the ability of the health service to address the problem of poor infant feeding practices.

The study was cross-sectional and comparative in that it considered prevalence of the practice of exclusive breast-feeding as related to the type of health care provider who gave assistance to the mother during delivery. A structured questionnaire and an interview guide were used as tools for data collection from mothers of children aged six to twelve months and service providers respectively.

The major findings and (jonclusions of the study were:

- Mothers who were assisted at delivery by orthodox medical practitioners were three times as likely to practise exclusive breast-feeding of their infants from birth till six months as those who were assisted by trained traditional birth attendants
- Mothers who were assisted at delivery by trained traditional birth attendants were three times as likely to practise exclusive breast-feeding of their infants from birth till six months as those who were assisted by untrained traditional birth attendants or other sources of assistance
- Trained traditional birth attendants still have inadequate or incorrect knowledge attitudes and practices in the promotion of exclusive breast-feeding despite their training
- Majority of the orthodox practitioners in the Akwapim South District have the right knowledge, attitudes and practices to promote exclusive breast-feeding.
- The communities in the Akwapim South District, particularly mothers and grandmothers need to have intensive health education on exclusive breast-feeding.

The major recommendation made from the study were:

- The Ministry of Health needs to continue to train and update the TBA's in the country. They should be equipped with the required knowledge to enable them perform as well as the midwives in the district did.
- The district health administration needs to organise health education on exclusive breast-feeding not only for the mothers but also their husbands and the grandmothers of the infants for them fo have complete acceptance of exclusive breast-feeding.
- The midwives in the district need to use supervisory visits they make to TBA outfits to refresh their minds on the subject and also as a means for the TBA's to voice their problems including any misunderstandings they may have on the topic.
- The DHMT should draw up a program to retrain the TBA's t,j address their problems

cjf wrong knowledge, attitudes and practices.

♦ MCH staff should be fully involved in the program to ensure that their supervisory and monitory activities are effective

♦ The District Assembly and other institutions that are involved in development activities in the district should be involved in the activities to ensure thorough information dissemination to all community members.

♦ The untrained birth attendants should be included in the education campaigns as from the study, they had very little or no knowledge

♦ Health education at the antenatal clinics must be intensified such that even the mothers who attend limited number of clinics will be well informed.

LIST OF TABLES

LIST OF ABBREVIATIONS

AID	Agency for International Development
BFHI	Baby Friendly Hospital Initiative
DHMT	District Health Management Team
DHS	Demographic and Health Survey
IBFAN	International Baby Food Action Network
MCH	Maternal and Child Health
MOH	Ministry of Health
NMIMR	Nogouchi Memorial Institute of Medical Research
TBA	Traditional Birth Attendants
USAID	United States Agency for International Development
UNICEF	United Nations International Children's Fund
WHO	World Health Organisation

CHAPTER 1

1.0. INTRODUCTION

1.1 BACKGROUND INFORMATION

Children, regarded as 'humanity's most precious asset' are widely believed to be in a 'silent emergency' situation which has resulted in high levels of their mortality and morbidity especially in the developing world (Grant, 1983). Malnutrition and infectious and parasitic disease contribute immensely to this situation, and are often results of improper feeding practices of the mothers of these children. The dehydration caused by diarrhoeal infection is the single largest cause of deaths of children worldwide (estimated to be one every six seconds). A new global study determined that diarrhoea was responsible for 19% of deaths in children under five years old and that malnutrition alone accounted for *3%* of the deaths, but played a contributing role in more than half the childhood deaths in developing countries (Murray, 1996). There is also the fact that addition of non-nutritive and nutritive liquids and foods to infant diet has been found to double or triple the risk of diarrhoea in the first half of infancy (Popkin et al., 1990). Malnutrition commonly results from the diarrhoea and the improper diet that results from the low level of exclusive breast-feeding practice in communities.

Ghana, like many other developing countries has high levels of infant and child mortality and morbidity. The present level of infant mortality in the country is estimated at 66 per 1,000 live births (National Population Policy, 1994). Infants form 4% of the population and yet figures show the infant diarrhoea accounts for 26% of the diarrhoeal cases in the Eastern Region of Ghana (Annual Report, Eastern Region, 1997). Diarrhoeal disease

accounts for 11% of the reported communicablp disease in the Akwapim South District (MOH Annual Report, Akwapim South District, 1997), second only to malaria.

Multivariate analyses identified both breast-feeding and environmental sanitation as important determinants of diarrhoeal disease during the first 6 months of life. Inadequate environmental sanitation results in diarrhoea, which is known to kill 2.2 million children a year (Khan, 1997)

In the Akwapim South district, the low level of the practice of exclusive breast-feeding has been identified as a major contributory factor to the high levels of infant and child mortality and morbidity that the district records (MOH, Annual Report, Akwapim South District, 1997). This is made evident by documentation of malnutrition (both micro- and macro-nutrient) and gastro-enteritis being within the top five causes of mortality and morbidity in children under five years of age (Annexe Tables 2 & 3). These important contributors to the high infant mortality and morbidity in the district also cause an increased susceptibility to malaria, which already makes the highest contribution to childhood morbidity and mortality in Akwapim South (MOH, Eastern Region Annual Report 1997) as happens in all other districts in the country. The practice of exclusive breast-feeding reduces the occurrence of under-nutrition and diarrhoea in infants. As such, except for when prematurity is the cause of death it also reduces infant mortality.

The districts recorded achievements in the promotion of exclusive breast-feeding include the training of the staff of all its public health facilities in the "10 steps for successful breast-feeding" program and the' declaration of the Nsawam District Hospital as a 'Baby

Friendly Hospital' (MOH, Akwapim South District Annual Report, 1^97). Despite these initiatives, the incidence of diarrhoeal disease in the district remains high.

1.2. STATEMENT OF THE PROBLEM

There is a high level of diarrhoea and malnutrition in the infants and children of the Akwapim South District of the Eastern Region of Ghana (MOH, Annual Report, Akwapim South District 1997). This can be related to poor water supply and environmental sanitation in the district, as well as the low level of the practice of exclusive breast-feeding as reflected in the findings from surveys done in Ghana as a whole (GDHS, 1988; 1993; 1995). Factors known to influence the probability of breast-feeding exclusively include information provided by, and the practices of service providers during the antenatal, delivery and postnatal periods. These personnel educate expectant mothers and women during and after labour on the subject and support them to enable them to exclusively breast-feed for at least the first six months of their babies' lives. Their practices, including the initiation of breast-feeding within thirty minutes to an hour of birth also increase the probability of practising exclusive breast-feeding (WHO/UNICEF, 1989).

Research into the various factors contributing to the present situation Respite attempts aimed at rectifying it will help to increase the level of exclusive breast-feeding practice so as to decrease the incidence of infant diarrhoea and malnutrition in the district.

1.3. DESCRIPTION OF STUDY AREA

The Akwapim South District is the smallest of the fifteen districts in the Eastern Region constituting 1.2% of the region's surface area and with a land area of 403 sq. km. It is situated in the southern part of the region and bound by the Ga district of the Greater Accra Region in the south and east, the Eastern Regional districts, West Akim and Suhum Kraboa Coaltar in the west and the Akwapim North district in the north. The total district population is estimated at 132,093 as projected from the 1984 census, using an annual growth rate of 3%. This constitutes 5% of the regional population. The infant population in the district is estimated at 5280, this being 4% of the district population.

The population in the district is 45% urban and 55% rural with the district capital Nsawam and Adoagyiri accounting for over a third of its total population. There are over 138 communities in the district with populations less than 1000. Urban settlements consist of the towns Aburi, Nsawam and Adoagyiri and surrounding areas. The district is divided into six political sub-districts: Nsawam, Pakro, Pokrom, Panpanso, Aburi and Dego. The population distribution by sub-district is illustrated in Table 1. Nsawam sub-district alone has a population of at least 50,000.

The health infrastructure in the district includes

- Two hospitals; the District Hospital situated in the district capital, Nsawam and the Prisons Hospital.
- One health centre/post at Pakro
- Two private clinics

- Five MCH centres, three of which offer delivery services at Pokrom, Djankrbm and Adoagyiri and the other two are at Kitase and Dego. There is one community clinic at Dzatsui and the clinibs at Dego Djankorm, Adoagyiri and Kitase were given to the MOH by the community
- Seven maternity homes, which are private, mission or quasi-government institutions
- Forty trained traditional birth attendant facilities.

There is a wide range of health providers in the district ranging from the orthodox personnel who are public, mission and private practitioners, to the traditional and spiritual healers and herbalists. Since the advent of traditional birth attendant training and supervision, TBA's have assumed even more importance than ever before. There are at least one hundred and forty untrained TBA's operating in the district. Presently, various spiritual church leaders have doubled up as birth attendants and literally run maternity homes in the district. Particularly popular are the 'Musama Disco Christo Church' and the 'Twelve Apostles Church' and their branches. Returns obtained on TBA activities and supervisory visits demonstrate how very popular they are. The district itself had supervised delivery coverage of 38% ini 997 and 39% in 1996(Akwapim South District Annual Report, 1997) and TBA's account for 49.4% of all supervised deliveries in the district..

1.4. JUSTIFICATION OF THE STUDY

(i) There is a high incidence of diarrhoea and malnutrition in children in the Akv^apim South District and this is considered an important disease problem by the district. It is closely related to the poor level of environmental health and

sanitation, and pollutioji of water supply in the district. In infants specifically, it is also related to the low level of exclusive breast-feeding practice.

(ii) The low level of the practice of exclusive breast-feeding (GDHS 1993; 1995) is a major problem which has been identified by the DHMT for tackling as a means of reducing the incidence of environmental health-related diarrhoeal disease and malnutrition in infants and children.

(iii) The Nutrition Division of the Ministry of Health has the objective of increasing the adoption of ideal breast-feeding practices (Exclusive Breast-feeding from birth up till the age of six months) to 40% by December 1998 (MOH, Nutrition Division 1996). It is hoped that the findings and recommendations of this study will contribute to this national objective.

(iv) The Maternal and Child Health Division of the Ministry of Health has embarked on a major program which aims at equipping all health care providers with the skills required to enable all mothers to adopt ideal feeding practices. It is hoped that the findings from the study will serve as a means of evaluating the training programs that they have so far carried out.

1.5. OBJECTIVES

The goal of the study is to help decrease the mortality and morbidity due to infant diarrhoea and malnutrition in (he Akwapim South District by investigating a factor contributing to the low level of exclusive breast-feeding, the influence of health care providers during delivery. The study will help to make recommendations on how to make more mothers exclusively breast-feed their children from birth to six months age.

1.5.1 General Objectives

The study has two general objectives, which are to:

1. Demonstrate a relationship between the practice of exclusive breast-feeding and the type of individual who assists during delivery.
2. Estimate of the present level of the practice of exclusive breast-feeding in the Akwapim South District.

1.5.2 Specific objectives

The specific objectives are to:

1. Identify the types of care providers who assist mothers during the antenatal and delivery periods in the Akwapim South District.
2. Find out what the care providers know, believe and teach mothers during the antenatal and delivery periods
3. Find out the practices of the different categories of care providers at delivery, which affect the practice of exclusive breast-feeding.
4. Understand and establish what mothers know, believe and practise with respect to exclusive breast-feeding and how these affect the practice.
5. Establish an association between the type of health care provider assistance during delivery, other characteristics of the mother and the mother's breast-feeding practice.
6. Obtain through sampling an estimate of the present level of the practice of exclusive breast-feeding in the Akwapim South district.
7. Make recommendations to improve the level of the practice of exclusive breast-feeding.

CHAPTER 2

2.0 LITERTURE REVIEW

2.1. THE PRESENT SITUATION

The District's annual report shows morbidity and mortality patterns similar to other districts in Ghana (Tables 2 & 3). Most of the causes of ill health are known to be preventable, especially those due to infections and poor nutrition and the main causes of child mortality are known to be parasitic and infectious diseases, and malnutrition (UNICEF, 1990). Since infants have been found to require very little food or drink other than breast milk during the first four to six months of their lives, exclusive breast-feeding reduces exposure of infants to contamination of their food and provides the best quality food. It is best to feed babies only breast milk and knowledge about the practice of, and need for exclusive breast feeding during the first 6 months of life has to be and has been widely disseminated.

'Exclusive breast-feeding' is said to have been practised when an infant receives only breast milk from his or her mother for the first six months of his/ her life. To establish successful exclusive breast feeding, no drink should be given to the child before of after the first breast feeding. session, including water, glucose water, herbal teas, or other fluids. Instead, the mother should begin breast-feeding within an hour after giving birth to ensure that the infant receives the thick yellowish first milk produced during the first

few days after delivery. The new-born wil| benefit from the protective effect of the concentrated amounts of antibodies present in what is known as colostrum with the infant receiving only breast milk for the first 6 moriths of life. Since exclusive breast-feeding protects and improves the infant's health it is one of the most cost-effective ways of combating diarrhoea and other diseases particularly malnutrition-related disease in infancy and early childhood.

The problem of infant diarrhoea and malnutrition is contributed to largely by the early introduction of other liquids and foods, particularly breast-milk substitutes that spilt over from developed to the developing countries. This in many cases turned out to be quite inappropriate (WHO, 1981), especially because of the conditions of poverty and poor sanitation that occur in these countries and result in babies being fed with contaminated and inadequate milk substitutes. There was also the serious competition breast-milk met with industrial substitutes being vigorously promoted in the twentieth century. Other factors that also contributed to the decline of breast-feeding were social, such as migration of families to urban areas with erosion of traditional support systems and the influence of work on breast-feeding. More women have to work in professions and settings with employment policies not conducive to breast-feeding such as work which separates mothers and children (DeRose, 1995). The practices in health care facilities that also discouraged breast-feeding included separating mother and baby, routine bottle-feeding and delay in introducing the baby to the breast (IBFAN, 1993). Ideally, breast-feeding should be initiated within thirty minutes of delivery to ensure that babies get colostrum and also to ensure successful breast-feeding

A longitudinal survey in Peru found that the exclusively breast-fed infants had a reduced risk of diarrhoeal morbidity as compared to infants receiving only water in addition to breast-milk. There was a 25 time increased risk in the case of children who were receiving water in addition to breast-milk. Also, the early addition of food supplementation to infant feeding particularly under the prevailing environmental conditions in developing countries leads to increased diarrhoeal attacks, also associated with reduced food intake, which further worsened nutritional status (Huffman et al., 1990).

Previous research into the topic identified both breast-feeding and environmental sanitation as important determinants of diarrhoeal disease during the first 6 months of life and breast-feeding remains one of the most effective interventions for improving child survival in developing countries (Ahiadeke, 1996). For infants and children who are exposed to infection from contaminated water and poor sanitation, exclusive breast-feeding can be very crucial to survival and much of the benefit comes from the ingestion of colostrum, which is particularly rich in anti-infective properties (USAID, 1990). However, when mothers do not understand and /or appreciate the benefits of exclusive breast-feeding or even the dangers of early introduction of other fluids and foods, the probability of their adhering to exclusive breast-feeding is very slim.

The *Innocenti Declaration on the Protection, Promotion and Support of Breast-feeding* can be regarded as a major step, which was taken on August 1, 1990, to improve infant nutrition. This declaration stated a variety of specific global goals including the goal that

"all women should be enabled to practise exclusive breast-feeding and all infants should be fed exclusively on breast-milk from birth to 4-6 months of age". Thirty- two governments and ten international agencies adopted this declaration and in 1991 the UNICEF passed a resolution stating that the Declaration would serve as the "basis for UNICEF policies and actions in support of infant and young child feeding".

Thus, considering that 'improper feeding practices, in addition to diarrhoea, are important determinants of under nutrition', it was appropriate for the World Health Organisation to recommend that all infants be exclusively breast-fed from birth to 4 to 6 months of age.

In Ghana, in line with WHO recommendations, exclusive breast-feeding of all babies is to be practised from birth up to the age of six months (MOH, Nutrition Unit, 1995). Health workers (including trained traditional birth attendants) have an important role to play in ensuring that the goal is achieved. They are being trained through a course in 'lactation management' to educate mothers and support them so as to ensure that all babies are exclusively breast-fed up till that age. This role is made obvious in the 'Ten Steps to Successful Breast-feeding' (Annexe), a plan aimed at helping hospitals to change their practices and convince their staff to really promote breast-feeding. This plan is referred to as the Baby Friendly Hospital Initiative BFHI.

It is kndwn that 'incidences of diarrhoea can be cut by 40% among infants up to two months of age and by 30% among those aged 3 to 5 months by promoting breast-feeding through changes in hospital practices and providing mothers information and support' (Feachen and Koblinsky, 1984). A case-control study carried out on evidence for

protection by exclusive breast-feeding against infant mortality due to diarrhoea demonstrated a clear association and maximum risk of death that occurred in the first two months of life (Victora et al., 1987). Infants who were breast-fed exclusively had minimnm risk of mortality from infectious disease by feeding patterns (compared with 'not breast-fed' and 'breast-fed with other' foods categories).

In Ghana, the problem of the introduction of liquids such as water sugared water, juice, artificial formulae and solid food starts far earlier than the 4 to 6 months recommended. (MOH, 1993). The discarding of colostrum and early supplementation of infant diets are commonly practised within the age group 0-3 months in Ghana (Baseline Survey Report, Ghana 1992). The too early supplementation of breast-feeding with low energy cereals with little or no protein enrichment is also particularly common (Commey, 1990). These practices have deleterious effects on nutritional status because supplements are nutritionally inferior to breast milk and their use results in lower breast milk supply (GDHS 1993). The exposure of these young infants to pathogens from the use of supplements puts them at greater risk of developing diarrhoea and other infections as well, which results in the high level of under-nutrition among young infants.

The Ghana Demographic and Health Surveys (GDHS; 1988; 1993; 1995) show that nearly all women breast-feed their infants at some time after birth, (Table 4) with all figures quoted being over 90% of mothers. However, figures show levels of exclusive breast-feeding as being very low. They are quoted as 19% in 1995, 8% in 1993 and 2% in 1988 (Table 3). Pre-lacteal feeds are commonly given, with water being given both before and after breast-feeding because mothers assume babies in the hot climate must be

thirsty. In t|ie 1993 GDHS, over half of all infants were found to have been given water in addition to breast milk (a practice referred to as 'full breast-feeding'). The situation is similar in other developing countries such as Indonesia, Pakistan and Thailand were the 'ever breast-fed' figure is 97% but mother breast-fed exclusively only up to two months in most cases (Suharyono, 1997).

The policy recommendation on breast-feeding was made as the first step to improve the situation by creating awareness of the problem and finding practical solutions to it. The WHO and UNICEF launched Breast Feeding Health Initiative in 1991 to address the need for improved breast-feeding practices globally, and to encourage hospitals to support breast-feeding. In 1992-3, the 'Baby- friendly Health Initiative' Authority was established in Ghana to co-ordinate all baby-friendly activities in Ghana to firmly establish the practice of exclusive breast-feeding in the country. Presently, the emphasis is on promotion of lactation through health education to improve health worker practices and the establishment of mother support groups. A study into the practices of mothers delivered by various types of service provider could give some insight into the contributing factors as related to health providers.

The Nsawam Hospital, the Akwapim South distjict hospital, declared 'Baby Friendly' ini 997 supposedly has all the conditions necessary to ensure that mothers who deliver in their maternity unit practise exclusive breast-feeding. The supervised delivery coverage in the district for 1995 was 38%, and increased only slightly up to 40% in 1997 (MOH, Akwapim South District Annual Report, 1997). (ideally this figure should represent the

approximate percentage of mothers who practise exclusive breast-feeding. This assumption is based on the supposition that the staff who 'supervise deliveries' are all trained to enable mothers to practise exclusive breast-feeding successfully. The figure quoted in the Ghana Demographic and Health Survey in 1995 puts the level of the practice at 19%. This figure illustrates the fact that the staff who supervise the deliveries are still not as effective at getting mothers to breast-feed as they should be. Research into the factors contributing to the present situation will help to address the problem of how to increase the practice of exclusive breast-feeding and decrease the incidence of infant diarrhoea and malnutrition in the district. It is hoped that the study will contribute to efforts to increase the level of exclusive breast-feeding practice in the rest of the district. This assessment will give an insight into the present state of affairs in the district.

2.2. THEORETICAL FRAMEWORK OF THE STUDY

Care providers during parturition are likely to have a strong influence on the probability of a mother practising exclusive breast-feeding. Health education programs in the antenatal period and after birth are known to promote optimal breast-feeding practices, with a community based intervention study yielding a majority of 94% practice of exclusive breast-feeding in the intervention group as compared with 7% in the control group (Akrani||et al., 1997). It is also known that Ivomen's decisions regarding infant feeding are influenced most by custom, and advice from doctors and family members (Lipsky, 1994).

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Other factors known to influence breast-feeding practices include the/significant others',

level of education ojthe mother, her socio-economic status, child care, place of residence (rural or urban), living arrangements and 'modernisation[1]. The significant others include the mother's parents,[1] in-laws, husbands and peers. This study addresses the care provider influence. Although many health workers are in favour of breast-feeding, it is known that there is conflict among the professions working most closely with breast-feeding mothers and continuing training on lactation management and close monitoring of their practices is required for good breast-feeding support (Beeken, 1992)

Traditional Birth Attendants have and important influence and their practices may be helpful or harmful. They are knowledgeable about some aspects of breast-feeding and give mothers confidence and practical help. Training them helps them change the more harmful practices (Savage King, 1992). The study assumes that the trained traditional birth attendants are actually practising what they have been taught in their training sessions and are being properly supervised by midwives. It is also being assumed that the in-service training programme in 'Lactation Management' has had an effect only if the midwives who were trained are practising what they were taught and have passed on the information to the other midwives who have not been through the training. This also assumes the 'trickle down' effect, which is that the information on exclusive breast-feeding is being disseminated from midwives, through TBA's to mothers and the significant others is' occuring.

CHAPTER 3

3.0 METHODOLOGY

3.1 Study type

The study is comparative, and examines the prevalence of exclusive breast-feeding and its relationship with the health care provider assisting delivery. Data collected was retrospective in that it seeks to obtain information on practices of mothers with children aged six to twelve months during the first six months of their babies' lives.

3.2 Study period

Data collection for the study was carried out over a four-week period from July 17 to August 14 1998.

3.3 Operational definition of terms

Exclusive breast-feeding refers to infant feeding on only breast-milk from his/her mother or a wet nurse, or expressed breast-milk and no other liquids or solids with the exception of drops of syrups consisting of vitamins, minerals of medicines (WHO, 1991).

Midwife refers to any graduate of a nursing school and of midwifery training school qualified and authorised to provide the most competent professional nursing service working in any field of midwifery (Roemer, 1993)

Orthodox Health Care Provider refers to an individual formally trained health worker who practises the art of assisting women during pregnancy and childbirth.

Traditional Birth Attendant refers to any community member, usually a middle aged woman or man who has had little or no formal education, identified in a community as one who assists women during pregnancy and childbirth for cash or kind (Roemer, 1993).

Trained Traditional Birth Attendant is a traditional birth attendant who has successfully undergone non-formal training on hygiene and modern methods of management of pregnancy and childbirth from field personnel of the MOH. They offer antenatal, delivery and postnatal care (Roemer, 1993).

3.4 Study population

The sampling frame comprised women with infants aged six to twelve months at the time of the interview and health workers who had carried out deliveries in the Akwapim South District between August 1 1997 and February 1 1998. The reference infant age group used was selected considering that in Ghana, the practice of exclusive breast-feeding is advocated from birth till the age of six months and a twelve-month age limit would minimise memory errors or recall bias. The service providers were selected from the health institutions which provide antenatal and delivery services.

3.5 Sampling procedure . j

A multi-stage sampling technique was used to obtain the sample of mothers to be interviewed by structured questionnaire. This was carried out after stratification of the district into sub-districts with further breakdown done into communities. The mothers of about 6% of the infants in the district were interviewed. Thirty communities in the district were selected purposively and cluster sampling done to obtain the required number of respondents.

Service providers were interviewed, with purposive selection of the different types of service provider done to obtain trained midwives and trained traditional birth attendant from different communities for interview.

3.6 Sample sizes

A total of 337 women were interviewed with five to twenty being interviewed from each selected community. The total number of health care providers interviewed was 18 and they were selected purposively from the district register of trained personnel and the information ojbtained from the mothers.

3.7 Variables

The independent variable is the assistance during delivery and the dependent variable

!

the practice of exclusive breast-feeding. Other variables include demographic and socio-economic characteristics of the mother including age, parity and main occupation. Table 6 (Annexe) shows the variables and their definitions and indicators.

3.8. Training of Research Assistants

National Service Personnel and disease control staff were recruited and trained as Research Assistants. They were given a two-day orientation in data collection.

3.9. Pre-testing

The questionnaire and the interview guide were pre-tested in the outpatients department of the Nsawam Government Hospital. Three healthcare providers were interviewed including a trained traditional birth attendant who had accompanied a referred patient to hospital. Corrections and other changes were made to improve the questionnaire and the interview guide.

3.10. Clearance from local authorities

Permission was obtained from the |kegional Health Administration and District Assembly* before the study was carried out. The chiefs and elders of the communities were informed about the research program and assistance sought from them and all those concerned with health, such as the TBA'S and the village health workers. The team ensured maximur|i confidentiality of all respondents.

3.11 Data collection

The data collection techniques used included:

(i) Interviews using a structured questionnaire.

(ii) Field interviews using an interview guide.

The structured questionnaire contained 26 close-ended questions in six sections (Appendix 1). The relatively low literacy levels in the district made this the most appropriate method. A selected number of trained and untrained personnel who assist women at delivery were taken through interviews to find out their knowledge, attitudes, beliefs and practices with respect to the practice of exclusive breast-feeding for the first six months of an infant's life.

3.12 Data quality check

Supervisory trips were made to the selected sites to ensure proper data collection. All the completed questionnaires were also checked to ensure that they were consistent and logical with no missing data.

3.13 Data processing and analysis

Processing and analysis of questionnaiires be mainly quantitative and be carried out using computer software Epi Info 6 Version 6.01-August 1994. (Centres for Disease Control and prevention (U.S.A.) WHO, Geneva)

3.14 Limitations and constraints

The major limitations in the study were time ana unance. The limited period of stay in the district and the amount of field practice Work to be done impaired optimum sampling procedures. Purposive sampling had to be done to obtain the study population, which resulted in some bias.

Some of the communities were found relatively inaccessible and thus were not included in the sample. In the selected farming communities, there was a problem with meeting the mothers. Even when prior message had been sent that the team would be coming to the community, the farmers in refused to wait. By the time we arrived in the community, most of the inhabitants had already left for their farms and the remaining community members were less likely to be engaged in agriculture. The sample did not have that many farmers although in the Akwapim South District, 40.1% of the population is known to be engaged in agriculture.

Time constraints also prevented the use of statistics to control for the possible 'confounders' which were also shown to influence breast-feeding practices including the views of family and friends |of the mothers. A true picture of the actual prevalence of exclusive breast-feeding in the district could kave been obtained through simple random sampling or use of a larger sample size.

CHAPTER FOUR

4.0 RESULTS

4.1 Demographic data

The spatial distribution of the respondents is presented in Table 4.1. The sample consisted of both rural and urban dwellers with 67.5% found in sub-districts in which the district's urban population is found. These urban settlements are Nsawam and Adoagyiri, which are found in the Nsawam sub-district and Aburi is in the Aburi sub-district. About 50% of respondents were obtained from the Nsawam sub-district.

Table 4.1

Number of respondents by sub-district

Sub-district	Frequency	Percentage
Aburi	61	18.1
Dego	25	7.4
Nsawam	165	49.0
Pakro	52	15.4
Panpanso	19	5.6
Pokrom	15	4.6
Total	337	100.0

Table 4.2 illustrates the age structure of the respondents, which ranged from 18 to 40 years. Five-year age groups were used to classify the respondents and the mean age group was the 25-29 age grojup, which was also the median and had 32.2% of the population. The 20-29 combined age group accounted for over 50% of the respondents. For analysis, the age groups were classified into three main age groups: 15-24 years, 25-34 years and 34+ years.

Table 4.2

Age groups of respondents

Age-group	Frequency	Percentage
15-24	116	34.4
25-34	169	50.1
35+	52	15.4

The parity of respondents is illustrated in Table 4.3 and Figure 4.1. The parity ranged from 1 to 8 children with a mean of 2.8 children and a median of 2. About 25.5% of the mothers had only one child whilst 71.9% of the respondents had 3 children or less.

Table 4.3

Parity of respondents

Parity	Frequency	Percentage
1	86	25.5
2	82	24.3
3	74	22.0
4	49	14.5
5	23	6.8
6	9	2.7
7	6	1.8
8	8	2.4

The age distribution of the infants whose mothers were interviewed is illustrated in Table 4.4 and Figure 4.2. The highest number of children were found to be aged six months constituting 23.1 % of the population

Table 4.4

Age of infants

Age (completed months)	Frequency	Percentage
6	78	23.1
7	67	19.9
8	54	16.0
9	43	12.8
10	34	10.1
11	31	9.2
12	30	8.9
Total	337	100.0

Socio-economic status

The socio-economic status of mothers is illustrated in the following tables showing the mothers' main occupations and the highest institutional levels of education ever attended.

Fanners constituted 28.2% of the study population (95). The highest number of respondents was found in the trader/ artisan and food processor group, which was 153 and constituted 45.4% of the respondents. The professional group included those in the 'services' in the district and those who had further formal education after completing school. They constituted only 14.2% and were 48 in number. Forty-one respondents who formed 12.2% of the sample were unemployed or 'homemakers'.

Table 4.5

Main occupations and educational levels of respondents

Occupation	Frequency jl	Percentage	Schooling level	Frequency	Percentage
Farmer	95	28.2	Primary	79	23.4
Trader etc	153	45.4	Middle/JSS	130	38.6
Professional	48	14.2	Second cycle	28	8.3
Unemployed	41	12.2	Post-secondary	14	4.2
			Tertiary	3	0.9
j			Never attended	[1] 83	24.6
Total	337	100.0	Total	337	100.0

4.2 Antenatal care

Out of the 337 respondents who were interviewed, Ji J *(vi.yvo)* naa atrenaea antenatal clinic at least once during tlie pregnancy, whilst 24 (7.1%) had not attended at all. iTable 4.6 illustrates the types and frequency of use of facilities for antenatal service. The majority of respondents who attended antenatal clinics did so in Government or Mission facilities. They constituted 71.6% of the respondents (224) whilst 9.6% (30) attended traditional birth attendant antenatal clinics.

Table 4.6

Sources of antenatal care

Source of antenatal care	Frequency	Percentage
Government/ Mission facility	224	71.6
Private hospital	34	10.8
Private/ Maternity home	25	8.0
Traditional birth attendant/church	30	9.6
Total	313	100.0

The number of antenatal visits each mother made varied from one to nine or more as illustrated in Table 4.7. Sixty-one percent of the mothers paid 4 or more visits to the provider of antenatal care, with a mean number of visits of 4.4 and a median of 4. The 25th percentile and 75th percentile of visits were 3 and six.

Table 4.7

Number of respondent antenatal visits

No of visits	Frequency	Percentage
1	19	6.1
2	49	15.7
3	51	16.3
4	73	23.3
5	37	11.8
6	32	10.2
7	9	2.9
8	23	7.3
9 or more	20	6.4
Total	313	100.0

4.3 Details of delivery

Table 4.8 illustrates the different places of and care-providers that assist mothers at delivery in the Akwapim South' District. The home was the place of delivery for 35.9% (121) of the respondents and was the place that had the highest number of deliveries. The group depicting the deliveries at 'orthodox' facilities consisted of governmental, mission and private institutions. Some of the deliveries that occurred at home were assisted by trained personnel and not always by untrained birth assistants.

Midwives assisted with most of the deliveries of respondents, consisting of 44.2% (149) and the combination of midwives and trained traditional birth attendants assisted 72.4% of the deliveries. Seven of the respondents had no assistance at all during delivery

Table 4.8

Delivery place and assistance

Delivery place	Frequency	Percentage	Delivery assistance	Frequency	Percentage
At home	121	35.9	Doctor	15	4.5
Govt/mi ssio n/private	151	44.8	Midwife	149	44.2
TBA outfit or Church	64	19.0	Trained TBA	95	28.2
Others	1	0.3	Others	78	23.2
Total	337	100.0	Total	337	100.0

4.4 Breast-feeding practices of mothers

Tables 4.9, 4.10, 4.11 and 4.12 present mother breast-feeding practices up till the infant age of six months. Table 4.9 illustrates the ages at which mothers started giving water regularly to their infants. The peaks occur at or soon after birth, aj: the fourth and the

, sixth month of age. The mean age at which water was given was 4.1 months with £j

median of 6 months and the 25th and 75th percentiles being 3 and 6 months respectively.

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Forty-six of the infants (13.6%) were given water often at birth, in less than one month.

Table 4.9

Age at which water was first given

Age (months)	Frequency	Percentage
<1	46	13.6
1	13	3.9
2	24	7.1
3	29	8.6
4	37	11.0
5	15	4.5
6	171	50.7
7	2	0.6
Total	337	100.0

The age at which supplementary feeds were given showed a slightly different pattern. One hundred and seventy six infants (52.2%) of the infants were given supplementary feeds at or after 6 months. The mean age was 6.4 months with a median of 6 and the 25th and 75th percentiles at 3 and 6 months respectively.

Table 4.10

Age at which supplementary feeds were given

Age (months)	Frequency	Percentage
<1	7	2.1
1	10	3.0
2	26	7.7
3	44	13.1
4	36	10.7
5	22	6.5
6	176	52.2
7	10	3.0
8	4	1.2
9	1	0.3
11	1	0.3
Total	337	100.0

Table 4.11 illustrates the age at wliich the breast-milk only diet was stopped as related to[1] the provider of assistance during delivery. This shows the actual age of the infant at > which 'exclusive breast-feeding' was stopped. The study was concerned with the level of the practice of stopping exclusive breast-feeding at or after age six months.

Almost 50% of the infants were exclusively breast-fed up to the age 6 months. Forty-nine (14.5%) of the infants did not have a breast-milk-only diet even before they were one month old. The next peak for stopping the breast-milk only diet was at age 4 months (Figure 4.5). The mean age for stopping the exclusive breast-milk diet was 4.1 months and the median was 5 months. The 25th and 75th percentiles were 5 and 6 months respectively.

Table 4.11

Age at which breast-milk only diet was stopped

Months	Total	Percentage
<1	49	14.5
1 .	13	3.9
2	27	8.0
3	30	8.9
4	36	10.7
5	14	4.2
6	166	49.3
7	2	0.6
Total	337	100.0

Exclusive breast-feeding is maintaining a diet of breast-milk only from birth until the infant is aged six months. Tables 4.12, 4.13 and 4.14 demonstrate the relationships between exclusive bpast-feeding practice and the socio-economic status of the mother. The highest prevalence of exclusive feeding at least up to the age of 6 months was found

in the 25-34 age group. The least prevalence was found in the 35+ age group.

By educational level, the highest level was found in those who had 'post-secondary' education and the lowest in those who had tertiary education. The main occupation of mother was also a source of differences where 'professionals' had the highest and farmers the lowest prevalence.

Table 4.12

Practice of exclusive breast-feeding by mother's age group

Age groups				
Exclusive Breast-Feeding	15-24	25-34	35+	Total
No	60	81	28	169
Yes	56	88	24	168
Total	116	169	52	337
% Yes	48.3	52.1	46.2	49.8

Table 4.13

Practice of exclusive breast-feeding by educational level

Educational level of mother							
Exclusive Breast-Feeding	Primary	Middle/ JSS	2™ cycle	Post-secondary	Tertiary	Never attended	Total
No	51	51	13	2	2	50	159
Yes	28	79	15	12	1	33	168
Total	79	130	28	14	3	83	337
% Yes	35.4	60.8	53.6	85.7	33.3	39.8	49.8

Table 4.14

Practice of exclusive breast-feeding by main occupation

Type of service provider giving assistance at delivery					
Exclusive Breast-Feeding	Farmer	Trader etc	Professional	Unemployed	Total
Yes	63	73	14	19	169
No	32	80	34	22 |	168
Total	95	153	48	41	337
%Yes ---------- 1-	33.7	52.3	70.8	53.6 !	49.8

Tables 4.15-19 demonstrate the relajionships between the practice of exclusive breast-feeding the health care the mothers received. Three hundred of the respondents who ever attended antenatal clinic (53.3%) exclusively breast-fed their babies up till six months. The prevalence of exclusive breast-feeding increased with increasing number of ANC visits by each mother to a peak of 73.1% after 7 or more antenatal visits. Exclusive breast-feeding practice prevalence was highest when the source of antenatal care was a private hospital.

Table 4.15

Exclusive breast-feeding practice by source of antenatal care of mother

Place where mother attended *ANC*					
Exclusive breast-feeding	Govern./ mission	Private hospital	Private midwife	TBA outfit.	Total
Yes	102	13	14	17	146
No	122	21	11	13	167
Total	224	34	25	30	313
% Yes	54.5	61.8	44	44.3	53.3

Table 4.16

Exclusive breast-feeding practice by number of antenatal visits

. Number of antenatal visits				
Exclusive Breast-feeding	1-3	4-6	7+	Total
No	77	55	14	146
Yes	42	87	38	167
Total	119	142	52	313
% Yes	35.3	61.3	73.1	

Table 4.17.presents the prevalence of Exclusive breast-feeding by place of delivery where it was highest where deliveries occurred in government, mission and private institutions (72.2%) and lowest when deliveries were done at home or 'other' place specifically at a herbalist shrine.

Table 4.17

Exclusive breast-feeding practice by place of delivery

Place of delivery					
Exclusive Breast-feeding	At home	Govern./ mission/ private	TBA outfit	Other	Total
No	91	42	35	1	169
Yes	30	109	29	0	168
Total	121	151	64	1	337
Prevalence (%)	24.8	72.2	45.3	0	49.8

Most of the mothers who exclusively breast-fed their infants till they were six months old or more were assisted during delivery by a midwife (104 out of 168 deliveries, 61.9%). The trained traditional birth attendants assisted deliveries of 40 mothers who ended up practising exclusive breast-feeding (42.1%). The highest prevalence of exclusive breast-feeding up till the age of 6 months was found in the group of mothers who were delivered by the orthodox care providers, the midwives and the doctors (69.5%). The lowest was found in the mothers who were assisted during delivery by those who constituted the others; untrained traditional birth attendants, relatives and those who had no assistance (18.2%).

Table 4.18

Exclusive breast-feeding practice by assistance at delivery

Type of service provider giving assistance at delivery				
Exclusively breast-fed	Orthodox health workers	Trained TBA	Others	Total
No	51	55	63	169
Yes	| 114	40	14	168 1
Total	1 164	,1 95	77	337
% Yes	69.5	1 42.1	18.2	49.8

Table 4.19 illustrates the relationship between the health care providers of assistance and the practice of exclusive breast-feeding for the calculation of the 'Odds Ratios', Using the 'others' as the reference group, the 'Odds Ratio' was calculated with reference to the other

groups consisting of personnel who had received some training. The 'others' comprise all deliveries by personnel without any training including the untrained birth attendants, relatives and those who did not have any assistance at all.

The Odds Ratio i was the comparison between the orthodox medical practitioners and the 'others' and was equal to 10.06. The Odds Ratio2 was the comparison between the trained traditional birth attendants and the 'others' and was equal to 3.27.

Table 4.19

Breast-feeding practice by assistance at delivery

	Exclusively breast-fed	Not exclusively breast-fed	TOTAL
Orthodox practitioners	114	51	165
Trained Traditional Birth Attendants	40	55	95
Other assistance providers	14	63	77
TOTAL	168	169	337

The Odds ratio demonstrates that women who received assistance from trained medical personnel were 10 times as. likely to practise exclusive breast-feeding as those who received assistance from untrained personnel. Also women who received assistance from trained traditional birth attendant were 3 times as likely to practise exclusive breast-feeding as those who received assistance from untrained personnel. Lastly, the women who received assistance from the trained personnel were 3 times as likely to practise exclusive breast-feeding as those who received assistance from trained traditional birth attendants.

The practices of the different categories of care providers at delivery, which may affect

the practise of exclusive breast-feeding, include the time interval between the delivery of the baby and the initiation of breast-feeding and the education given to the mother at the time of delivery by the health service provider.

Table 4.20 illustrates the frequencies and percentages of the different time intervals in the study population.

Table 4.20

The time interval between delivery of the baby and the initiation of breast-feeding.

Time interval	Frequency	Percentage
Less than one hour	109	32.4
Less than twelve hours	107	31.8
Less than one day	47	13.9
More than one day	74	22.0
Total	337	100.0

Table 4.21 demonstrates the relationships between the types of care provider and the time intervals between delivery of the baby and the initiation of breast-feeding. The practices that are most conducive to ensuring successful breast-feeding practice include the initiation of breast-feeding within one hour of birth. The prevalence of this practice was calculated as the ratio of the number_of infants delivered by care provider who started breast-feeding less than one hour after birth and the total number of deliveries done by that type of care provider

The infants who were delivered by midwives had the highest prevalence of initiation of breast-feeding within an hour of birth (55.7%). Those delivered by doctors had a prevalence 20%, whilst those delivered by trained traditional birth attendants hud a prevalence of 15.8%. The mothers assisted by untrained TBA's and relatives and those

who had no assistance from care providers had the lowest prevalence.

Mothers who were assisted by untrained TBA's had 60.1% of their babies delivered started on breast-milk after one day.

Table 4.21

Time interval by assistance provider at delivery

	Assistance			
Time interval	Orthodox providers	Trained TBA	Others	Total
<1 hrs	86	15	8	109
<12 hrs	42	45	20	107
<1 day	16	20	11	47
>1 day	20	15	39	74
Total	164	95	78	337

4.5 Knowledge of mothers

306 of the respondents who formed 90% of the study group had at least some knowledge about exclusive breast-feeding. Whilst some had only heard about it, others had real knowledge of the facts. Thirty-one respondents, who constituted 9.2% of the study population, said they had no knowledge at all of exclusive breast-feeding.

4.6 Views on the practice of exclusive breast-feeding (attitudes)

Out of the 298 respondents who commented on their opinion about exclusive breast-feeding, 89 constituting 29.9% thought children should be given water or supplementary foods before they were aged six months. This implied that they did not agree with the practice of exclusive breast-feeding. This was opposed to 209 respondents who agreed with the practice and constituted 70.1% of the respondents who commented.

The 249 respondents whose mothers had opinions on the practice constituted 73.9% of the study population. Out of this number, 157 (63.1%) of the infants' grandmothers thought that babies should be given water or supplementary feeds before they were aged six months. Ninety-two of them (36.9%) thought babies should be exclusively breast-fed.

The percentages for mothers-in-law were similar with 68% thinking that babies should be given water or supplementary feeds before the age of six months. This figure constituted 123 of the 179 mothers-in-law who had expressed their opinion on the subject. Fifty-six (31.1%) of them agreed with the practice of exclusive breast-feeding.

Two hundred and four (60.5%) of the husbands had opinions on the subject with 51% (105) of them agreeing with the practice of exclusiie breast-feeding, whilst 99 (48.5%) of them thought that babies should be given water or supplementary feeds before the age of six months.

Beliefs in the practice of exclusive 'breast-feeding

total of 312 mothers (92.6%) gave opinions of their beliefs in exclusive breast-feeding. Out of these, 246 (78.8%) thought infants did better on exclusive breast-feeding whilst 66 (21.2%) did not believe so. Also, 22 mothers (9.2%) had previously practised exclusive breast-feeding whilst 215 (90.8%) had not tried it previously. One hundred and twenty-nine mothers had practised or at least attempted to practise exclusive breast-feeding and 93% of these mothers saw a difference between the child who was exclusively breast-fed and the child who was not.

4.7 The health education given mothers at the time of delivery

A total of 233 (66.8%) of the mothers were given information by the service provider during delivery or soon' afterwards whilst 33.2% (111) were not given any such information at all. Further questioning of mothers on what they were told showed that 217 (97.3%) were given correct information whilst 2.7% (6) were given incomplete, false or misleading information. Table 4.23 illustrates the kind of information by the service provider. The false information consisted mainly of mistakes made on the duration for which babies were to be exclusively breast-fed.

Table 4.23

Information to respondent by assistance at delivery

Assistance	Information | False information	True information	' Total
Doctors	0	11	11
Midwives	1	124	125
Trained TBA's	5	72	77
Untrained TBA's	0 i	3	3
Total given info.	6	210	216

The proportions of mothers practising exclusive breast-fepding related to the provider of assistance are illustrated in Table 4.18.

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4.8 The knowledge, beliefs and teachings of care providers

The types of service provider interviewed included trained traditional birth attendants and both public service and private midwives.

The age range of the TBA's was 50-74 years with a mean age of 58.3 years. The number of deliveries they had done each ranged from 2 to 50 with a mean of 14.4 in the last six months and an average of 2.9 each in the last month with a range of 0 to 8 deliveries.

All ten of them had been through TBA training at least once and at most three times with an average of 2.3 times. All had attended the 1992 training with two having attended that one alone. The ten TBA's all put babies to the breast to start breast-feeding immediately after delivery of the baby either if the mother was bleeding or to help expel the placenta. When there were no complications, the time interval varied from 'immediately' to 'whenever the baby was ready' or 'when the baby did not reject it'.

Irrespective of whether mothers were bleeding or not, 10% of the TBA's (1) started breast-feeding immediately after delivery of the baby whilst four of them, constituting 40Vo initiated breast-milk immediately or in less than 12 hours unconditionally. A total number of 4 (40%) had a time limit of 24 hours within which breast-feeding was started

and thought 2 required that the baby would not 'reject' the breast. Another two started breast-feeding at once if bleeding, otherwise whenever the baby was ready.

Although all the TBA's believed that the practice was god, 3 out of the 10 (30%) did not think all their clients were convinced. These were the same two who did not find the explanation health workers had given as the reason to practise breast-feeding as true. These two had been told that there was 'water in one breast and food in the other', a story which they themselves were not convinced about.

As to if the mothers were adhering to the practice of exclusive breast-feeding 2 (20%) out of the 10 were not sure if mothers adhered whilst one felt definitely that they were not doing so. The other 7 believed mothers did adhere but only 5 of them (50%) though they could verify that mothers were doing so. Even then, the verification could only be between two weeks and two months after delivery. One TBA however said the members of the community were afraid of her so did as she said whilst another said he actually saw them giving water and food supplements to their babies.

CHAPTER FIVE

5.0. DISCUSSION AND CONCLUSIONS

5.1 Demographic data

The distribution of the respondents by sub-districts reflects the population distribution in the district. The most heavily populated sub-districts were the Nsawam and Aburi Sub-districts and most of the respondents were obtained from those areas. The result was that the study population was biased towards urban rather than rural areas.

The population distributions by age for mothers and infants were as expected for a population pyramid of a developing country with the mean age group 25-29 years. The parity also illustrated the fertility patterns that exist with 71.8% of respondents having 3 or fewer children. In a similar study in rural Upper East in Ghana, the mean age of those interviewed was 27 years and the mean parity was 3 (Armar-Klemesu M., et al., 1992)

5.2 Health care providers who assist mother^ during delivery

The types of care providers who assist mothers during the antenatal and delivery periods in the Akwapim South District include doctors, midwives (both in public and private practice), trained and untrained traditional birth attendants, relatives, herbalists and

spiritual church leaders. There are also the group of individual^ who have their babies with no help at all. The supervised delivery coverage in the study was 79.9% of the deliveries^, which is much higher than the 40% quoted for the district in its 1997 annual report. This was most likely due to the bias resulting from a large proportion of the respondents being from the urban areas and the absence of sections of the fanning community during the data collection periods. Although TBA's account for 50% the supervised delivery coverage of district,, they only accounted for 28.2% of the deliveries in the study whilst the orthodox care providers assisted 48.7%. The midwives on their own assisted 44.2% which also demonstrated a bias.

5.3 Care provider knowledge, belief and practice

The midwives were all found from the care provider interviews to be adequate in their knowledge of and beliefs in the practice of exclusive breast-feeding. However from the questionnaire administered to the mothers there were some who may not have given all the necessary information or instituted the optimum practices. It was found however that only 2.7% -of mothers were given false information by the care providers one by a midwife and five by TBA's. The most significant of this was the information about the time limit for exclusive breast-feeding being 4 rather than six months.

The TB *A'i* however had a wide variety of knowledge and understanding of the initiation and practice of exclusive breast-feeding. The most prominent was that they all accepted that early or immediate initiation helped to control maternal bleeding during delivery. They otherwise still had their old ideas of wheA breast-feeding should start. They also

had not convinced their clients of the need to practise exclusive breast-feeding as in some cases, they had serious doubts of the explanations given them by MOH staff who trained them. ;

5.4 Practices of health care providers which affect breast-feeding practice

Only 32.4% of the respondents had care providers put babies to the breast within an hour of the birth of the child. A total of 64.2% put the child to the breast within 12 hours of brith. The rather low level of the practice of initiating suckling within an hour of birth is of note as it is a practice necessary to ensure the baby receives colostrum, bonding occurs between the mother and her child and also to ensure that she breast-feeds successfully (Savage King, 1992).

5.5 Mother knowledge, beliefs and practices

More mothers (78.8% of those who gave opinions) thought that infants did better with exclusive breast-feeding. This figure is higher than the 49.8% who actually breast-fed their infants exclusively, giving the impression that there must have been factors which stopped them from doing so even though they believed in it.

Generally speaking, the most of the infants' grandmothers had opinions on the breast-feeding practices of the mothers, which could possibly influence the mothers' decisions to delay water, and supplementation till after the infant was six months old. The study

showed that 63 1% of the 73.9% of maternal grandmothers who expressed and opinion thought the infants should be given water or supplementary feeds before they were six months old. The paternal grandmothers were less likely to give an opinion and 68.0% of the 53.1% who expressed an opinion thought that the infants needed water and/or supplements before age six months. Also of note was the 60.5% of husbands who expressed an opinion, 51.1% of which did not support exclusive breast-feeding. This illustrates the pressure that some of the mothers must go through if they are to maintain the practice of exclusive breast-feeding.

5.6 Influences of variables on breast-feeding practices

Both the mother's age and education levels influence the time and duration of breast-feeding (Igbedioh et al., 1996). The highest prevalence of exclusive breast-feeding found was the 25-34 age group (48.3%). It was least in the 35+ age group where it was found more likely to breast-feed for a longer duration (Amine et al., 1989) a factor which would probably be influenced by previous breast-feeding experience. This study however occurred during a period when exclusive breast-feeding was not seriously advocated. Older mothers would possibly be found less likely to 'breast-feed exclusively' rather than just breast-feed.

In the study group, the highest level of the practice was found in the group that had post-secondary education (85.7%) followed by the middle school/JSS group. The lowest.

level in respondents had tertiary education (33.5%) and those whoj had not had any education at all had a prevalence of 39.8%. This illustrates the variation where early abandonment of breast-feeding is known to be associated with higher levels of education (Perez-Gil et al., 1991). It also verifies a previous study were it was found that children with no post-secondary education are least likely to breast-feed or do so for longer periods done in Vancouver (Williams et al., 1996). In Ilorin, Nigeria women in higher education were also found to breast-feed for shorter periods and wean children earlier than those in the illiterate low income group (Fagbule, 1992). This is demonstrated by the lower percentage of 33.5% for women with tertiary education as compared with illiterate women who had a prevalence of 39%. The Odds ratio however demonstrates that mothers who are illiterate are 1.3 times as likely to exclusively breast-feed as those who have had tertiary education.

The farmers constituted 28.2% of the study population, which was unlike the 40.1% from the Baseline Study done in November 1995 in the Akwapim South District. In the analysis, occupation is found to affect the prevalence of exclusive breast-feeding with the practice most common in the professional group were 70.0% were found to have practised exclusive breast-feeding. Farmers were least likely to engage in the practice as they had a prevalence rate of 33.7%, and the unemployed had a rate of 53.0%, similar to the traders (52.J!%). The low farmer prevalence is probably related to the fact that some of them leave their children at home at an early age to go back to work on the farm. This we actually witnessed on two occasions when we were in the community. The unemployed are more likely to spend a lot more time with their children than those

engaged in occupations which separate mothers and infants early in the infants life.

The mother's family also had an effect on the possibility of her exclusively breast-feeding her infant for the first six months of the child's life.

There were different reasons attributing the practices of the trained TBA's on the subject of why they put babies to mother's breast at the time they did. The fact that they believe the action helped with the management of the placenta and for the control of bleeding was the main contributing factor to starting on time. The child's 'rejecting' breast-milk especially because the colostrum is thought to be bitter was another factor contributing to delay when it occurred. In all cases, once the baby did not 'reject' the breast, initiation of breast-feeding was not delayed.

The time for which mothers are expected to exclusively breast-feed varied as two of the TBA's were still under the impression that the time limit was 4 rather than 6 months until two months ago. This is likely to be a significant occurrence in the district. Two male TBA's had a problem with the explanation that they received that 'there is water in one breast and food in the other'. As they found this hard to believe this, they found it quite difficult to convince mothers of this! One actually said he felt a little 'foolish' when he sajd it to his patients.

/

All the TBA's were convinced that the practice of exclusive breast-feeding is beneficial to both mothers and their infants. Some initially accepted this teaching because it came from medical personnel but have seen the benefits since their clients started practising.

They believe it stojs infants from getting ill and makes them stronger. (However, the TBA's complained that not all the mothers were convinced and sometimes it really took a lot of talking on their part to get mothers to believe them. They also believed that it would still take mdre to convince mothers especially those who say they and their forefathers all drank water before they were six months old and still lived long.

The ages of the midwives ranged from 27 to 64 with an average of 37 years. They had all been through training in 'Lactation Management' with that of the private midwives having been organised by the GRMA. All the midwives in who were interviewed were very well informed about the subject of exclusive breast-feeding. They all knew that it implied that infants were to be fed on breast-milk only and no other foods or fluids apart form those that were medically indicated. There was still some delay in initiating breast-feeding in some cases including those that had to undergo caesarian sections or were too ill.

Two of the four private midwives in the district were interviewed using the guide. One of the other two during the familiarisation tour of the visit admitted that she had not been through any such training but did have some idea of what 'exclusive breast-feeding was about.

Statistics from the study demonstrate that in supervised deliveries in the Akwapim South District, and considering the care provider influence only, mothers who received assistance from trained medical personnel were three times as likely to practice exclusive breast-feeding as those who received assistance from trained TBA's.

5.7 Estimate of the present level of the practice of exclusive breast-feeding

The estimate of the present level of the practice of exclusive breast-feeding in the Akwapim South district from the study was 49.8%. This can be compared with a study carried out by the Department of Food and Nutrition of the University of Ghana, Legon in Accra 1998 (unpublished) where the prevalence was found to be 52%.

CHAPTER SIX

RECOMMENDATIONS

There is a need for an intervention 10 improve me levei of the practice of exclusive breast-feeding as a cost-effective means, of reducing the mortality and morbidity from diarrhoeal disease in the Akwapim South District.

The Policy makers

The Ministry of Health needs to continue to train and update the TBA's in the country. Although there are different opinions of the role they play and the need to train more midwives and send them to live in the community, the TBA's presently perform about 50% of the supervised deliveries in the district. They should be equipped with the required knowledge to enable them perform as well as the midwives in the district did.

The Akwapim South District Health Administration

There is a real need for the district to organise health education on exclusive breast-feeding not only for the mothers but also their husbands and the grandmothers of the infants. There is still not complete understanding or acceptance of exclusive breast-feeding.

The midwives in the district need to supervise the TBA's more rigorously than they are doing now. The supervisory visits they make should be used to refresh their minds and also as a channel for the TBA's to voice their problems including any misunderstandings they may have on the topic. As a matter of urgency, the TBA's should be made to understand that the time period is six and not four months. The information on the 'Ten steps for successful breast-feeding' document must be disseminated to TBA's and not only MOH staff.

- The DHMT should therefore draw up a program to retrain the TBA's to address their problems of wrong knowledge, attitudes and practices.
- MCH staff should be fully involved in the program to ensure that their supervisory and monitory activities are effective
- The District Assembly and other institutions who are involved in development activities in the district should be involved in the activities to ensure thorough information dissemination to all community members.
- The untrained birth attendants should be included in the education campaigns as from the study, they had very little or no knowledge
- Health education at the antenatal clinics must be intensified such that even the mothers Who attend limited number of clinics will be well informed. The antenatal coverage of the district form the study was such that 92.9% of mothers had attended clinic at least once. Annual reports of 1996 and 1997 quoted 113% and 117% respectively as the antenatal care coverage making the clinics an ideal place to educate expectant mothers.

REFERENCES

Ahiadeke C., (1996). 'Components of infant and child mortality in West Africa. A study of health care practices, breast-feeding behaviour and its interaction with diarrhoea in Ghana and Nigeria'. Doctoral dissertation, Cornell University (2), XIV,240 p

Akram D.S., Agboatwalla M., Shamshad S., (1997). 'Effect of intervention on , promotion of exclusive breast-feeding'. Journal of Pakistani Medical Association Feb.;47(2) :46-48

Amine E.K., **al-Awadi** F., **Rabie** M., (1989). 'Infant feeding patterns and weaning in . Kuwait'**J** R Soc Health, **109 (5) : 178-80**

Armar-Klemesu M., et al., (1992). 'Feeding practices and nutritional status of breast-fed infants in rural Upper East, Ghana.' Bulletin of NMIMR **5 (2): 36-53**

Anonymous (1996) Staywell Foundation Breast-feeding News. Aug;(l):[l] p.

Baseline Survey Report, Ghana 1992. Breast-feeding practices, support and status.

Beeken S., Waterston T. (1992). 'Health service support of Breast-feeding—are we practising what we preach?' British Med. **J.** Aug. **1 ;305(6848) :285-287**

Commey, J.O.O., (1990). 'Nutrition and child development' Ghana Med. **J. 24 (1) 37-42**

Ghana Demographic and Health Survey, (1988). Ghana Statistical Services.

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

Ghana Demographic and Health Survey, (1995) Ghana Statistical Services.

DeRoseL.F. (1995). 'Compatibility of work and breast-feeding in Ghana' Unpublished Presentation at the Annual meeting of the Population Association of America, San Francisco, California, April 6-8, [54] **p.**

Fagbu le D.O. and Olaosebikan A., (1992) 'Weaning practices in florin community, Nigeria'. West Afr. J. Med. 11(2): 92-9

Feachem R.G., Koblinsky M.A., (1984). 'Interventions for the control of diarrhoeal diseases among young children: Promotions of personal and domestic hygiene'. Bulletin of the World Health Organisation **62: 467-476.**

Grant, James P., (1983). 'A Child Survival and Development Revolution'. Assignment. Child. 61/62,21-31, New York,

Gomez, V., (1998). Personal communication

Huffman S.L., Combest C., (1990). 'Role of Breast-feeding in prevention and treatment of diarrhoea'. Journal of Diarrhoeal Disease Research Sep.,**8(3) :68-81**

IBFAN, (1990). 'Protecting infant health: a health worker's guide to the International code of marketing of breast-milk substitutes'. IBFAN, Penang, Malaysia

Igbedioh S.O., Ogbeni A.O., Adole G.M., (1996). 'Infant weaning practices of some Tiv women resident in Makurdi, Nigeria'. Nutr Health **1 1 (1) 13-28**

Khan, Akhtar Hameed., (1997). 'The sanitation gap: Development's deadly menace'. The Progress of Nations. UNICEF **1997.** New York

Lipsky S., Stephenson P.A.,Koepsell T.D.,Gloyd S.S., Lopez J.L.,Bain, C.E. (1994). 'Breast-feeding and weaning practices in rural Mexico'. Nutr Health, 9:255-63

Ministry of Health. Republic of Ghana. Aijmual Report, Akwapim South District, **1997.** ′Nsawam

Ministry of Health, Republic of Ghana. Nutrition Unit. Nutrition Facts for Ghanaian families. Accra. 1995

Ministry of Health, Republic of Ghana. Nutrition of Infants and Young Children in

phana, 1993

Ministry of Health. Republic of Ghana. Plan of Action on Food and Nutrition, Government of Ghana, Accra, 1997

Murray C.L.J., Lopez A.D. (Eds) (1996). 'The Global Burden of Disease. : A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020'. Joint WHO, World Bank, Harvard School of Public health publication. Boston, Harvard University Press.

Perez-Gil Romo S.E., Rueda Arroniz F., Ysunza Ogazon A., Andrade Contreras M.D. (1991). 'Main socio-cultural aspects related to breast-feeding in Malinalco, Mexico'Arch Latinoam Nutr 41 (2): 182-96.

Popkin B.M., Adair L., Akin J.S., Black R., Briscoe J. Flieger W., (1990). 'Breast-feeding and diarrhoea morbidity'. Journal of Paediatrics Dec.; 86(6): 874-882.

Roemer M.I., (1993). 'Health Programs for Certain Populations'in National Health Systems of the World, Vol II, NewYork Oxford University Press. Pp 233-65

Sagoe-Moses R., Personal communication

Savage King F., (1995). 'Helping Mothers to Breast-feed' (revised). African Medical and Research foundation. Nairobi

Suharyono P.M., 'Breast-feeding practices in Indonesia'. Chung Hua Min Kuo Hsiao rh Ko I Hsuea Hui Tsa Chuh 1997: 38:338-44

Victora C.G. **et al.,** (1987). 'Evidence for protection by breast-feeding against infant deaths from infectious disease in Brazil'. Lancet 8 ;2(8554) :319-322

Williams P.L., Innis S.M., Vogel A.M. (195^6). 'Breast-feeding and weaning practices in Vancouver' Can J. Public Health; 8/7 (4) :231-6

WHO. |(1981) 'Contemporary Patterns of Breast-feeding'. Report on the WHO collaborative study on breast-feeding. Geneva: World Health Organisation, 1981

WHO. (1991) 'Indicators for assessing breast-feeding practices'. Geneva: World Health Organisation, [unpublished document, WHO/CDD/SER 91.14, WHO, Geneva

WHO/UNICEF. (1989) 'Promoting, protecting and supporting breast-feeding: the special role of the maternity services'. A WHO/UNICEF joint statement. WHO, Geneva

UNICEF. (1997). 'Breastfeeding Practices, Support and Status'. Baseline Survey Report - Ghana, July **1997** Accra.

USAID. (1990). 'Breast-feeding: A report on A.I.D. Programs'. USAID, Washington.

ANNEXES:

Annexe 1

0UESTTONNNAIRE FOR THE COMPARATIVE STUDY ON EXCLUSIVE BREAST-FF.FDTNG

A. IDENTIFICATION

1. Name of sub-district_____ 2. Name of community_____
3. Mother's ID number ### 4. Date of interview <dd/mm/yy>
5. Interviewer code number ##

B. BACKGROUND INFORMATION

Mothers characteristics

1. What is your name?_____
2. How old are you? (In completed years)##
3. How many children have you ever borne?##
4. How many children are alive?##
5. How old is your last child (completed months)?##

Mother's socio-economic status:

6. What is your main occupation?
   a. Farmer [] b. Trader/artisan/food processor [] c. Professional [ ]
   d. Unemployed/ homemakers [ ] e. Other [ ] specify_____
7. Have you ever been to school? 1. Yes [ ] 2. No [ ]
8. If yes, what was the highest level of school you attended?
   a.Primary [ ] b. Middle/JSS [ ] c. Second cycle [ ] d. Post-secondary[ ] e.Tertiary [ ]

C. ANTENATAL CARE AND DELIVERY HISTORY

Source of antenatal care:

9. Did you attend clinic for pregnant women whilst you were pregnant with this child?
   Yes [ ] No [ ]
10. If yes, where did you attend clinic?
    a. Government/ Mission hospital [ ] b. Private hospital [ ] c. Private midwife [ ]
    d. Traditional birth attendant outfit [ ] e. Other [ ] Specify_____

11. How malny visits did you make? ##

Delivery details:

12. Where did you deliver this baby?
    a. At home [ ] b . In a government/ mission health institution [ ]
    c. At a traditional birth attendant outfit [ ] d. At a private health institution [ ]
    e. Other [ ] Specify_____ _____ __
13. Who assisted you at delivery?

a. Doctor [ ] b. Midwife [] c. Trained traditional birth attendant [ ]
d. Untrained birth attendant [ ] e. Relative [ ] f. No assistance
g. Other [ ] Specify _____

D. BREAST-FEEDING PRACTICES

Time interval between delivery and first breast-feed:

14. How long after'delivery did you start breast-feeding?
    a. Less than one hour [ ] b. Less than twelve hours[ ]
    c. Less than one day [ ] d. More than one day [ ]

Breast-feeding Practice of Mother:

15. How many months old was your baby when you started giving it water to drink regularly? ##
16. How many months old was your baby when you started giving her koko or any other supplementary feeds? ## i

E. KNOWLEDGE OF EXCLUSIVE BREAST-FEEDING

Mother's knowledge

17. What do you know about giving babies only breast-milk, no water, no koko and nothing else till the baby is six months old?
    a. Knows the above. [ ]
    b. Has no knowledge of above. [ ]

View of family on exclusive breast-feeding

18. Do you think your baby should be given water or supplementary feeds before six months? Yes [ ] No [ ] No comment [ ]
19. Did your mother think your baby should be given water or supplementary feeds before six months? Yes [ ] No [ ] No comment [ ]
20. Did your mother-in-law think your baby should be given water or supplementary feeds before six months? Yes [ ] No [ ] No comment [ ]
21. Did your husband think your baby should havejbeen given water or supplementary feeds before six months? Yes [ ] No [ ] No comment [ ]

Information on the subject given by the service provider at time and soon after delivery

22. Did the helper during the delivery and soon after tell you anything about giving your | baby only breast milk? Yes [ ] No [ ] j
23 ıIf 'yes', what exactly did she say? (listen to the ideas that the respondent has about breast-feeding firom what the service provider told her)_____ ;_____
    True [ ] False [ ]

F. BELIEFS ABOUT EXCLUSIVE BREAST-FEEDING

24. Do you believe that infants do better on only breast milk without water or supplementary foods up to the age of six months? Yes; [ ] No [ ]

2i- Was your previous child fed on only breast milk up to the age of six months?
Yes [ ] No [ ]

26. If 'no' and this child was, do you see a difference? Yes [ ] No [ ]

Thank the mother for her time and responses and file the questionnaire, please.

INTERVIEW GUIDES FOR TBA'S AND MID WIVES

1. Type of care provider_____
2. What is your name?
3. How old are you?

Questions 4,5,6&7 are for traditional birth attendants only

4. How many deliveries have you assisted since the beginning of the year?
5. How many did you assist last month?
6. Have you been through formal trainingin modem methods of delivery?
7. If "yes" how many times and when did you do so?

Question 8 is for midwives only

8. Have you attended any formal training sessions on 'lactation management'?

Question 9-18 for all care providers

9. How soon after deliveries do you let mothers put the baby to the breast?
10. What are your reasons for this?
11. What do you know/were you told about giving babies only breast-milk, no water and no food until the baby is six months old?
12. What do you tell the mothers about this?
13. Are you convinced that this practice is good?
14. What are your reasons for this?
15. What are some of the differences you have observed between the children bom before

and after the practic^ was introduced?

16. Do you think the mothers are convinced the practice is good for the infants?

17. Do the mothers actullly practice this for six months?

■!

18. How do you verify this?

Annexe 3

POPULATION BREAKDOWN BY SUB-DISTKICT (Ministry of health estimates)

NAME OF SUB-DISTRICT	TOTAL POPULATION	0- 11 MONTHS (4%)	W.I.F.A. (4%)	0-5years NID DATA	0-5years POPULATION DATA (20%)
NSAWAM	66,000	2,640	2,640		13,200
DEGO	7,000	280	280		1,400
POKROM	10,000	400	400		2,000
PAKRO	15,000	600	600		3,000
PANPANSO	10,000	400	400		2,000
ABURI	24,000	960	960		4,800
TOTAL	132,000	5,280	5,280	21,929	26,400

Annexe 4

MORBIDITY PATTERNS {Top diseases: hospital records, Akwapim South district).

DISEASE	% 1997 OPD Attendance
Malaria	47.2%
R.T.I.	8.5%
Accidents/ Bums	7.5%
iGastroenteritis/ diarrhoea	4.7%
Skin disease	4.5%
Pregnarfcy/ related complications ,	4.1%
Rheumatism/ j oint pain *1'*	4.0% .
Hypertension	2.8%
Gynae. Disorders	2.8%
Helminthiasis	2.5%
Anaemia	2.2%
Mental health	1.3%
Ear infections	1.3%
Eye infections	1.1%

Table ?>.

Annexe 5

MORTALITY PATTERNS

CHILDREN UNDER-FIVE	ADULTS
Prematurity	Malaria
Complication of malaria	Diarrhoea
Anaemia	Respiratory tract infections
Gastroenteritis	Hypertension
Respiratory tract infections	C.V.A.
Malnutrition	Tuberculosis
Meningitis	Meningitis
Others	Anaemia

Annexe 6

BREAST-FEEDING SURVEYS

SURVEY	YEAR	TOTAL EVER BREASTFED	EXCLUSIVELY BREASTFED	COMPLEMENTED FEEDING
GFS	1979/80	99.5%	-	-
GLSS	1987/88	98.0%	-	-
GDHS	1988	100%	1.9%	98.1%
GDHS	1993	99.8%	8%	92%
GDHS	1995		19%	81%

Annexe 7

Variables	Definition	Indicator
Demographic data: 1. Mother's age 2. Parity 3. Occupation 4. Level of education	Mother's age in completed years, Number of children borne/alive Main occupation of mother Highest level of school ever attended	Mother gives information requested
Child's characteristics	Child's age (months)	Mother gives age of child and verification is done with Road to Health chart where available
Ante-natal care before child was bom	Health care obtained during the pregnancy if any, place and number of times facility was visited	Mother gives information requested
Delivery care	Place of delivery and source of assistance during delivery	Mother gives information requested
Health worker breast-feeding practice instituted	Length of time between birth and initiation of breast-feeding	Mother gives information requested
Mother's breast-feeding practices till child was six months old	Age at which child was started on regular water/supplementary feed	Mother gives information requested
Mother's knowledge about exclusive breast-feeding	Has mother heard of and understood the practice of exclusive breast-feeding	Mother gives information requested
Views of mother and immediate family members on exclusive breast-feeding	Does family member think the child should be given water and supplementary feeds before age six months	Mother gives information requested
Information given by service provider during delivery	Was the required information given during delivery and was it correct information on the subject	Mother gives information requested and interviewer judges if it was all true
Impression of mother on the practice of exclusive breast-feeding	Does the mother see a difference between her children who are breast-fed exclusively and those who are not	Mother gives information requested

Annexe 8

TRAINED TRADITIONAL BIRTH ATTENDANTS RESPONSES TO INTERVIEW

Questions 2,3,4,5,6 and 7.

No	Sex	Age (years)	Deliveries 6/12	Deliveries last month	Any training?	When?
1	Male	74	15	4	Yes, 3 times	’92, ’94, *'96*
2	Male	57	30 ,	6	Yes, 3 times	'92,’94,'96 ,
3	Male	60	3 *I[1]*	1	Yes, once	'92 *t*
4	Female	58	*2*	0	Yes, once	'92
5	Female	62	*7*	1	Yes, 2 times	'92, '96
6	Female	53	*9*	2	Yes, 3 times	'92, '94, '96
7	Female	57	*9*	2	Yes, 2 times	'92, '96
8	Male	50	12	4	Yes, 2 times	'92, ’96
9	Female	60	7	1	Yes, 3 times	'92, '94, '96
10	Male	52	50	8	Yes, 3 times	'92, '94, '96

Questions 9,13,16.17,18

No		Time interval	Is practice good?	Are mothers convinced?	Do mothers practise?	Can you verify?
1	Male	At once if bleeding or in a day if baby does not reject it	Yes	Yes	Yes	Visits them for two months to make sure
2	Male	At once if bleeding or <3hours if not	Yes	Yes	Yes	Visits them after two weeks to make sure
3	Male	At once to help the placenta out	Yes	No	Not adhering	He sees them giving water and koko
4	Female	At once if bleeding or <24hours if not	Yes	Yes	Yes	No
5	Female	At once if bleeding or when the baby is ready	Yes	Yes	Yes	Yes. They are afraid of her
6	Female	At once if bleeding or <12 hours	Yes	Yes	Yes	No
7	Female	At once if bleeding or <24 hours	Yes	Some of them	Yes	Visits them for a while to make sure
8	Male	At once if bleeding or whenever baby is ready	Yes	No	Cannot tell	Does not think so
9	Female	At once if bleeding or within a day if baby does not reject it	Yes	Not sure	Does not know	No
10	Male	Immediately	Yes	Yes	Yes	Visits them for a while to make sure

Annexe 9

Calculation of Odds ratio

The Odds Ratioi = $\frac{114 \times 63}{51 \times 14} = 10.06$

The Odds Ratio2 - $\frac{40 \times 63}{55 \times 14} = 3i.27$

Annexe 10

TEN STEPS TO SUCCESSFUL BREASTFEEDING

I

To become a 'Baby Friendly hospital, every facility providing maternity services and care for new-born infants should:

1. Have a written Breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy
3. Inform all pregnant women on the benefits and management of Breastfeeding
4. Help mothers to initiate breast-feeding within an hour of birth
5. Show mothers how to breast-feed and how to maintain lactation even if they should be separated from their infants
6. Give new-boms no food or drink other than breast-milk unless medically indicated
7. Practise rooming-in - allow mothers and infants to remain together - 24 hours a day.
8. Encourage breast-feeding on demand
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breast-feeding infants
10. Foster the establishment of breast-feeding support groups and refer mothers to them on discharge from hospital or clinic

BFHI News, December 1992