KNOWLEDGE OF AND ATTITUDE TO INFANT FEEDING IN GLASGOW AND BAHRAIN

BY

DR. FAISAL ABDUL LATIF ALNASIR

M.B.,B.ch., F.P.R.(A.U.B.), M.R.C.GP.(U.K.),

M.I.C.GP.(DUBLIN)

THESIS SUBMITTED

TO THE UNIVERSITY OF GLASGOW

FOR THE DEGREE OF Ph.D.

October 1987

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

IN THE NAME OF GOD, MOST GRACIOUS MOST MERCIFUL

CONTENTS

LIST OF FIGURES

Discussion:

LIST OF TABLES

LIST OF APPENDICES

ACKNOWLEDGEMENTS

It has been a great pleasure for me to have the opportunity of spending over three years in the Department of General Practice, University of Glasgow, studying for the degree of Ph.D.

I would like to express my sincere thanks and deep gratitude to Professor J.H. Barber for allowing me to study General practice as my degree and for his continuous support with this work. I would also like to thank him for his guidance and kindness throughout the period of this work, which made my study of this project a very pleasent and memorable one.

My thanks go to Dr. J. Mackay, Dr. S. Murray, Dr. S. Wood and Dr. F. Sullivan for their help and advice.

I would like to give my thanks to Mr. Harper Gilmore for his valuable statistical advice.

For their financial and moral support I should like to offer my sincere gratitude to the Arabian Gulf University in Bahrain.

I am also extremely thankful to all friends, medical personnel and all who have assisted me in the Bahrain part of the study.

For their long suffering support and patience my gratitude goes to my wife and my son Khalid.

I am in debt to God who has given me the health, strength and patience to perform this study.

Summary:

In the past few decades popular attitudes to infant feeding, in Europe and in the developing countries have been continually changing. More women in the Western countries are now choosing to nurse their children naturally but in the developing countries (for instance Bahrain), formerly a bastion of the traditional method, an increasing number, influenced by Western ideas and by the propaganda of the baby-food manufacturers, are turning to artificial feeding. Natural feeding, however, is still used more widely in some of the developing countries than the industrialized countries. In both areas - pleasant to relate - an increasing number of mothers do have a desire to breast-feed but few manage to maintain it for a prolonged period.

In the European countries young women often have less information about breast-feeding simply because they are less exposed to it, but on the other hand they are bombarded with advertisements and live in an environment which develop positive attitudes towards artificial feeding. In contrast, while the young female of the developing countries is more familiar with breast-feeding and with more positive attitudes towards it, the concept of artificial feeding has been misunderstood. More of them view bottle-feeding as a modern method and believe that ready-made commercially-available baby foods are a superior method of infant feeding promising a healthier and better developed child.

To examine such attitudes and hidden knowledge this study was carried out in Bahrain and in Glasgow. It is a progressive cross-cultural study in which a group of schoolgirls was interviewed in Bahrain while constructed questionnaires were sent to their Glasgow counterparts. Another group of women in their first pregnancy were seen at the first antenatal visit; contact was kept up during the pregnancy and through the post-natal period. An attempt was made to find out their original choice and attitudes towards infant feeding and their background of knowledge. The pregnant women were sent postal questionnaires during late pregnancy and at 3 and 6 months post-delivery. These questionnaires were designed to find out whether the patients' attitude had changed over the passage of time and to discover the factors that could have influenced the change, if any. Among the other aims were to discover the source of support and encouragement that these women anticipated they would obtain early in pregnancy and from whom and from where they did obtain such support during pregnancy and post-delivery. Areas related to their knowledge, such as sources of information, were also investigated. Other factors related to the choice of infant feeding were investigated as well.

The study has shown that although almost all of the Bahraini schoolgirls and women during pregnancy had positive attitudes towards breast-feeding, not all who wanted to breast-feed

exclusively had done so after child-birth. On the other hand, a smaller number of the Glaswegian population had planned, during pregnancy, to breast-feed. But among the women who showed their wish during pregnancy to breast-feed exclusively, a higher percentage of the Glaswegian women than in Bahrain had kept to their decision after delivery. However, the number of women who continued breast-feeding until 3 and 6 months was much higher in Bahrain than in Glasgow.

Their own investigation and parents were the major sources from which the Bahraini population obtained information about infant feeding and child-rearing while the clinic was the one mentioned by the majority of the Glaswegian women. However, for both populations, it was disappointing to find that although a considerable number of patients, in early pregnancy, anticipated that such information would be given by the doctor, very few patients had in fact obtained such information, even at a late stage of pregnancy, from their doctor.

Despite education and advice from health professionals a large number of women from both countries introduced solid feeding early.

This study reinforces the need for more and continuous educational programmes designed to encourage and promote breast-feeding. Such education should be delivered not only to pregnant women but also to young girls. There is also a need for more support and understanding for the women if the habit of breast-feeding is to become more widespread. Hospital procedures and practices and professional attitudes should all be adjusted so that a favourable atmosphere towards breast-feeding is developed.

Chapter I

Historical review on the State of Bahrain:

Bahrain is one of the Arab Gulf States. It is an island with a total area of 661 square kilometers [Figure-1] and consists of an archipelago of about 33 islands, situated 24 kilometers from the eastern province of Saudi Arabia. The island has recently been linked to the land of Saudi Arabia by a modern causeway (Bahrain Book, Ministry of Information).

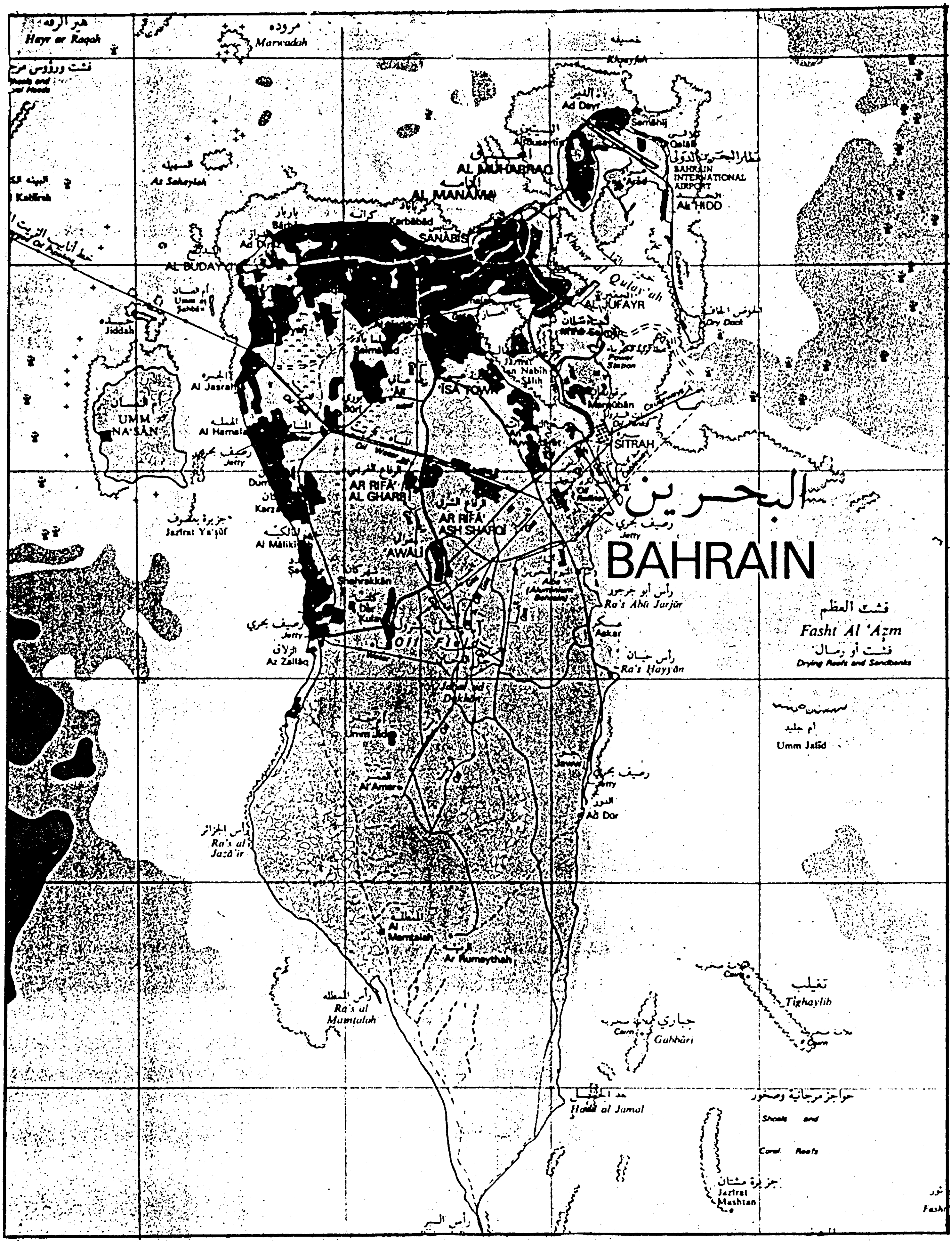
According to the latest census (1985) the total population of Bahrain is 417,210 of whom about two thirds are Bahraini; the rest are expatriates from various countries (Department of Statistics, Bahrain).
The word Bahrain literally means 'Two Seas' and refers to the natural springs of fresh water to be found in the area.

In its book 'This is Bahrain' the Ministry of Information explored the ancient history of Bahrain and stated "Bahrain has had a succession of rulers through-out its history. The Greeks, Sassanians, Portuguese, Karmathiams and Omanis have all ruled the island at one time or another.
Bahrain has a deep-rooted civilization with evidence of its operation as an international centre of trade from the the days of antiquity. All the great civilizations of this area have influenced the land of Bahrain, from AlSind to that of Mesopotamia, interacting at various stages of Bahrain's cultural evolution."
Rich in vegetation, it was once known as 'The island of a million palm trees'.

Khuri, F. (1980) mentioned in his book about Bahrain that most of the population inhabit the northern half of the country. The reason is the lack of fresh water springs in the central and southern parts of the island which have historically discouraged human settlement.
The central part has numerous noticeable 'Tumuli'-ancient burials- that link Bahrain to the the Babylonian tradition.
Bahrain today is a metropolitan centre embracing the needs of the twentieth century while retaining links with its traditional past.

Rapid social changes were brought about by the transformation of an impoverished economy based on pearl diving, palm cultivation and fishing into a complex of modern economic institutions based on oil production and foreign trade (Khuri, 1980).

The government of Bahrain provides comprehensive care to all its residents through an integrated system of primary, secondary and tertiary health care.



البحرين
BAHRAIN
Hayr ar Raqah
Marwadah
Al Sahaylah
Khusayfah
Ad Dayr
Samahij
Qalali
BAHRAIN INTERNATIONAL AIRPORT
AL MUHARRAQ
AL MANAMA
Al Busaytin
Al HIDD
Karbabad
SANABIS
AL BUDAYYI
Jiddah
Umm as Sabban
Al Jasrah
Al Hamala
Jetty
UMM NA'SAN
Jazirat Ya'sūf
Al Malikiyah
Karzakan
Shahrakkan
Dar Kulayb
Az Zallaq
AR RIFA' AL GHARBI
AR RIFA' ASH SHARQI
AWALI
'ISA TOWN
Nabih Salih
Power Station
Ma'ameer
Oil Wells
SITRAH
AL JUFAYR
Khawr al Qulay'ah
Dry Dock
Askar
Ra's Abū Jarjūr
Ra's Hayyān
Fasht Al 'Azm
Drying Reefs and Sandbanks
Umm Jalīd
Jabal ad Dukhan
Oil Field
Umm Jidr
Al 'Amarah
Jaww
Ad Dōr
Ra's al Jazā'ir
Al Mamtalah
Ar Rumaythah
Ra's al Mumtulah
Tighaylib
Cairn
Gubbārī
Hadd al Jamal
Shoals and Coral Reefs
Jazīrat Mashtan

FIGURE 1

The Minister of Health in Bahrain, in his editorial letter to the 1985 Ministry of Health Annual report, said "The emphasis of the government of Bahrain is on accessibility and continuity of health care. Thus there is a continuous opening of new health centres to take health care closer to the residents. There are 18 easily-accessible health centres scattered in various catchment areas around Bahrain, each serving a population of 10-30,000 people. When the six-year programme is completed 23 health centres will have been provided to cater for all villages and towns" [Figure-2].

A health education programme has been developed for the public, promoting good health, a healthy environment and the prevention of diseases. Health educators were transferred to work in the health centres under central supervision and guidance (Ministry of Health 1985 Annual Report).

Historical review on Infant feeding practices in Bahrain:

Since there has been little work done in this field, difficulties were faced in obtaining information about feeding practices and some problems could not be defined such as the date of introduction of artificial feeding in Bahrain and when mothers began to use it as a feeding method for their babies.

Information was also lacking about the historical background relating to solid feeding, such as what type and when it was given to
the babies. In these circumstances, it was necessary to depend on the older generation in order to obtain this information. Some could go back to fifty years ago when artificial foods were introduced into Bahrain at a time when most believed that that milk was ideal for the baby and it could satisfy all of the baby's needs. However, the majority preferred breast-feeding partly because of its convenience and its availability and partly because of the cost of powder milk.

Because it is a strongly Muslim country all people at least in the older generation were bound to their religion and obeyed: The Holy Kuran's testimony "The Mothers shall give suck to their offspring for whole two years" [Sura Albaqara, 233/II Holy Kuran]. Another passage in the Holy Kuran says, "We have enjoined on man kindness to his parents: In pain did his mother Bear him, and in pain Did she give him Birth. The carrying of the (Child) to his weaning is (A period of) Thirty months" (Sura Alahqaf, 15/xxxxvi, Holy Kuran).
And most mothers used to do so.

It is not long since such attitudes were a reality, because the majority of grandmothers in Bahrain can remember breast-feeding for almost two years.

STATE OF BAHRAIN

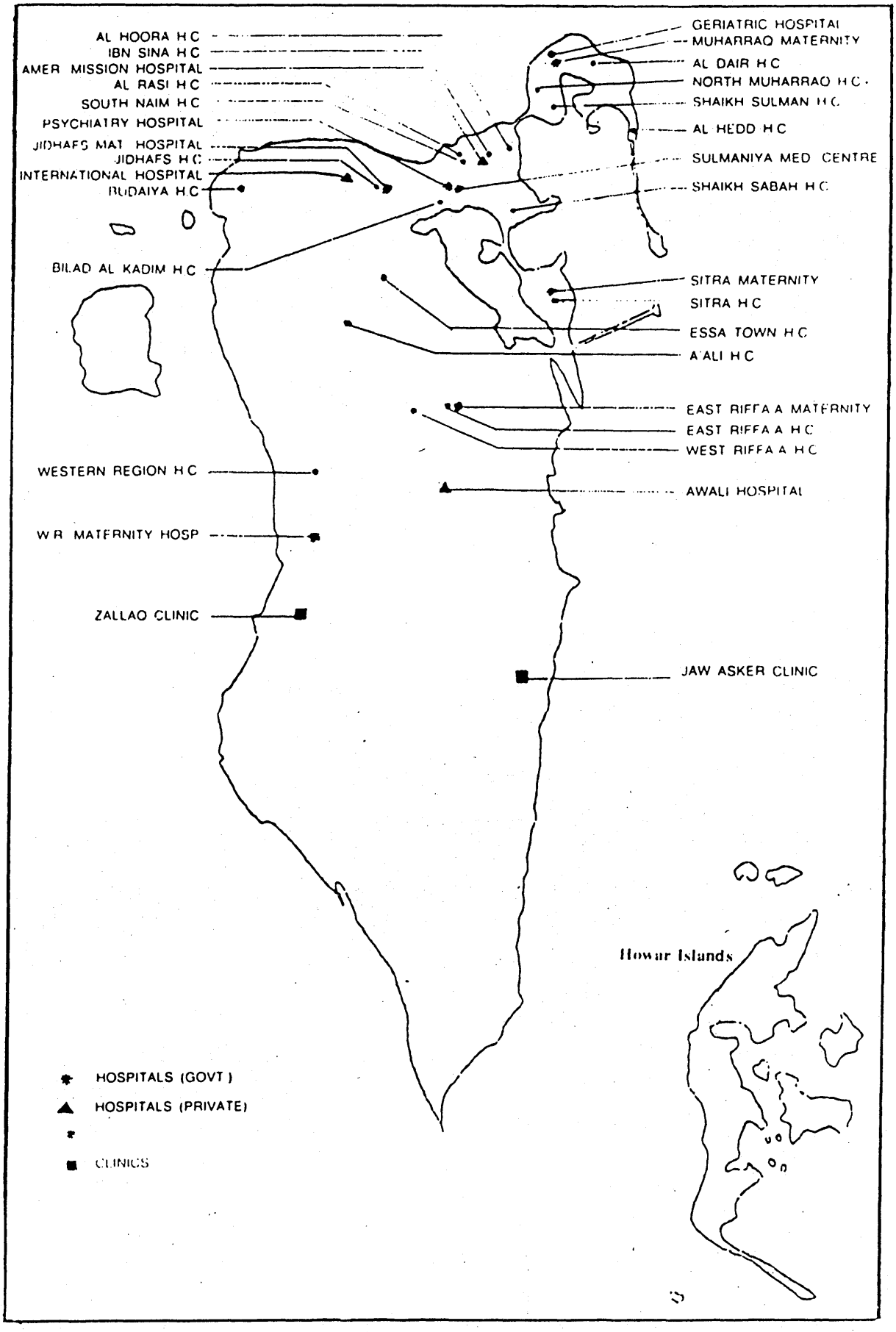


FIGURE 2

Breast-feeding used to be the only source of nutrition for new-born babies in the early months of life. It was also used as a method of contraception for a maximum of two years.

With modernization, the cultural influence of a large number of expatriates in Bahrain and of women sharing with men in the development of the country, changes have occured in the attitudes towards infant feeding.
The number of women, especially of the younger age groups, who offer bottle feeding to their babies has increasd (Alnasir, 1987). Artificial feeding used to be regarded as "Progressive" as it was often thought to reflect the income and status of the family.

Until recently advertisements for artificial feeds were common in magazines, on television, wall posters and even in health institutes such as hospitals and health centres. Now, owing to the world-wide return to breast-feeding, the Ministry of Health in Bahrain has banned these advertisements.

Antenatal services in Bahrain:
Most of the antenatal sessions in Bahrain are carried out in the Health Centres except for a few which are held in the regional hospitals to take care of the at-risk pregnant women and patients in the later stages of their pregnancy. Each antenatal clinic is run by a female doctor, a midwife, 2 nurses, one auxillary nurse and a clerk.

Women are usually referred to the antenatal clinic 6 to 10 weeks after their last menstrual period by their family physician once pregnancy had been confirmed.
After registration with the clerk the patient is seen by the nurse who takes the history, measures the vital signs and completes the antenatal card. Thereafter the patient is seen by the doctor.
Finally the midwife gives some useful advice and instruction to the woman about her pregnancy.

The health education nurse takes part in health and feeding advice, and holds several group sessions discussing various subjects with the pregnant women. After 34 weeks of gestation the women are referred to the regional hospital to be looked after by the consultant obstetrician and later to be delivered there.

Most families in Bahrain are still one large nuclear family. For example, most children tend to live with their parents till marriage, when a son or sons will continue to live with the wives in the family house, while the rest, despite staying in a different house, will maintain a strong contact with their parents, and hardly a day passes without their visiting the family house.

The majority of pregnant women, especially the primigravidas, are in a special position. They receive help and support from their mothers, mothers-in-law or any of the family members. Some pregnant women go and live in the family house once they are in the late stage of pregnancy and a mother would stay with any pregnant daughter or daughter in law who was not able to leave her house.

Again after the baby's birth the patient usually finds herself surrounded by people who are ready to help, and most women leave hospital to return to the family house where they rest and relax for up to four weeks. Support and help are provided by the family to the woman and her baby.

In Bahrain the percentage of early marriages was high in the old days and the average number of children per family was between 8 and 10. Both early marriage and a large family have strong connections with the Islamic religion. Recently this has changed as now only 14.5% of married girls are within the age range of 15-19 years, and the crude birth rate in Bahrain is 29.4/1000 population (Ministry of Health, 1985 Annual Report).

The figure for married women in the age group 20-29 is 66.7% and 80.9% for those who are 30 to 39 years old (Ministry of Health, 1985 Annual Report).
According to the 1985 census, 4% of the total population were girls within the age range of 15 to 19 years (Central Statistics Organisation, 1985).

Historical review of Glasgow city:

Glasgow is the biggest city in Scotland. It is an old city enriched with a remarkable historical background, dating back to the earliest medieval settlement. From history and commerce Glasgow has inherited a wealth of architecture and art.
Six of Scotland's twenty top tourist attractions are in Greater Glasgow, the most popular being the Burrell collection.

The rapid expansion and industrialization of Glasgow, with the Clyde river both dividing the city into North and South and being the link between the city and the rest of the world, encouraged the influx of a large number of impoverished Highland and Irish immigrants who brought with them a multitude of social and medical problems (Dow, 1984), such as severe overcrowding of houses and people in the central area of Greater Glasgow. During 1790 the population of Glasgow had increased by more than 50% from that of the previous decade (from 42,000 to 66,000 people).

The Greater Glasgow Health Board area is about 55,000 hectares with a population of just less than a million (968,801 people), constituting one-fifth of the total population of Scotland. About three-quarters of the population live in Glasgow city (Regisrar General,1985 Annual Report).

The Greater Glasgow Health Board area is formed of five local governments districts: Glasgow city, Clydebank, Bearsden and Milngavie, Strathkelvin and Eastwood [Figure-3].
Bearsden, Milngavie and Eastwood have a similar social 'mix' of population (mostly social class 1 and 2) and have the economic characteristics that go with low unemployment rate (GGHB, 1981), whereas, Glasgow city and Clydebank have a high unemployment rate and overcrowding. The populations are almost similar in all respects in both Glasgow city and Clydebank with the exception that in the former there is a higher number of elderly people, while Strathkelvin has the youngest population structure (GGHB, 1981).

In 1984 the Crude Birth rate of GGHB area was 12.9/1000 population and that of Glasgow city was 13/1000 population, and the largest number of illegitimate births in Glasgow was to mothers between 18 and 20 years of age (GGHB, 1984).


Clydebank
Bearsden & Milngavie
Strathkelvin
Glasgow City
Eastwood
63.0
65.7
LENNOXTOWN
MILTON OF CAMPSIE
65.6
DUNTOCHER
81.6
62.7
62.8
64.4
TORRANCE
TWECHAR
65.9
66.1
69.2
KIRKINTILLOCH
66.3
OLD KILPATRICK
80.6
81.4
81.3
CLYDEBANK
81.2
81.1
81.5
FAIFLEY
81.4
81.3
BEARSDEN
MILNGAVIE
62.6
WESTERTON
81.1
81.2
64.3
64.2
66.4
LENZIE
66.5
MOODIESBURN
69.0
67.4
64.1
CHRYSTON
69.9
33.6
STEPPS
CARTCOSH
69.8
THORNLIEBANK
46.7
GIFFNOCK
46.8
44.3
CLARKSTON
76.7
BUSBY
76.8
KIRKHILL
77.5
NEWTON MEARNS
77.6
EAGLESHAM
76.0
N
0
Km
5

FIGURE 3

Glasgow Royal Maternity Hospital (Rottenrow)

One of the most remarkable old institutions in the city of Glasgow is the Rottenrow Hospital which was built in 1834 at an estimated cost of £6890.
Over the past 150 years the hospital has had a leading role in the maternity services in Britain: Until 1964 it was the only maternity teaching hospital in Glasgow.

The name Rottenrow is related to one of the oldest roads in Glasgow, 'Rottenrow Road'. Dow (1984) is of the opinion that the word Rottenrow could have come from the Gaelic Rat-hat-an-rath, which means the road of the fort or stronghold, or from the French Route-en-roi, the road of the king.
Within a few years of its establishment the hospital became a training centre for medical students at the University of Glasgow.

Till 1866 the hospital was called the Lying-in Hospital, when the name was changed to Glasgow Maternity or Lying-in Hospital and Dispensary. In 1908 the Queen became the President of the hospital and in late 1914 the word 'Royal' was prefixed to the name, so called 'The Glasgow Royal Maternity and Women's Hospital, Rottenrow' (Dow, 1984).

The involvement in research carried out in the Hospital laboratories during this century has given Rottenrow its reputation and has attracted students from all over the world as well as from the United Kingdom and in 1923 the Medical Committee reported that hospital statistics - covering 30,000 cases over a 5 year period - would be useful to the Government's Departmental Committee on Puerperal Mortality.

"Once it had four incumbent Professors of Midwifery. Today there is only one although the depth and range of instruction is infinitely greater" as quoted by Dow D.A.(1984).

In 1948 the hospital was transformed from a voluntary hospital to a National Health Service unit. It continued to develop and there was a major upgrading of the hospital facilities both in 1960 and in 1963.
Part of the hospital was converted into the University Department of Obstetrics and Gynaecolgy soon after Professor M.C. Macnaughton was appointed to the Muirhead Chair in 1969.

Although the induction of labour and the Caesarean Section's rate was high (16.9% in 1981) in the Rottenrow Hospital, mothers were in a better general condition to cope with an operative delivery and recovered more quickly, and were given considerable support in

relation to the type of delivery they would have (Dow, 1984).

The Hospital has always placed great emphasis on education, reflected by the change of name of Mother-Craft Classes to Parent-Craft Classes during 1980, when fathers were encouraged to attend with their partners to adapt them to the new events and changed life that they would experience. Although the general attitude in the Parent-Craft Classes was to encourage breast-feeding the staff supported women who wished not to do so.

In 1984 the number of mothers confined in the Rottenrow Hospital was 4012, most coming from the East end of Glasgow while the rest came from the North, Southeast, West, Southwest and some from outwith Glasgow.
The Hospital was responsible for 31.4% of all births of the Greater Glasgow Health Board area, and 41.1% of all of the Glasgow city's deliveries (GGHB, Maternal and Child Health Statistics 1984).

In 1983, 13.3% of mothers who gave birth in the Rottenrow were about 19 years of age or less, 11.8% of mothers came from social class 1 and 2 and 7.8% belonged to social class 5 (GGHB ,1982).

Parent-craft Classes in the Rottenrow Hospital.

Most of the following information was collected from the Rottenrow Hospital during the period of sample collection.
The parent-craft classes jointly with physiotherapy relaxation classes are held regularly in the Rottenrow Hospital and in 6 community areas situated in the health centres in the catchment area.
There is a 5 week course of parent-craft sessions and an 8 week course of physiotherapy relaxation classes. Usually 10 pregnant women attend each class. In the health centres both classes are held once a week but with a greater frequency in the hospital. The physiotherapy classes begin at around 29 weeks of pregnancy and after 30 weeks for the parent-craft classes. Each parent-craft session lasts for 1 hour. In the first session there is a general discussion about what happens during pregnancy as well as about labour, minor disorders of pregnancy, bleeding during pregnancy, sexual intercourse and an opportunity is given for women to discuss any problems they might have. The second parent-craft class has an emphasis on infant feeding with a general attitude to encourage breast feeding: The women are told about the advantages of breast-feeding and were advised to give 'demand feeding'. In order to fulfil the needs of women who wish to bottle-feed, the midwives also discuss

various aspects of bottle-feeding and methods of bottle sterilisation. Attendance at parent-craft sessions is voluntary and there are no statistics to determine what proportion of patients do attend.

The mothers who attend the hospital antenatal classes are usually those who are motivated and better educated , the majority of whom are going to breast-feed.
During the first antenatal visit the woman's choice of infant feeding is explored: those who are uncertain should ideally attend parent-craft classes where they could be persuaded to choose breast-feeding. Women are asked to discuss with their partners and take a joint decision about the method of feeding to be given to their future baby.
All the sessions are held in a relaxing atmosphere where each patient can discuss her worries and feelings. Advice about solid feeding is given, when it should be started and what type of solid foods should be given. The staff usually advise the women not to introduce solids until after the baby is 4 or 6 months of age.

The content of the third parent-craft class is usually centred around the post-delivery period in hospital, the care given there and the normal procedures undergone by the mothers and their babies.

In the fourth session discussion takes place about the first few weeks post-delivery when the patient goes home, what facilities to prepare and how to prepare them and how to take care of the baby at home.
The final parent-craft class is held at the very last stages of pregnancy; where the pregnant women are shown the delivery room and are told when to telephone the hospital (once signs of delivery start).

There are also four evening classes which start in early pregnancy. Invitations to these classes are sent to all pregnant women who are asked to bring along a partner or friend. Various topics are discussed at the evening class such as the choice of labour. Then a visit is paid to the labour ward and films about related subjects such as pregnancy and baby care are also shown.

Although the hospital does not advertise any sort of milk products, during the first antenatal visit the women are given a package promoted by a baby-food manufacturer containing a bottle of vaseline, baby soap, a small pack of women's sanitary towels, a sample of nursing breast-pads, information leaflets and leaflets promoting various baby products including artificial formula and solid foods. A paragraph on the bag states "The Bounty Bags contain samples of well-known products and helpful literature but no recommendation by a Health

Authority or medical or other staff is implied. Some babies may be allergic to particular products. Please read all product instructions carefully and if in doubt consult your health visitor, midwife or doctor."

In the clinic there are many free booklets and leaflets the majority of which, despite the fact that they contain valuable information for pregnant women, are published by the baby-food manufacturers in which most advertise their product.

Historical aspects of infant feeding.

Lactation is a most ancient physiological process (Jelliffe, 1975). Despite the fact that breast-feeding was the only method of infant nutrition (Piu et al., 1978) for millions of years, the baby feeding bottle has been in existence since ancient times and remnants of bottles have been found in excavations in Egypt, Greece and the Roman Empire. However bottle-feeding did not become popular till the ninteenth century (Prince, 1976). McCleary G.F.(1904) has said that it was a common practice in French maternity hospitals, during the same century, as a support for those women who wanted to breast-feed, to be given gifts of foods and money. In some of the British lying-in hospitals it was a rule that mothers should suckle their own babies (Forsyth, 1911).

The invention of a formula for artificial milk was based on a gross algebraic approximation which attests to the "Human infant's adaptability to the metabolically inappropriate" (Jelliffe and Jelliffe, 1976). That invention was a result of the constant search over the years to find a substitute for human breast-milk which would allow the mother to have more freedom either for social or economic reasons or as a suitable method of feeding for orphans (Silverton, 1985). During the early Victorian period women had to return to work as early as four weeks post-delivery, leaving the baby in the care of others. This practice contributed to the high rate of infant mortality during the first few weeks of life (Phillips, 1978).

The 'Wet nurse' was another way of feeding infants which has been practiced since the time when the Pharoh was looking for a woman to feed the prophet Moses and it continued till the days of the prophet Mohammed who himself was breast-fed by a wet nurse. It reached its peak of popularity, in England, in the eighteenth century and remained so until the 19th century when the sucking bottle, which was described by Forsyth D. in 1911 as a type of pocket wet nurse, started to become common. It was rare for the wives of nobles or gentlemen to suckle their own children (Silverton, 1985). This is explained by Jelliffe and Jelliffe in their paper about lactation in 1974 when they said "More than a century ago, in 1847, the Novelist Trollop drew attention to the apparent paradox of the commonness of lactation failure in well fed upper socio-economic women when he commented {How is it that poor men's wives who have no cold fowl or port wine on which to be coshered up, nurse their children without difficulty, whereas the wives of rich men who eat and drink everything that is good, cannot do so? We will for the present leave it to the doctors and mothers to settle this matter between them}".

By the begining of the fifteenth century the breast-feeding of an infant was continued for 2 to 3 years and 200 hundred years later this had decreased to a couple of years while 7 to 9

months was the prevailing duration of breast-feeding early in the 20th century (Rutishauser, 1982).

At one time a cow's horn was used as a feeding bottle (Hutchinges, 1958). Two small pieces of leather were tied to the narrow end of the horn from which the baby sucked (Forsyth, 1911). During the centuries attempts had been made to invent a device which helped in delivering the food to the baby's mouth (Hutchinges, 1958) and at the beginning of the nineteenth century the first glass bottle was invented which was horn shaped. In 1867 a feeding bottle was invented which had an embeded thermometer in the glass which helped to check the milk's temperature (Hutchinges, 1958). There was continuous work by the manufacturers to improve the shape of feeding utensils. The Pap-boat was introduced in the market: It had the shape of a sauce-boat without a handle and was used for thick foods. Pap-spoons were also a common feeding tool and were adapted for semi-solid foods. It consisted of a handle with a long narrow bowel roofed over by a hinged-lid except near the tip, where a more or less semi-circular opening allowed the contents to be poured into the child's mouth (Forsyth, 1911).

The 'Biberon' was a new development of bottle which came from Paris. It was made of glass and had a cork nipple and was described enthusiastically, in an 1851 issue of The Lancet, under the heading 'New Inventions' (Phillips, 1978). By 1869 the 'Mamma' was invented which was pear shape with a rubber valve at its tapering end (Forsyth, 1911). The author says that some authority, in 1876, advised direct sucking from the cow's udder rather than any form of hand-feeding.

50 years ago saw the beginning of the decrease in the prevalence of breast-feeding in the industrialized society which then spread to the developing countries. Among the reasons which caused that decrease were, improvements in the methods of humanization and sanitation of cow's milk. Pastuerization made it safe to drink milk while, in the ninteenth century, heat treatment of evaporated milk reduced the curd tension. To decrease the protein and electrolyte contents the addition of carbohydrate in the milk was the practice in the 20th century.
Embarassment about breast-feeding was among the factors which influenced its decline (American Academy of Pediatrics, 1978). So it was common in a western society for the mother to bottle-feed while if she wanted to do otherwise, less encouragement and support were provided to her.

During the 19th century a mother had 4 different methods of feeding to offer her baby: either she gave it the breast, employed a wet nurse, offered cow's milk or gave Panda or Pap

feeding. Panda-feeding was a mixture of flour, cereal or bread cooked in a broth with butter or milk while Pap feeding consisted of cooked flour or bread (Forsyth, 1904; Phillips, 1978). Forsyth considered that 3 developments occured in the nineteenth century: first was the popularity of artificial feeding, second was the invention of the sucking bottle and third was the demand for special foods suitable for infants.

So there was a major decline in breast-feeding between 1850 and 1900. This was regarded by Roberts A.E. (1975) as largely responsible for the high rate of infant mortality which persisted during that period. Motherhood was losing one of its chief functions, first the wet nurse took the place of maternal breast-feeding and was then in time supplanted by the sucking bottle.

In 1840 the first proprietary foods called 'Tops and Bottoms' reached the market. It was a kind of rusk (Roberts, 1975; Phillips, 1978). Thereafter, there was a widespread introduction of ready prepared food products in Europe and across the continent in U.S.A. In 1867 Justin Von Liebig introduced his new proprietary food which he called 'Liebig Food for Infants' (Frosyth, 1911; Apple, 1986). By 1870's the Nestle's milk food company started distributing a new infant food made of milk sugar and wheat flour (Apple, 1986). 'Lemann's biscuit powder' was recommended for the Royal nursery. 'Bullock's Semola' was among the proprietary foods of whom many of the makers claimed that 'Many infants have been fed on it exclusively for some months with the best results' (Phillips, 1978).

It seems that patent food was so popular that every woman preferred it to any other. This was clear when Roberts A.E.(1975) commented that "Despite the exposure of dishonest products in the press, despite the cautions of the medical profession, despite the high price of the products themselves and even where an extensive trial of them had failed to produce good results, patent foods continued to be relied upon".

The Infant Milk Depot was established in various countries. In France, it was called "Goutte de Lait" and was founded in 1892 (McCleary, 1904), in New York during 1893, in U.K. in 1899 and in Boston in 1910 (Prince 1976). The main function of these milk depots was milk despensing under medical supervision intended primarily for those children who could not be breast-fed. The cow's milk was either pasteurized or sterilized with or without modification and was packed into bottles ready for the baby after a rubber teat was fixed to the bottle. In the English milk depots the children were supervised by a depot officer.

In Bahrain and as in many of the developing countries, there is little historical information about infant feeding. Most of the publications are considerably recent and go back only 5 to

10 years. Most of the elder generation think that from the days of ancient civilization in Bahrain and until very recently, breast-feeding was the main source of nutrition for young children. Fourteen centuries ago when the Islamic religion dominated the country, that method of feeding was reinforced and 2 years of breast-feeding was the norm.

Musaiger A. (in 1983) described bottle-feeding as "A new disease which started prevailing unnecessarily in the developing countries in the last 20 years".
A recent report from Yemen showed that fewer Yemeni women breast-fed while the use of bottle formulae had increased. The author thinks that that drop in breast-feeding practice was due to a combination of cultural and social factors which were exacerbated by widespread and effective advertisements by the food industries (Beckerleg, 1984).

Despite the decline in breast-feeding, the prevalence in some of the developing countries is still considerably higher than that in the U.S.A., even when the attitude of the people in U.S.A. changed in favour of breast-feeding (Young et al., 1982). The World Health Organization's collaborative study on breast-feeding has suggested that breast-feeding, particularly in the rural areas of some of the developing countries, is still practised for a prolonged period (WHO, 1981).

Concern about the declining trend of lactation in the developing countries, supposedly in favour of bottle-feeding, has led to the joint WHO/UNICEF meeting on infant and young child feeding (WHO, 1979). This was followed by an international code for the marketing of breast-milk substitutes and the formulation of recommendations for infant and young child feeding (Editorial, 1980).

It has been obvious that there has been a gradual decline in the prevalence of breast-feeding through the nineteenth century in the industrialized world and during the 20th century in the developing countries which started after world war II when there was widespread use of artificial formula as a mathematically linear way to nourish babies. One of the disastrous reasons for the tremendous popularity of bottle-feeding in the developing countries was the covert feeling, of people of 'Westernization' (Jelliffe and Jelliffe, 1976). One of the evils of modernization or westernization in the society was not only the preference of artificial milk but also the problem of loss or decreased status. This was reflected by the aversion to the use of some of the beneficial traditional methods of feeding such as lactation. The exposure of many traditional cultures to western influence has eroded the infant feeding practice by the introduction into these cultures of the phenomenon of bottle-feeding (Zurayk & Shedid, 1981).

Several reports from different parts of the world have shown the decline in the incidence and the duration of breast-feeding during the 20th century. Some of those who had stressed that fact in the developed countries are (Hewat & Robert, 1985; Meyer, 1958; Williams, Howard & Carmichall, 1983; Helsing, 1984; The American Accademy of pediatric, 1978). While in the developing countries (Biddulph, 1983; Tamchareons, Temcharons & sirivunaboot, 1979; Amine, 1980; WHO,1982).

In the U.K. there are at least two generations of women and midwives who have had little experience of the breast-feeding act. This means that there is no core of knowledge and expertise to be handed on, putting even more strain on those mothers who attempt to breast-feed. All that these women have are the full visual aspects of bottle-feeding (Fisher, 1985; Silverton, 1985).

The decrease of breast-feeding reached a climax and drew the attention of the medical personnel to reassess infant feeding practices. In the U.K. in 1977 a panel on child nutrition agreed that a review of infant nutrition was necessary and this decision was approved by the committee on medical aspects of food policy. The working party report covered 3 main areas of infant feeding, breast-feeding, bottle-feeding and the introduction of solid foods. The report found that U.K. was no longer a breast-feeding nation and suggested that the decline in the practice of breast-feeding was due, in part, to the change in the role of women in home and at work. It recommended women to breast-feed for 4 to 6 months and if they were not able they should try at least for the first few weeks. The report has emphasized the need of these women to be encouraged and supported by the health professionals. It also highlighted the various disadvantages associated with artificial feeding and the importance of not introducing solid foods before 4 to 6 months of age. One other recommendation was that the artificial formula should be so manufactured that the dilution required to reconstitute the milk should be independent of the age of the baby. The report concluded by saying "The best food for babies in the early months of life is human milk" (DHHS, 1974).

This report was updated in 1980 (DHHS, 1980a). It restated the benefits of breast-feeding and the role that health authorities and voluntary organizations had played in supporting mothers who wished to breast-feed. The working party of the report recommended those women who were not able to breast-feed to use an approved infant formula.

The Department of Health and Social Security in the U.K. requested the Office of Population Census and Surveys to run a study on the attitude of mothers towards infant feeding. Martin J. carried out a survey on infant feeding for England and Wales in 1975 and included Scotland in her other study completed in 1980. She found that the breast-feeding rate had

significantly increased during the five years period from 51% to 67% in England and Wales. The figure for Scotland in 1980 was 50%. She also found that four-fifths of the mothers who had started to breast-feed were still doing so at two weeks, almost two-thirds at 6 weeks and two-fifths at 4 months. She thought that that increase in the incidence of breast-feeding was due to the fact that mothers became more aware of breast-feeding as a result of publicity and support given by the health professionals.

In the U.K. infant foods, particularly artificial formula, had come more under scrutiny. The DHHS (1980) report on artificial feeds for the young infant recommended that all infant foods should be examined before being marketed. It also recommended that the composition of foods which ought to be the sole source of nourishment for infants should be similar to the average composition of the human milk. For artificial formula no other fluids except water should be used for the reconstitution of a feed. The report concluded by recommending that there should be no advertisment which would discourage mothers from breast-feeding.

Various voluntary and other organizations have beed founded, during the last decades, in different parts of the world. Their main objectives were to help and provide the necessary information and support to those mothers who wanted to breast-feed. Among these are the La Leche League in U.S.A., the Ammehjelpen in Norway, the National Child Birth Trust in U.K. and in Australia the Nursing Mothers Association of Australia. They all act as a doula-surrogates for mothers who wish to breast-feed (doula came from the ancient Greek word for a female assistant. Traditional cultures have doulas to assist the women during late pregnancy, childbirth and neonatal period.).

Recently the trends, in most of the developed and some of the developing countries, is more in favour of breast-feeding. This is partly due to the better understanding of both mothers and professionals about the benefits of natural lactation and partly due to new polices adopted by governments and health authorities towards encouragement of breast-feeding and against advertisments, at least in the health institutes, for artificial milk (WHO, 1981a; Young et al., 1982; Entwisle, Doering & Reilly, 1982; Martin, 1980; DHSS, 1980a; Article, 1984).

Some countries have taken stronger action against the widespread use of artificial-feeding. Papua New Guinea is a small country: its goverment in an effort to overcome that problem introduced new legislation in 1977 called 'Baby Food Supply (control) Act'. This act regulated the marketing of artificial formulae, bottles and teats. These items were not available over the counter for the public and it was therefore necessary to have a prescription from a health worker before the pharmacist could supply it. The prescription is not issued

unless the health personnel was satisfied that it is in the baby's interest to be artificially-fed. He should advise the mother about the techniques of bottle and teat sterilizations as well as the proper methods of formula preparation. Any shopkeeper or medical professional who was found not abiding by that regulation would be fined heavily (Biddulph, 1983). The author claims that the incidence of breast-feeding in Papua New Guinea has increased significantly after that legislation and also that there was a decline in the incidence of gastroentritis and infantile diarrhoea.

Another example was in France where the health authorities realized that one of the main factors contributing to infant mortality was defective methods of infant nutrition. Hence there was an extensive review of the methods of infant nutrition and later a campaign was begun to encourage breast-feeding or the supply of sterile milk when lactation was not possible (McCleary, 1904).

Since 1974 the Indonesian government has promoted breast-feeding and the main theme of the XVth International Pediatric Congress held in New Delhi during 1977 was 'Breast-feeding with love leads to better child health' (Suharono et al., 1979).

Having mentioned that, in some countries even in the U.S.A., the full facilities of the commercial market place have not been used with a message in favour of breast-feeding. On the contrary all that has been done is to deepen the belief among the people that artificial-feeding is better (Manoff & Cook, 1980; Ladas, 1970).

Lactation.

Nutrition is the most important factor which affects the growth of a child. Each infant must receive nutritive substances from external sources for its growth and development. The natural food for infants is human milk which is the corner stone of nutrition in infancy. It is a naturally balanced diet which meets the needs of the newborn. No artificial food can mimic its natural, nutritional and anti-infective property.

Various agencies have reinforced the concept that every infant should have the right to be breast-fed. The international confederation of midwives in their meeting in 1984 recommended that breast-feeding should be given for at least six months particularly in those parts of the world where the incidence of infant mortality, morbidity and malnutrition is high (ICM, 1985).

If the goal of the World Health Organization, which is health for all by the year 2000, is to be achieved it would be important to give priority to the needs of population groups at high risk. The newborn and children under 2 years in some of the developing countries constitute the main bulk of the at risk population and one of the major causes of ill health is infant malnutrition.

The most critical period in the infant's life is immediately after delivery and for a few months after. The child is suceptible to a number of kinds of trauma which may leave permanent ill effects. After a period of secure intra-uterine life the infant is required to adapt itself to new physical and psychosocial dimensions and the challenges of extra-uterine life. Jelliffe and Jelliffe (1983) commented that foetal intra-uterine life is not only a nine months period but it extends to 18 months (9 intra- and 9 extra-utrine) and the breasts act as an external placenta after the child's birth.

Unlike other mammals, the human infant is relatively immature even after a full term delivery. While most other young mammals obtain independence within a short period after birth, the human infant remains considerably dependent for a long time. For example, at birth 75% of the monkey's brain is mature while for human infants the figure is 25%. The newborn rabbit doubles its weight in five days but the human infant takes about five months. The newborn baby, which is unable to function on its own, needs active support and rearing for its survival and wellbeing. Lactation which is God's creation is the ideal nourishment for the growth of the human being. It is simple, natural and considered one of the normal functions of humanity. Mothers throughout the ages have happily nursed their babies. Breast-feeding has not become complicated in recent years: only our attitudes towards it have created

problems (La Leche League, leaflets).

The milk of each species is well adapted to the particular needs of that species (American Academy of Pediatrics, 1978) and human milk is made in such a way that close contact between the newborn and its mother is necessary for frequent feeding. Breast milk has a low protein and fat content which is different from the other mammalian milk, which has high content of protein and fat allowing the animal's newborn to survive for a longer time away from its mother. They thus have infrequent and intermittent contact with the mother (Cutting & Ludlam, 1984; Lozoff & Brittenham, 1979).

Some authors believe that breast-feeding is an instinctive behaviour while others believe that it is not only an instinctive but also a learned art whose success depends on a number of physical and psychosocial factors (Ellis & Hewat, 1984; Jelliffe and Jelliffe, 1983; Martin, 1975). Ladas A.K. (1970) has stated the belief that breast-feeding in the human has never been an instinctive act but is a womanly art passed down from generation to generation in almost every culture.

Whatever opinion is correct breast-feeding should be regarded as an intimate physical experience between 2 people (Flint, 1984) in which success depends on the integration of three systems: physical, emotional and supportive (Cutting & Ludlam, 1984).

The technique of sucking the breast is different from that of sucking the teat of a bottle and it is difficult for a baby to suck the nipple when he has learnt to feed from a bottle. When the baby is separated from his mother for a long time after birth, and because babies are sensitive, it gets used to being held in a certain way, to take food at a particular temperature and even becomes used to the concentration of formula milk given. When the baby is later brought to his mother it may not know how to feed from the breast because it has already became used to the teat (Tylden, 1976; Newton and Newton, 1967).

The cost of the introduction of artificial formula and the decline of breast-feeding has been under consideration in various parts of the world and especially in the developing countries. The cost of artificial formula may not be a problem in the industrialized countries but it is certainly a factor which may strain the family income in the developing countries. Finance affects both the family and the national budget in the form of providing foreign exchange for the import of milk powder and in the wastage of a national resource which is breast milk.

Walker in 1978, calculated that the amount of money needed to supply cow's milk preparation to all infants born during a one year period throughout the world (120 million) would be about 14 billion dollars. It has also been estimated in a country like Kenya that the breast milk loss was equivalent to $ 11.5 million while in Tanzania the value of human milk in

terms of foreign exchange has been calculated at $22 million per year (Musaiger, 1983). Rohde J.E. (1982) has made a calculation on the assumption that if all the women in Indonesia were to cease breast-feeding, an expendture of $ 52 million per year would be needed to purchase adequate formula replacement, to pay for hospital care for children with diarrhoeal diseases and to increase the family planning services. Even in a developed country such as the U.K. mothers could save money if they chose to nurse their babies. The La Leche League group, a few years ago, reported that by breast-feeding for the first 6 months the British mother could save up to £100. These figures are particularly important when it is realized that three-quarters of humanity live in the developing countries (Ebrahim, 1980). Breast-feeding as a primary health care resource should therefore not be underestimated.

The majority of women should be able to breast-feed even if malnourished and providing food for a lactating woman is less expensive than providing artificial formula for the baby (Thornton, 1984).

The breasts, in some of the western countries, are no longer regarded as the source of nourishment for the newborn. On the contrary the breasts have become a sex symbol rather than a functional organ (Bacon & Wylie, 1976). Feelings of shame, guilt and anxiety arise when the breast is defined in a society as a sexual object for the intimate relationship between men and women and such feelings would arise when the infant is given the breast. It is not unusual for a woman to expose her breasts through a transparent blouse for errotic purposes (Ellis, 1981) and it is quite normal to find a nude picture with breasts in full view in some of the U.K.'s daily newspapers. If a woman were to breast-feed her baby in public, however, she would be viewed with horror for such profanity. Holt and Wolkind (1983) in their paper about the early abandonment of breast-feeding, after realizing this problem, said "With the current obsession with the female breasts shown by sections of the media it is not surprising that many women find it difficult to accept a dual role for their breasts".

Although breast-feeding is no longer crucial to the infant's survival, in many countries, the mother's attitude towards this function can still profoundly influence the health of her infant (Counsilman, Mackay & Copeland, 1983).

The characteristics of women who choose to bottle- or breast-feed.

A large number of researchers have tried to study the characteristics of women and their relation to the choice of infant feeding. Some authors share the same views while others differ in some important aspects of the characteristics and the mother's behaviour towards infant feeding.

Fishbein M. (1980) when discussing the 'Theory of reasoned action' reported that much of social behaviour is under volitional control, and is therefore determined to a large extent by the individual's intention to perform that behaviour. The intention, in turn, is regarded as a joint function of attitudinal and normative components. The attitudinal component is seen as a function of the summed products of the individual's belief that the behaviour in question leads to various outcomes and his/her evaluation of these outcomes. The normative components are seen as a function of the summed products of the individuals belief about how specific others expect him or her to behave and his or her tendency to comply with their expectations.

With this background information in mind about the theory of reasoned action, it could be said that a mother's attitude to breast-feeding and her success depend on three factors: First, maternal behaviour and her characteristics, secondly, the extraneous influences on the mothers choice of infant feeding and finally the integration of various elements contributing to milk production and ejection and the state of the normality of the baby. Maternal characteristics will be discussed first.

Socio-behavioural variables which are based on the cultural or psychological characteristics that influence the mother's behaviour with respect to feeding are the work status, support, advice, income, education, previous experience, desire to breast-feed, desire to have freedom and the intended duration of nursing (Allen & Pelto, 1985).

Bentovim A. (1976) has also reported some of the individual variables that may affect the breast-feeding decision; first, the attitude of the mother such as a positive wish to be pregnant, a positive wish to breast-feed and a lack of embarrassment; secondly, the mother's personality trait which includes her ability to give and receive emotion and finally life experience such as good mothering experience.

The mother's attitude towards breast-feeding is not necessarily an isolated phenomenon but may be related to her whole attitude towards children (Newton and Newton, 1950).

Mothers who are more prone to breast feed are those who are married or having a cohabitee (Hally et al., 1984), those older in age -25 years and above- (Martin,1975), those with more

education (Boulton & Cotte,1979; Collins et al., 1984) or educated beyond the age of 18 (DHHS, 1980a), those who had had a long period of prenatal care, those who smoked less, those of high socioeconomic status, those who are well informed, those who are supported by their families and voluntary organizations and those who are highly motivated.
Women whose economic status is such that it is not necessary for them to return to work soon after delivery were found to be more likely to breast-feed as were women who were breast-fed themselves as babies (Bacon & Wylie, 1976; Entwisle, Doering & Reilly, 1982; Lyon et al.1981). The woman's prenatal intention, which is assumed to be the consequence of a long socialization history prior to pregnancy, significantly affects the choice of feeding method.

Hospitals with rooming-in facilities can influence motivated mothers to be closer to their babies and will help them to develop self confidence and competence in looking after their babies. More women who had a rooming-in facility during childbirth were found to breast-feed their babies (Greenberg, Rosenberg & Linda, 1973).

Some authors have found that there is a relationship between nursing and the type of maternal home. For instance, mothers living in their own homes at the time of birth were found to be more likely to breast-feed than those living with parents or other relatives (McIntosh, 1985). The desire to breast-feed, the preparation of the breasts prenatally and the absence of physical discomfort while breast-feeding are all related to the choice of lactation (Hewat & Ellis, 1986) First time mothers and those who had often watched, during childhood, other children being breast-fed were found to be more inclined to breast-feed than are multiparous patients (DHHS, 1980a; Cusson, 1985). Lyon et al. (1981) said that the primiparous found breast-feeding more pleasurable, and less restricting. But Bergevin, Dougherty and Kramer (1983) think that the primiparous mother is more prone to bottle-feed because of lack of previous experience, which can make them less confident of their ability to produce adequate nutrition for their babies.
Mothers with a high occupational status (Williams, Howard & Carmichael, 1983), high social class (Bacon & Wylie 1976) and women who had experience of breast-feeding previous children with no problems were more prone to nurse their new born (Barnes and Barnes, 1976) as were those who attended more antenatal clinics especially early in pregnancy (Palmer, Avery & Taylor, 1979).

In a study in the U.S.A. it was found that white American women were more likely than black women to nurse their babies (Collins et al., 1984).

Andrew, Clancy and Katz (1980) found that mothers who read books on child care were more

prone to breast-feed, while Ellis and Hewat (1984a) found no significant relation between prenatal breast-feeding teaching or professional assistance to breast-feeding women and the number of women who were still breast-feeding at 3 and 6 months. Women who had induced labours and assisted deliveries such as ceasarean section and breech delivery were less prone to nurse their children (Palmer, Avery & Taylor, 1979).

A knowledge of breast-feeding (whether from books, medical workers or experienced mother) can help an inexperienced woman to overcome many of the problems that would otherwise encourage her to quit (Counsilman, Mackay & Copeland, 1983).

Mothers with a strong conviction about the advantages of breast-feeding and with few specific worries about it were more likely to initiate breast-feeding (Dusdieker et al., 1985), although women who thought that breast-feeding would have a negative effect on their health are less prone to breast-feed (Zurayk & Shedid, 1981).

The infant-centred attitude in feeding (Bentovim, 1976) and the belief about breast-feeding such as 'Breast is better', 'The baby gets immunity', 'It is physically and emotionally closer', 'It is natural', 'Convenient' and 'Provides nutrition', are all pivotal factors in determining whether or not a mother will breast-feed. If the mother has the expectation that she herself will benefit from breast-feeding (in a way such as return of her figure, enjoys sensation of breast-feeding and the desire to be a complete woman), this will reinforce her conviction that breast-feeding will benefit her child. Therefore the primary predictions for the initiation of breast-feeding are: First, positive maternal belief about breast-feeding. Second, absence of maternal worries about breast-feeding and finally higher level of maternal education.

Some authors believe that the early contact between mother and child, soon after birth, can have a positive effect on the initiation of breast-feeding (Richards, 1975). Most women during their pregnancies have fantasies and fears about having an abnormal baby and these can be reinforced after delivery if the baby is separated from the mother (Tylden, 1976). In some hospitals the separation of the baby from its mother and the introduction of formula feeds to the babies can give the mother the impression that artificial formula is best, natural and the expected pattern of looking after the baby when she gets home. After all the mother knows that the hospital is run by experts.
Early contact between mother and child and the initiation of lactation allows the mother to develop a self confidence and assurance about her ability to take care of her baby.

The level of the woman's awareness at delivery (the amount of medication given), her reaction to the birth experience (whether it was a positive or negative experience) and her

initial reaction with the baby, can all affect feeding behaviour (Entwisle, Doering & Thomas, 1982).

Women from a society where breast-feeding is the norm, who during pregnancy are surrounded by people who know about it and encourage it, who are far from any social restriction about where, when and how often to feed their infant, are usually successful breast-feeders. On the other hand mothers who have never seen a baby breast-fed have more difficulty in learning to nurse than does a mother who comes from a family with a tradition of breast-feeding. For the latter, lactation is a familiar activity which the girl has watched all her life when her mother, her aunt or her sister were feeding their babies (Tylden, 1976).

It has been found that women who prefer to bottle-feed have the following characterestics: they are young, single (Hally et al., 1984), isolated, alone, afraid, have emotional and health problems and consume excess alcohol and cigarettes (Cousilman, Mackay & Copeland, 1983). In such mothers breast-feeding was never discussed in the antenatal clinic, the baby was separated from the mother after birth, the bottle was given and the baby was fed on a hospital routine and not on demand. If she wishes to breast-feed her baby, her wishes are ignored or she is discouraged. Hendrickse (1983) wondered what would happen if such a woman wanted to breast-feed. He said "Assuming that she has the strength to overcome these initial setbacks and goes home breast-feeding, she now finds it is not acceptable in her sexually liberated modern society for a woman to feed her baby in public and certainly not in the company of guests. Under these circumstances breast-feeding becomes intolerable for most mothers who switch their infants to a bottle with relief and gratitude."

In another report the authors found that early school leaving (before the age of 16 years) was significantly associated with artificial feeding. They also reported that the mother who develops a problem with breast-feeding after her discharge from hospital would find that her problem would neither fall within the feild of the obstetrician and certainly not the paediatric specialist nor clearly within the field of the public health nurse or general practitioner. In such instances it may be easier for her to switch to bottle-feeding (Connolly, Cullen & MacDonald, 1981).

Leeper, Milo & Collins (1983) thought that one of the impediments to breast-feeding is when a woman is unmarried and living with parents or another relative. This is not the case in some of the developing countries, especially in Bahrain, where the single parent is strictly not acceptable, while married mothers who live with relatives or parents would be more prone to breast-feed because of the help and support they obtain.

Marital problems may influence women to use artificial formula. This was reported by Switzky, Vietze and Switzky (1979) when they found in their study that among middle income women the bottle-feeder perceived their marriages as having more conflict.

In the majority of the published articles about infant feeding, it is reported that mothers, especially those who decide to breast-feed, make their decision about the choice of feeding method before their pregnancy (Ekwo, Dusdieker & Booth, 1983). Bloom, Goldbloom and Stevens (1982) have added that those who choose to breast-feed do not even consider an alternative. But some mothers, during pregnancy, may not have thought about the feeding method, apart from taking the ideas from those around them and the current public attitude, thus their attitudes could be influenced by their delight as a girl of giving a bottle to the baby or may be influenced by their own infantile experience.

Uninformed women and those who had insufficient knowledge regarding breast-feeding (Wenderlein, 1975), even if they are willing to breast-feed, can have a lactation failure.

Extraneous influences on the mother's choice of infant feeding:

Reports from various authors suggested that there are many factors influencing the decision of infant feeding such as social and family variables, cultural, situational or factors related to contacts. Such extraneous factors are more important than the attitude in influencing the mother's decision to breast-feed (McIntosh, 1985).

Allen and Pelto (1985) reported that there are three categories that may influence lactation: First are the 'Biological factors' which includes variables related to the capacity of the mother-infant dyad to stimulate sufficient production of milk. Factors such as maternal and infant anthropometry, infant sex, prolactin level, maternal malnutrition, breast problems, maternal illness, parity and smoking are important. The second were 'Socio-behavioural' (as mentioned earlier). Finally there is the 'Biocultural' variable which depends on the interaction between the biological and the socio-behavioural processes and include such factors as anxiety, perception of milk adequacy and of infant growth, feeding frequency, supplementary foods, breast preparation, hospital feeding practices and feeding schedule. Bentovim A. (1976) believes that breast-feeding is not only a maternal behaviour but is a result of many interrelating factors of which some would promote and encourage lactation while others would discourage it. These factors are; first, characteristics such as family size, marital status, relationship to the extended family and support and the belief that breast-feeding is a natural function. The second are societal and cultural variables such as the size of the local community, cultural and religious beliefs, housing and the number of those in the house and the role of the breast as a sexual rather than a feeding object. Finally, participating factors in the decision to breast-feed include the response to

pregnancy, response to breast changes, neurohormonal changes and the related psychological state, the length of delivery and the state of awareness at birth, the management of first mother-infant contact, prematurity, separation, malformation, support during puerperium, response to milk let down and milk flow, response of the infant to sucking and the initial maternal response and the amount of interference with infant suckling which results from the introduction of supplementary food.

The Department of Health and Social Security in their published report in 1984 (DHHS, chapter 3.4, 1984a) has advocated that the avoidance of unnecessary supplementation of fluids to the baby, post-delivery, as well as on demand lactation could influence the initiation of the breast-feeding act.

Contacts such as husbands, mothers, friends, relatives and medical advisers frequently have a major influence upon the mother's nutritional practice (Crummette & Munton, 1980). The choice of feeding is affected by the husband's wishes and attitudes towards it (Brown, Chase & Winson, 1961; Bloom et al., 1982a) and the father's support has been identified as facilitating longer breast-feeding (Beske & Gravis, 1982). Husbands can give support in different ways; either physical support, for example helping with the house work, or emotional support defined as verbal reinforcement that breast-feeding is progressing well. Finally he can give psychological support interpreted as a sensitivity to the mother's feelings. The emotional and psychological support are most important for the promotion and continuation of breast-feeding. Housten and Howie (1981) reported that even when a woman has enthusiasm, has knowledge about breast-feeding and is encouraged by her husband, she still requires professional reassurance from health personnel. Shand, N. (1981) believed that the husband's active attention to the mother during delivery was associated with her continuing to breast-feed for at least one month.

Entwisle, Doering and Reilly (1982) found that there was a significant relation between the women's breast-feeding persistence and the feeding methods adopted by her friends. It was also reported that close friends have a major influence upon the mother's choice of feeding method (Bacon & Wylie, 1976; Bryant, 1982), but others have reported that the advice of friends and the mothers of the primiparous patients played a very negligible role in deciding upon feeding choice (Brown, Chase & Winson, 1961).

The woman's own mother also plays a very important role in the mother's decision about infant feeding (Bacon & Wylie, 1976). If the woman's mother's view was in favour of breast-feeding the woman was more likely to plan to breast-feed (Martin, page 45, 1975).

Although health professionals can influence the choice of feeding method (Bacon & Wylie, 1976), Garrett and Ada (1982) in their study in the Cameroon, found that health care personnel were the people who were most responsible for the decline of breast-feeding because mothers receive most of their advice on commercial milk products and their preparation from them. The author thinks that health personnel indirectly and unconsciously promoted bottle-feeding.

The attitude of the health care personnel in the maternity hospital could significantly affect a woman's decision about infant feeding (Counsilman, Mackay & Copeland, 1983). They are considered, especially by non-experienced women, to be the models who always make the best decision in the babies' interest. Having said that, Brown, Chase & Winson (1961) think that physicians play a very negligible role in the decision about feeding choice. Dusdieker et al. (1985) commented that health personnel can have very little influence on those women who have a strong belief against breast-feeding or who have worries about lactation, but they can have an influence on those women who are undecided or whose prior conviction is weak.

Ladas (1970) believes that physicians and nurses are subjected to the same cultural pressures as the rest of the people and they can hardly be expected to become knowledgeable and supportive on the subject of breast-feeding without special training.

Doula is the name given, in traditional societies, for female assistants who supply information and provide support to the mothers. She is involved in mothering the mother by giving the necessary psychological support post-delivery and by helping her to look after the baby. She is also a crucial element in the establishment of lactation (Ebrahim, 1980). The role of the doula in western society may be performed by health practitioners and by breast-feeding support groups (Axelson et al., 1985).

In cultures where women are familiar with the act of breast-feeding, more mothers develop positive attitudes to lactation to the extent that some authors believe that if a woman had not seen a baby being nursed she is more likely to offer her baby bottle-feeding (McIntosh, 1985). The prevalence of breast-feeding has declined partly because of the breakdown of the traditional polygamous family structure and partly due to lack of social support. Jelliffe and Jelliffe (1974) realized this problem when they commented that in a western society artificial feeding is what most women are familiar with, due to various reasons one of which is the lack of information on breast-feeding that these women receive during their childhood.

Manoff and Cooke (1980) in trying to explain the cause of the decline in breast-feeding, said

'That behind every rejection of breast-feeding or its premature cessation, are false notions, prejudices and incorrect information. These ideas are almost as likely to come from health workers as they are to be communicated from mother to daughter or by powerful but often misleading commercial advertising'.

The experience of infant feeding which should be obtained is not restricted to the home environment but can also be obtained through the media of films, television, magazines, advertisments, school, the behaviour of experienced people, religious beliefs and what is norm for that society. Shand and Kosawa (1984) found that reading material about lactation can help little or may have no relation to the success of breast-feeding. Despite the importance of the mother's original intention about her choice of infant feeding, this alone is not a guarantee of success due to the fact that the mother might be facing various problems which would make her switch to artificial formula. These can include a rigid hospital routine and the absence of good advice, lack of information and, probably, negative attitudes in the society to breast-feeding.

Although breast-feeders are usually influenced principally by their own feelings, the favourable attitude of the hospital staff, reading materials and feeding programmes on television or on the radio often encourage their choice.

The frequent attendance at prenatal classes and adequate antenatal preparation of the breasts have a favourable influence on the mother's attitude towards infant feeding.
Another factor which influences lactation is the health of the baby. Breast-feeding can be initiated and continued by a motivated, healthy and confident mother if her baby has no congenital anomaly and has as well a good suckling power. By sucking the nipples the baby is in fact participating in milk production and ejection via stimulation of the secretion of two important hormones the mechanism of which will be explained in the next section.

Hormonal effect on lactation:

The survival of the human race has always depended upon the satisfaction gained from two voluntary acts of reproduction; coitus and breast-feeding. These have been sufficiently pleasurable to ensure their frequent occurance (Newton and Newton, 1967).

To ensure adequate lactation, a process of preparatory changes in the breasts occurs during pregnancy in the form of enlargment of the breast gland, increased sensitivity of the nipple to the slightest touch and the formation of milk either late in pregnancy or soon after delivery.

Two hormones and two reflexes are of paramount important in the mechanism of lactation for the initiation and continuation of breast-feeding. Both the hormones are triggered by stimulation of the nipple. The stimuli passes through the vagus nerve to the hypothalamous and then to the pituitary gland. Prolactin is secreted from the anterior pituitary gland while the posterior pituitary is responsible for the production of oxytocin hormone.

1-Milk production or secretion reflex:

Via this reflex the prolactin hormone is secreted in the blood and reaches the breast alveoli causing them to produce more milk. The level of prolactin hormone depends on the amount of sucking and licking that the baby does, with excessive sucking, which occurs in cases of on demand feeding, more of the hormone is secreted.

2-Milk ejection or let down reflex:

This is also stimulated by licking the nipple which triggers an impluse to the posterior pituitary leading to the secretion of oxytocin hormone. The hormone causes contraction of the myoepethilial tissue of the breast gland resulting in a forceful ejection of milk from the ducts to the baby's mouth via the nipple (Newton and Newton, 1967; Cutting & Ludlam, 1984).

It has been found that restriction of sucking may inhibit lactation while early and on demand and frequent feeding causes repeated stimulation of the breast and nipple assuring adequate production of milk (Carvalho et al., 1983).

Newton and Newton in 1950 reported that lactation is influenced by the amount of blood flow, carrying the two hormones, reaching the breast glands and that the blood flow is very sensitive to the emotional status of the woman. While vasodilatation helps more blood and therefore more hormones to reach the breast, vasoconstriction leads to a reduction in the hormones available at the breast tissue (William, Sandra & Sally, 1976). This may have a role in lactation failure which can occur in patients who are anxious or stressed. Jelliffe and Jelliffe

(1983) called this phenomenon the 'Anxiety nursing-failure syndrome'. They also believe that as a result of this failure the baby would not be able to obtain the fat rich hind milk, due to decreased level of the available hormone and what the child gets is only milk which is already available in the terminal lacteals.

Separating the infant from its mother after delivery and the unconscious psychological conflicts that may exist in the mother such as a refusal to accept the maternity role or conflict regarding the acceptance of the breast as a sexual organ rather than a functional organ for nourishment, can lead to lactation failure through the depression of the milk ejection reflex via the hypothalamous (Call & Calif, 1959).

The ejection reflex failure may lead the baby to dislike the breast due to the insufficient milk obtained and due to the increased efforts required by the infant to obtain milk.

The sensuous enjoyment of breast-feeding is likely to increase the baby's desire to suckle his mother frequently and fully which in the end leads to more stimulation of milk secretion. Other sensory contacts such as auditory, visual, olfactory and tectile are important for a successful lactation and for the milk ejection reflex (Newton and Newton, 1967).

Breast-feeding duration and time of weaning:

Weaning is the process which begins with the gradual introduction, over many weeks, of semisolid and solid foods into the baby's diet with the subsequent decrease in the amount of intake milk.

The optimum time of weaning is not fixed but varies. It depends on multiple factors such as i-social, which contains among its variables the influencial pressure of close contacts like mothers, husbands, relatives and friends. A mother whose friends had introduced solid foods to their babies early is more likely to take the same measures for her baby.

ii- emotional factors play a major role in the decision made about choosing the time of weaning. Broussard A.B. (1984) in trying to explain how emotion could affect that decision, said that a woman for whom food has an emotional meaning such as by feeding would feel that she had provided love and security to her baby: This woman may feel that she is depriving her baby if she did not give solid feeding at an early age.

iii-cultural attitudes to infant feeding, religious beliefs, maternal backgrounds of information and the nutritional and health status of the baby, all contribute to the various influences affecting the mother's decision about weaning.

For a very long time and in every culture and nation the golden rule was to breast-feed for an average of 24 months and during the seventeenth century there was a common belief that solid food was not appropriate to be introduced to the baby until the baby had a full set of teeth (Forsyth, 1911).

Due to the misconception of many mothers about the duration of breast-feeding and the time of weaning, during the last decades, many researchers and professionals became worried about the problem and started to investigate it.

Until very recently, erroneous beliefs about the benefits of early supplementation of solid foods and the early discontinuation of breast-feeding happened to be the normal accepted attitudes of most mothers. At one time and probably until now, in some societies, a fat baby was considered to be a healthy child (Churchill & Kanawati, 1971; Mackenzie, 1985) and the early introduction of solid foods helped to achieve that purpose.

Crummette and Munton (1980) cited a paragraph from the sixties edition of the Nelson's text book of Pediatrics which reflects the professionals' acceptable attitude of early solid food introduction, it was stated "There is little need to add solid foods to the infant's diet before the age of 3 to 4 months, although mothers and pediatricians tend to start solid earlier than recommended, this practice probably is harmless."

Various elements had influenced that change in infant feeding practice and probably the major cause was the unethical, harmful and aggressive ways of marketing that infant food industries launched, as has been stated by Jelliffe and Jelliffe (1983).

In northern Europe, after world war II, mothers used to plan a weaning process of their infants that was gradual. Weaning depended on the foods which were usually available in home and mothers themselves prepared it. But with the passage of time and with modern technology mothers began to lose that skill and gradually handed over the responsibilty of infant feeding to the baby-food manufacturers (Helsing, 1984).

The baby-food manufacturer as well as being successful in the industrialized countries managed to make rapid changes in the attitudes of the women in the developing countries. This was due to the fact that they had started playing on the tune of 'Westernization' and 'Modernization'. They also managed to convince mothers that their breast milk was insufficient for the growth of their babies. As usual, free samples and colourful and elegant information leaflets helped significantly in their promotion.

In both parts of the world the extent of the problem was so great that in the U.K. even after the Department of Health and Social Security recommended, in its report in 1974 (DHHS, 1974), that every mother should not introduce solid food to their babies before the age of 4 months, had failed to change the attitudes of most of the mothers. This was clear after one year when Martin J. (1975) found in her large survey that despite the 1974 DHHS working party recommendation 40% of mothers introduced solid foods to their babies before the age of six weeks.

The U.K. government's policy since 1974 was to promote breast-feeding and to advise mothers about the importance of delaying the introduction of solid foods till after at least 4 months of age. Undeterred by this fact, Martin and Monk in their major survey in the U.K. in 1980 still found that the percentage of mothers who introduced solid foods to their babies before the age of 3 months was very high (55%). They said 'However this figure is high and disappointing, it represents a major improvement from the 1975 figure which was 85%'.

Studies from all over the world, for example Australia, New Zealand, South Africa, Glasgow, U.K. and U.S.A., have reported the pattern of early introduction of solid foods to infants (Williams & Carmichall, 1983; Walker, 1978; Mackenzie, 1985; McIntosh, 1986; Arneil, 1967; Berkelhamer, Whitham & North,1977).

Although the incidence of the early introduction of solid foods in some of the developing

countries is low, the prevalence of abrupt weaning practices tends to be high. In a recent study from Bahrain it was found that only 25.2% of mothers gave solid foods to their babies at 4 months of age and a study from Egypt showed that the majority of Egyptian mothers breast-feed for 6 months without any supplementations (Ministry of Labour and Social Affaires "Bahrain", 1984; Ragheb & Smith, 1979). But in some other developing countries the practice of very late weaning is the norm, for example Mathar Y.C. (1975) and Kumar et al., (1981), reported 60% of the mothers of an Indian village weaned their children between the age of one and two years while Sharma and Lahori (1977) said that only 31% of urban Indian children were given solids before the age of 9 months.

Most health authorities and organizations started during the last decade advising mothers to breast-feed for as long as they could and to try to delay the introduction of solids. The American Academy of Pediatric, Committee on Nutrition (1980) recommended in 1958 and in 1980 that supplementary food should not be introduced before 4 to 6 months of age. The Deparment of Health and Social Security (1980a) recommended mothers to breast-feed for 4 to 6 months and those mothers who can not nurse their infants for a prolonged period should be encouraged to do so for at least two weeks. The DHHS working party also advised not to introduce solids before the age of 4 months.

It was found that bottle-feeding mothers and women who were less knowledgeable about nutrition introduced solid foods earlier than those who chose to breast-feed (DHHS, 1980a; Martin, 1975; Winkelstein, 1984).

Bloom, Goldbloom and Stevens (1982) found in their study that mothers who change from breast to bottle-feeding during the course of infant feeding are more likely to introduce solids at an earlier age than those who breast-fed all the way through.

Advantages and disadvantages of breast-feeding:

In their report comparing breast milk with cow's milk, Jelliffe and Jelliffe (1983) commented that the only similarities between the two are their whitish colour and their water and lactose. The authors believe that even the colour is not the same because breast milk is light bluish. Artificial formula cannot mimic breast milk because the latter varies in composition (DHHS, 1980a) from feed to feed, from the fore-milk to the hind-milk during the same feed and it varies according to the diurnal variations. McCleary G.F. (1904) in explaining the properties of natural feeding, said "Cow's milk is the best substitute for human milk but it has a hard curd which is adapted for the digestion of an animal with 4 stomachs. The human infant has but one stomach, and that is adapted for the reception of milk with a soft curd. The most important point of difference, however, between human milk and the cow's milk is that whereas the former passes from the secreting gland direct to the baby's mouth and is particularly sterile, cow's milk in making the journey between these two points is seriously exposed to chemical and bacterial contamination."

Breast milk is a living substance which contain various active elements and appropriate nutritional ingredients, present in a sterile container in optimum temperature and available at any time without complicated preparations.

Despite modern technology and improvement in the production of artificial formula in order to humanize it, there are still some ingredients in the human milk which can not be reproduced (Cutting & Ludlam, 1984) while unanticipated problems due to bottle-feeding continue to be encountered (Pediatric Society, 1977). Jelliffe and Jelliffe (1976) believe that the increase in the incidence of what they called, 'Cow bottle-feeding syndrome' which was characterized by various childhood illnesses, was markedly associated with the appearance of bottle formula during the nineteenth century.

For a very long time people have recognized the importance of breast-feeding. For instance Yemeni women look at breast milk as being the power of transmission of qualities from mother to child (Beckerleg, 1984), while in Egypt, during ancient times, there was a belief that breast milk possessed a curative power and was used in the treatment of oedema, dermatitis or haematomas. Recently some Egyptians believe that breast milk should be dropped in the eye if a foreign body enters it (Hassouna, 1975; Hartge, 1976).

In some of the developing countries there is poor sanitation, low socioeconomic standards of living and prevalence of infant diseases such as gastroentritis, upper respiratory infections and malnutrition and any decrease in the prevalence of breast-feeding in these

circumstances would just add more problems to the existing ones. In such countries breast-feeding would act upon 3 main areas: malnutrition, infection and child spacing (Biddulph, 1983) and could be life saving (Thornton, 1984).

Properties of breast-feeding:

I-Nutritional properties.

All of the nutritional elements required for the growth and development of infants are present in the human milk in an optimum amount except for some such as vitamin D and Iron which are present in small quantities (Addy, 1976) and Fluoride which is available in low concentration in both bottle and breast milk (DHHS,1980a). Although statistically the level of vitamin D and iron are low, it should be remembered that these figures were based upon simple analysis of breast milk. It was found that the vitamin D content of breast milk is adequate for the infants whom with breast-feeding and natural exposure to the sun would not develop rickets (Lakdawala & Widdowson, 1977). Recent studies have shown that despite the low level of iron in breast milk it is much better absorbed than the iron which is fortified in artificial formula (Mcmillan, Landaw & Oski, 1976; Taylor, 1977). Duncan et al. (1985) found that the infants who are exclusively breast-fed for 6 months are not at a high risk of developing iron deficiency anaemia or a depletion of iron store. The low level of iron in human milk is very important for the milk's bacteriostatic activity through the lactoferrin and transferrin proteins. These two bacteriostatic proteins would lose their bacteriostatic properties if saturated with iron (Bullen, Rogers & Griffiths, 1972).

Beside the other well known nutritional advantages, human milk contains a special type of protein-casein which is appropriate for infant digestion. The casein/albumin-globulin ratio in cow's milk is higher than that in human milk while the major albumin of the human milk's whey is alpha-lactoglobulin, it is beta-lactoglobulin which is dominant in the cow's milk. Human milk also contains less aromatic amino acids than cow's milk (American Academy of Pediatrics, 1978).

The cholesterol content of human milk is higher than that in the cow's milk and cholesterol plays an important role in early infant feeding. Jelliffe and Jelliffe (1971) said that animal studies showed that a 'Dose' of cholesterol is required in early weeks of life otherwise there may be a risk of not acquiring the ability to maintain cholesterol homeostasis in later life, possibly due to inadequate development of the necessary enzyme system. Some of the breast milk fats and other ingredients are necessary for human brain development (Taylor, 1977; Jelliffe, 1975).

With all the nutritional superiority that breast-milk achieves there are still some authors who believe that there are no differences between it and the artificial formula. Fisher P.J. (1983) believes that to say that breast-fed babies are more nourished than bottle-fed babies is a myth, she also relates failure to thrive to the problem of inadequate nursing and inadequate quantity of breast milk available from a malnourished woman.

II-Anti-infective and anti-allergic properties of human milk.

The breast milk possesses anti-infective properties because it contains the following elements;

A-Immunoglobulin A and M; secretory IgA is the dominant immunoglobulin in the colostrum and breast milk. Both IgA and IgM resist digestion and are only partially absorbed from the intestine giving protection to the mucosal surface of the gut. The IgA carries antibodies against Escherichia coli and other bacteria and viruses (American Academy of Pediatrics, 1978; Pediatric Society, 1977). The breast-fed infant has a higher level of these 2 immunoglobulin than the bottle-fed baby. But Fisher P.J. (1983) reported that the infant whether breast- or bottle-fed usually acquire maternal antibodies in the uterus and while intra-uterine, before birth, they begin to make their own antibodies.

B-Lactoferrin; it is an iron binding protein which with specific antibodies inhibits the growth of E. coli and breast milk contains a higher level of lactoferrin than cow's milk (Masson & Heremans, 1971; Pediatric Society, 1977).

C-Leucocytes, lysozyme and vitamin B12 binding protein are all available in greater quantities in breast milk and play a protective role against infection (Hanson & Winberg, 1972; Gullberg, 1974). The availability of lysozymes are essential for the bacteriolytic activity of immunoglobulin A antibodies.
Living leucocytes as well as macrophages and complements such as C3 and C4 are normally present in human colostrum (Goldman & Smith, 1973).

D-Lymphocytes; both T cells which have the ability to transfer delayed hypersenstivity from the mother to her infant and B cells which sythesize IgA, are both available in human milk (American Academy of Pediatric, 1978).

E-It was found that Lactobacilli are the predominant organism in the stool of breast-fed infants while E. coli tends to dominate the stool of bottle-fed infants (Yoshioka, Iseki & Fujita, 1983). Lactobacillus provides protection from gastroentritis in the breast-fed infants and it is

described as the provider of 'Nutritional Immunity' (American Academy of Pediatrics, 1978).

The following illnesses are less commonly found in breast-fed infants:

1-Gastroenteritis.

Gastroenteritis is less common in breast-fed infants (Taylor, 1977; Cable & Rothenberger, 1984) and various case studies, especially in the developing countries, have found that there is a direct relation between the introduction of bottle-feeding and the prevalence of gastroenteritis (Rumondang et al., 1979; Karrar & Abdulla, 1981). The same finding was reported in some of the developed countries (Fergusson et al., 1981). Most of these authors believe that it is the superiority of human milk which is responsible for this phenomenon but El-Hawary et al., (1981) wondered whether the low incidence of enteric diseases in breast-fed babies and the high incidence of such illnesses in bottle-fed babies was due to the protective effect of breast milk or due to the contamination of bottle or milk during the preparation of artificial formula.

2-Respiratory illness:

Both in the developed and in the developing countries it was shown that bottle-fed infants are more likely to suffer from respiratory infection than the breast-fed infants (Addy, 1976; Fergusson et al., 1981).

Taylor et al., (1982) in their study conducted in Britain found that the increased duration of breast-feeding was associated with reduced likelihood of respiratory ilness only if other factors such as smoking, social status and birth weight were controlled.

3-Otitis media:

This condition is more common in bottle-fed infants (Schaefer, 1971). Saarinen U.M. (1982) studied 256 children up to 3 years of age and found that prolonged breast-feeding gives long term protection, up to 3 years, against recurrent otitis media.

4-Neonatal septecaemia and meningitis:

Some of the breast-fed babies are protected from these conditions probably due to the suppressive effect of human milk on the coliform organisms (Addy, 1976).

5-Viral infections:

Sabin and Fieldsteel (1962) and Fieldsteel (1974) (cited by Pediatric Society, 1977) demonstrated in vitro breast milk activity against polio and herpes simplex viruses.

6-Monilial infection:

The lactoferrin content of breast milk inhibits the growth of Candida Albicans making monilial infection less common in the breast-fed infant (Gerrard, 1975).

7-Cot death:

Although many authors reported that the risk of sudden infant death is much higher in bottle-fed than breast-fed babies (Taylor, 1977; American Academy of Pediatrics, 1978), Fisher P.J. (1983) believe that this syndrome has been present since ancient days and its occurrence had no relation with the pattern of feeding.

8-Atopic and allergic conditions:

Cow's milk allergy, undoubtedly, occurs in bottle-fed infants (DHHS, 1980a; Taylor, 1977). Many authors had reported the significant effect of prolonged breast-feeding in delaying the onset of allergic diseases such as Asthma, Rhinitis and Dermatitis, in infants who have a positive family history of atopic diseases (Businco et al., 1983; Halper, 1982). In Finland, Kajossari and Saarinen (1983) had found that prophlaxis of atopic diseases in infants, with a family history of the disease, is achieved by exclusive breast-feeding with no solid foods supplementation for a 6 months period.

9-Hypocalcaemia:

Hypocalcaemia is one of the causes of neonatal convulsion and occurs exclusively in bottle-fed babies. The cause could be attributed to the high phosphate content in cow's milk (Taylor, 1977; DHHS, 1980a).

10-Hypernatraemia:

Hypernatraemia in infancy could lead to brain damage. Concentrated formula may contain high sodium which leads to high solute load over the kidneys causing obligatory excessive water loss and if this is associated with high environmental temperature and diarrhoea more water will be lost leading to hypernatraemic dehydration which may ultimately lead to brain damage (Taylor, 1977; Walker, 1978; DHHS, 1980a).

11-Obesity:

Overfeeding in infancy may affect food habits later in childhood. The prevalence of infantile obesity in the U.K. during 1970's was very high (20 to 30%) and various factors contributed to that phenomenon of overweight. Among these were the practice of bottle-feeding, the tendency by some mothers to force the infant to finish what is left in the bottle, addition of cereals to the formula, excessive use of sugar and early introduction of solid foods (American Academy of Pediatrics, 1978; DHHS, 1980a). Overweight could be a result of giving

over-concentrated formula which leads to high solute load and water loss. The baby will feel thirsty and this feeling might be explained by some mother as hunger. Thereby giving the baby another bottle which will add more calorie to the total caloric intake. To overcome this problem some authors had advised the use of a pre-packed formula to replace the hand prepared ones (Parnell, 1976).

Alnasir F.A.L. (1987) has found a significant relation between a high increase in the infant's body weight at 18 months of age and the use of artificial feeding.

Breast-feeding helps against obesity by controlling the calorie intake. This is performed during each feed by the high lipid and protein content of the hind-milk which serves to satiate the infant and therefore he or she discontinues feeding (Hall, 1975).

12-Necrotizing enterocolitis:

Premature infants and infants after exchange blood transfusion are more susceptible to this condition. Most authors believe that this condition is seen exclusively in the bottle-fed babies (Taylor, 1977) while it is very rare in the breast-fed infants (American Academy of Pediatrics, 1978).

Although it is not yet clear how much breast-feeding could protect against this condition, Ruspandji et al. (1979) reported an infant with necrotizing enterocolitis in whom health, growth and development improved markedly after being put on breast-feeding. The authors concluded that breast-feeding should be given to every infant who suffers from necrotizing enterocolitis.

13-Coeliac diseases:

Auricchio et al. (1983), in their retrospective study postulated that prolonged breast-feeding may reduce the risk of development of coeliac disease.

14-Coronary vascular disease:

Taylor B. (1977), reported that cow's milk fat is atherogenic and Davies D.F. (1971), believed that early cow's milk feeding may be an important factor in the later development of coronary diseases.

The overall morbidity, as shown, is much less in the breast-fed than the bottle-fed infants. Dagan and Pridan (1982) reported that breast milk feeding had even reduced the emergency room visits and hospitalizations rate. Also it was found that episodes of childhood illnesses may be shorter if breast-feeding was given for prolonged period (Williams, Howard & Carmichalla, 1983).

III-Infant growth and development.

This subject has been controversial and various authors from all over the world have reported different results some of which will be quoted.
A study from Tunisia found that among the under privileged infants breast-feeding provided physical growth and sensory and motor development (Young et al., 1982) and in another report Victora et al. (1984), commented that breast-fed infants for 3 to 6 months had a lower prevalence of low weight for age, length for age and weight for length, but longer duration of breast-feeding had worse effects. Similar findings were reported by Sidhu, Grewalr and Bhatnagar (1981).
Hoefer and Hardy (1929) conducted a study over 383 children aged 7 to 13 years and found that children who were breast-fed had superior physical and mental development, while among children who had superior intellegence fewer children were bottle-fed.

The relationship between type of feeding and the developmental process of children at 5 years of age was studied. The findings suggested that there was a positive correlation between breast-feeding and the vocabulary and visuomotor coordination at 5 years (Taylor & Wadsworth, 1984) while Menkes J.H. (1977) reported that among children with learning disorders that he had studied the majority were bottle-fed.

Having said that, there are some other authors who either found no relation between the pattern of feeding and the infant's growth or found lower growth parameters in the exclusively breast-fed infants. For instance Hitchcock (1985) found that both breast- and bottle-fed infants had a similar weight increase from birth to 3 months of age but after that the bottle-fed groups had higher body weights. Duncan et al. (1984) in comparing the data that they had obtained from 33 exclusively breast-fed infants for 6 months with data from the National Centre for Health Statistics in the U.S.A. found that these children had a significant slower rate of growth both in length and weight. They concluded their study by saying that their finding was either due to the fact that the data from the National Centre for Health Statistics was not suitable for the exclusively breast-fed infants or breast milk may not provide the nutrition required for the optimum growth in the first 6 months.

IV-Psycological properties:

The psychological properties of breast-feeding are well known and have been documented by many authors. The child-mother bonding process strongly develops in those environments where breast-feeding is used early, often and for a long period (Cunningham, 1979). Breast-feeding allows more mother-infant contact, prolonged physical skin to skin

touch and eye to eye dialogue.

Some authors believe that the early relationship between the mother and her baby which may develop via touching, holding and breast-feeding could have a marked effect on the baby's emotion and psychology late in infancy and even when grown up. Jelliffe and Jelliffe (1977) reported that the possibilities of child abuse are higher in women who did not experience that bonding process and had no close interaction with their babies, and their children may be more susceptible to psychological maladjustment.

The first 12 to 24 hours post-delivery is a very sensitive period because mother-infant interaction begins to occur (Groughs, 1984; Robert et al., 1976). This interaction is markedly strengthened by the process of breast-feeding.

V-Contraceptive effects:

Breast-feeding was used for a very long time and until now, in some of the developing countries, as a method of child spacing. A study from Tunisia found that the contraceptive effect of breast-feeding among Tunisian women lasted up till 10 months post-delivery (Young et al., 1982). It was also reported in the U.S.A. that ovulation is delayed in mothers who breast-fed continuously (American Academy of Pediatrics, 1978).
A documentation from the Population Report (1981), (cited by Jelliffe and Jelliffe, 1983) stating that, "The child spacing effect of breast-feeding is dose-dependent, that is the more sucking, the more prolactin is produced and therefore the longer the period of lactation ammenorrhea".

The working party of the Department of Health and Social Security (1980a) said that even among the British breast-feeding women, the infertility period is short, while in a study from Edinburgh, it was shown that none of the studied mothers ovulated during the unsupplemented breast-feeding period (Howie, McNeilly & Houston, 1981).
Although breast-feeding is not a guarantee against pregnancy, it certainly gives some period of protection.

Disadvantages of breast-feeding:
Behairy et al., (1976) said, "There is nothing bad we can say about breast milk".

Many drugs such as anti-metabolic, anti-thyroid, anti-coagulant and some cathartics could pass through the breast milk with harmful consequences in the baby. Even some chemicals causing environmental pollution such as Organochlorine insecticides like DDT, could be

detected in the breast milk during lactation (American Academy of Pediatrics, 1978).

Barrie H. (1985) believes that the baby who is given the breast could become addicted to it and would ask for it even when it is not needed because the baby considers it as a toy. The author while trying to stress the drawback of breast-feeding said, "This habit could change life into misery and nothing will stop the baby if he is not happy except the breast. Few mothers make the mistake of breast-feeding a second time".

Other problems associated with breast-feeding are; physical difficulties especially in the first week, painful engorgements of the breast, sore nipples (Houston, 1981), inconvenience, limitation of the mother's freedom, mastitis and failure of lactation may lead to anxiety. Stuart A.M. (1982) wrote about her experience when she breast-fed her baby and she thinks that failure of successful nursing led her to be apart from her baby.

Breast-fed infants are more prone to develop haemorrhagic diseases of the newborn. This condition is helped by vitamin K injection (Addy, 1976). It was also reported that breast-fed infants have higher prevalence rate of early neonatal jaundice (Kuhr & Panthel, 1982).

Chapter II

Aims of the study

Against the background of information which has been discussed in the previous sections; due to the curiosity prompted in the field of infant feeding and in a trial to investigate various causes that influence the first-time mother's decisions about infant feeding and what could influence the changes that might occur to her original choice, the aims of the present study were developed.

The purpose of the study was to answer the following:

1.Highlighting the trend, habits and attitudes to infant feeding, both in adolescent girls and in women during their pre- and post-natal periods;

2.Illustration of the cultural beliefs and habits about infant feeding;

3.Finding out the different influences that affect the women's first choice of infant feeding and when, why and how these influences managed to change the women's preferences;

4.Sources of information and support that these women obtain;

5.A trial to find out how effective is feeding education;

6.Comparative description between an Asian and a European culture;

7.Finally, the ultimate concern of this study is to present information that could be used for further studies and for the development of a programme aimed at maintaining and reinstituting the practice of natural nursing. Also to find out when, where and how to intervene to deliver appropriate feeding education and to foster a positive attitude towards breast-feeding.

Chapter III

Materials and Methods:

A prospective and descriptive study of the Knowledge and Attitudes of Women Towards Infant Feeding in Bahrain and Glasgow.
The study is in two main parts -in Bahrain and in Glasgow- each part consisting of 5 stages. It began in early 1985 and was completed in April 1987.
For the purpose of data collection in all stages of the study, various questionnaires were designed to provide information about knowledge and attitudes towards infant feeding.
The questionnaire in each stage was tested by a pilot study and it was checked for face and content validity by asking general practitioners and obstetricians to comment on it. The questionnaire was also examined for repeatability, where the same questionnaire was sent to a group of women twice within a two weeks period and the responses were checked to find out if there was any unclear question. Thereafter the necessary refinements were made.

The processing of data was carried out in the University of Glasgow computer service unit. The statistical package for social science (SPSSX) programme provides various statistical measures, such as Frequencies, Cross Tabulations, Chi-square and Significancy tests, Contingency Tables and Discriminate Analysis. The Apple Macintosh Computer was used for the purpose of graphics drawing and some statistical calculations.

1-The First Stage:

As a random sample, 100 non-married and non-pregnant Schoolgirls within the age range 15 to 17 years were to be interviewed.
The purpose of choosing this cohort was to obtain basic infant feeding knowledge from girls who were at the age of marriage and mature enough but not pregnant. The information obtained was thought to reflect the depth of knowledge and attitude of girls, of whom at least 90% will be future mothers, towards infant feeding, so that the results could be compared with those from the main study group.

The age range of 15 to 17 years was chosen so as to overcome the problems of early marriage in Bahrain (Ministry of Health, Bahrain, 1985), and of early pregnancy in Glasgow, where the percentage of births to teenage mothers (age range of 14 to 19 years) is high (13.5% in 1984) (GGHB, 1984).

Finally, at this age it might be possible to find out the cultural beliefs, attitudes and taboos towards infant feeding before any direct personal experience is gained.

The questionnaire which was designed in order to obtain as much information about knowledge and attitudes towards infant feeding as possible, had four sections [Appendix-1]. The first elicited personal data, the second to discover basic information on infant feeding and the feeding methods that the girls would prefer. The third section looked at various influences on the girl's attitude to infant feeding while the final part was related to the sources of information that those girls would depend on to improve their knowledge of infant feeding.

1.Phase 1 in Glasgow:

For this part of the study Govan Health Centre, Govan, Glasgow, was chosen. The author had a one year clinical attachment in one of the general practices in that health centre.

In January 1985 all girls who were registered with one group practice and who were 15 to 17 years of age were selected from the Age Sex Register. There were 150 such girls registered in a practice consisting of 8500 patients. Of the 150 girls 56 (37%) were 17 years of age, 49 (33%) were 16 and 45 (30%) were 15 .

A letter was posted to all 150 girls explaining to them the aims of the study and requesting them to come to the Health Centre on a given date and time to discuss Infant feeding. If the appointment was not suitable they were asked to phone the Health Centre to arrange another meeting.
Unfortunately since only 30 (20%) girls responded over a period of six weeks it was decided to drop this method of sample collection and to consider alternatives.

The next approach was to try to interview the girls in their school. One of the health visitors attached to the Woodside Health Centre who was paying regular visits to a Secondary School was approached. After explaining the study and its aims to the school headmistress the health visitor was not given any encouragement to undertake this part of the study in that school.

A second school was then approached of which the headmistress asked that permission be first obtained from the Educational Authority before conducting the study. A letter was written to the Authority in Glasgow and pemission was granted.

Over a six-month period, however, the headmistress failed to respond to any of the several letters sent to her or to telephone calls made to her office.
A further contact was made with a third school but the headmaster objected to implementing this study in his school.

Approximately two years were spent in the above mentioned four trials. In early 1987 it was decided to send a postal questionnaires to a group of girls of the appropiate age at their home address. A General Practitioner who has an attachment to the Glasgow University Department of General Practice was approached and gave his permission to use his practice in order to select the sample population required. There were 187 girls within the age range of 15 to 17 years registered in his practice.

The questionnaire was redesigned to make it clear and easy for the girls to read and complete.
A pilot study of 20 girls was done to test the clarity and ease of the questionnaire. Thereafter a few changes were needed to the questionnaire.

A letter was drafted by the general practitioner to his patients introducing the author, giving a brief explanation about the study and requesting the girls to cooperate and fill in the questionnaire [Appendix-2].

The questionnaire, the letter and a self-addressed stamped envelope were posted to all the 187 girls. 77 (41%) completed questionnaires were returned; 18 of the completed questionnaires from the pilot study were added, making a total of 95 completed questionnaires.

II-Phase 2 in Bahrain:

In late 1985 permission was granted from the Assistant Under-Secretary for the Ministry of Education, in Bahrain, to interview school girls.

A large girls' secondary school (Manama Girls Secondary School) in Manama, the capital of Bahrain, was chosen, because of its situation in the centre of the capital and because it has students from all over the country. The headmistress provided a list of all the names of girls who were 15 to 17 years old. It contained 192 names.

Of the 192 girls there were 63 (33%) aged 15, 67 (35%) girls were 16 years old and 62 (32%) were 17 years old.
Since the target sample size was 100 girls it was necessary to randomly select one hundred girls out of the 192 girls available, with equal distribution of all ages. From each age-group 52% of girls had to be selected randomly. Thus, every second girl from the list in each age-group was selected.

The final group consisted of 33(33%) 15 years old girls, 35(35%) who were 16 years and

32(32%) of 17 years of age.

3 to 4 girls were interviewed each day and the total number was seen over a period of 4 weeks. In each interview, which lasted 10 to 15 minutes, there was first a brief explanation about the study and then the girls were asked if they wished to participate.

All the girls were cooperative and showed a keen interest to take part in the study.

2-The Second Stage:

The steps of sample collection in this stage of the study was similar in both Glasgow and Bahrain. The plan was to interview, within a 3 to 4 months period, primigravid patients on their first visit to the Antenatal Clinic. The sample size was to be not less than one hundred women.

The reasons behind choosing Primigravidas at their first antenatal visit were:

1-to describe the women's knowledge of infant feeding at the start of their first pregnancy and to determine their basic understanding of infant feeding before it was influenced by past experience, clinic or hospital atmosphere or by medical personnel:

2-to obtain baseline information for the main cohort study about their attitudes to different methods of infant feeding in the hope that, over the passage of time, any changes in those attitudes and knowledge would be observed and information about who influenced those changes would be obtained:

3-to gather information about cultural beliefs and habits.

The questionnaire was drawn up to provide the basis for the interview and was designed to be filled in by the interviewer. All the data collected were based on women's direct oral response to the question asked.

The questionnaire consisted of various parts concerning infant feeding and other relevant variables to breast, bottle and solid feeding patterns. The following are details about different parts of the questionnaire;

A-The first part of the questionnaire included personal data such as hospital number, name, address, telephone number, age, education, occupation, marital status, duration of marriage, with whom the patient was living, her smoking habits, husband's occupation, father's occupation, number of siblings, the date of the last menstrual period, the duration of pregnancy, expected date of delivery, name and address of general practitioner and the name of the consultant.

B-The second part of the questionnaire was concerned with;
-firstly, the information that the patient had about infant feeding, whether she had any such information and if not where she thought she would obtain it.
-secondly, the sources of influence on her basic feeding knowledge and whether she had experience of observing a close relative feeding a baby.
-thirdly, the questionnaire enquired about the attitudes of her husband or partner and parents to infant feeding, how much influence the husband or partner, mother, closest female friend and her medical adviser have on the type and method of infant feeding that she preferred.
-lastly, to gather information about cultural beliefs and taboos regarding infant and personal feeding, such as the foods that should be taken or avoided during pregnancy or during post-natal infant feeding.

C-In the third part of the questionnaire areas relating to feeding methods were explored, for example the choice of feeding method to be used for the baby, what the mother would do if she thought that her breast milk was not enough and what information she had about artificial feeding.
Also in this part of the questionnaire there was an inquiry regarding the women's knowledge of solid feeding and when and what type of solid foods they would initially give to their babies.

D-The last part of the questionnaire was related to the baby, with information being obtained on whether the pregnancy was planned and the number of children the women would like to have. Where the baby would sleep and what help the mothers would have in looking after the baby was also examined in this part of the questionnaire [Appendix-3].

The questionnaire was tested by a pilot study of 10 primigravidas in Govan Health Centre's Antenatal Clinic. Thereafter, some parts of the questionnaire were redrafted. Primigravidas were interviewed and the data collected were based on their direct oral responses to the questions asked.

I-Phase 1 in Glasgow:

This phase of the study could not be carried out in Govan Health Centre's Antenatal Clinic as was planned originally because of the small number of primigravidas who attended the clinic.

The prospect of doing the study in the local hospital (Southern General Hospital) was

unsuccessful because of various administrative difficulties.

The Royal Maternity -Rottenrow- Hospital was the next choice. Professor Sir Malcolm C. Macnaughton of the Department of Gynaecology and Obstetrics kindly gave his permission to undertake the study in his Antenatal Clinics.

Arrangments were made with his senior lecturer, Dr Andrew Calder, and with the Antenatal Clinic's chief nurse to help in choosing the sample. Each consultant at Rottenrow Hospital has one antenatal session per week at which new pregnant women are seen and in each an average of 2 to 4 primigravidas attend the clinic for their first visit each week.
In order to collect the largest number of women in a three months period another consultant's sessions (Dr H.P. McEwan) was used.

The population sample collection began in July 1985; each interview lasted 15 to 20 minutes. After a brief personal introduction information was given about the study and its aims. Thereafter, the women were asked if they wished to participate in the study and if they would be willing to complete further questionnaires which they would receive at various times in their pre- and post-natal life. Finally the data was collected.

Three women refused to participate in the study and were excluded.
A total of 107 Primigravidas were interviewed during a period of 13 weeks time, of which all were British and none of Asian origin.

II-<u>Phase 2 in Bahrain:</u>

In order to implement this study in Bahrain permission had to be obtained from the Health Authorities. Premission was granted by the Under-Secretary for the Ministry of Health.

In Bahrain all antenatal sessions are carried out in Health Centres which are distributed all over the country, except for the at-risk patients and women in the late stages of pregnancy (>35 weeks), who are referred to the central hospital.
12 out of the 18 available Health Centres in Bahrain carry out a weekly or a bi-weekly antenatal session.
A brief review of the antenatal clinics' statistics showed that an average of 2 to 3 primigravidas attended the clinic in each health centre each week, 7 health centres located in different parts of the country were randomly selected.
4 out of the 7 health centres (Al-Razi, Ibin Sina, Al-Hora and Shiekh Sabah Health Centres) are located in the capital of Bahrain and provide services for the nearby villages.

2 of the health centres (North Muharraq and Shiekh Salman Health Centres) are located in Muharraq, the second largest island with its eponymous city while the last health centre (Essa Town Health Centre) is located in a recently-built town which not only serves a young and middle-age population, which constituted the majority of the people living there, but also provides services to the near-by villages.

All those health centres provide services for a large geographic area and the population registered in it come from various social classes.
The questionnaire had to be redesigned so that it would not be in conflict with the Islamic and Arabian culture of the people, such as not asking the women about their marital status because it is against the religious beliefs and traditions to be pregnant or to live with a stranger without being married.

A pilot study of 10 women was done to test the acceptability of the study. Owing to the limitation of time which the author had to spend in Bahrain, three midwives who regulary attended those antenatal clinics were asked to help with the study and a full explanation about the aims and methodolgy of the study was provided for them. Thereafter the midwives, under supervision, carried out some of the interviews (total 25 primigravidas).

The sample collection began in December 1985 and lasted for almost 13 weeks during which a total of 110 primigravidas were interviewed. Each interview lasted 15 to 20 minutes. At the beginning an explanation about the study was provided and permission to participate in the study was requested. Then only was the data collected.

Only 2 women refused to take part in the study and so were excluded from it. The number of women collected from each health centre varied, because of the fact that each health centre served a different size of population.
28 women were interviewed in Al-Razi H.C., 16 in Ibin Sina H.C., 17 in Al–Horah H.C., 6 in Sheikh Sabah H.C., 20 in North Muharraq H.C., 11 in Shiekh Salman and finally 12 primigravidas were interviewed in Essa Town Health Centre.

3-The third stage:

At this stage of the study postal questionnaires were sent to the primigravidas previously interviewed, both in Glasgow and in Bahrain, a few weeks (2 to 4 weeks) before their expected date of deliveries.

Collecting information from the same women at a late stage in their pregnancies was intended to serve the following purposes:

1-to find out whether they still had the same knowledge, or more, about infant feeding as they had in early pregnancy. This might reflect the effectiveness of the infant feeding education that they had received in the antenatal clinic;

2-to find out if there had been any changes in attitudes towards infant feeding which could reflect the strength of cultural beliefs;

3-to find out if the patients still retained the same choice of method of infant feeding for their babies, and if not who had perhaps influenced those changes.
In addition, at this stage of pregnancy one could measure the amount of support that those women were given by their immediate close contacts such as husbands or partners, mothers, close female friends and their medical advisers, to enable them to implement their choice of infant feeding method.

A postal questionnaire, simply-worded, clear and easy to answer, was designed to provide the information required [Appendix-4].
Each questionnaire consisted of four main parts which were more or less similar to the previous questionnaire but with additional inquiries about the progress of their pregnancies.

For the Bahraini population the questionnaire was translated into Arabic and some questions were rewritten to avoid any conflict that might occur with Islamic and Arabian cultures.

A letter was also drafted to remind the women about their interview during early pregnancy, requesting them to fill in the questionnaire and to write any comments that they might have [Appendix-5].
A reminder letter was sent to those who did not respond within two weeks; the letter explained to them the importance of having their views about infant feeding and requested them to post back the completed questionnaire [Appendix-6].

To both the Glaswegian and the Bahraini sample population a questionnaire, the letter and a stamped self-addressed envelope were posted. To those who had failed to respond within two weeks time a reminder letter and an extra copy of the questionnaire were sent.

4-The fourth stage:

At this stage of the study information was collected from the same sample population by a postal questionnaire when the mothers were three months post-natal.

The reasons behind collecting information from the same women at this stage were:

1-it was hoped that by this time most women should have settled on a method of infant feeding;

2-most women should have passed the critical, most distressing and anxious period of the immediate postpartum weeks, especially in a first pregnancy, and had hopefully adapted to the new pattern of life.

3-by the age of 12 weeks the newborn should have settled down into a pattern of feeding.

The questionnaire was designed to provide answers in five main areas [Appendix-7];
A-The first area related to personal data such as any change in address or telephone number, marital status, with whom the mother was living with at the time, whether she had returned to her job or not and if so who looked after the baby during her absence.

B-In the second part of the questionnaire information was collected about the birth of the baby, the type of delivery and how long she and her baby had been kept in hospital.

C-The third area was concerned with the method of feeding she used and how much influence her close contacts had had on the method chosen.

D-The fourth area of the questionnaire explored the reasons behind her choice of feeding method, whether she was still feeding in the same way, and the amount and frequency of food given. This area also looked at information about other fluid and solid feeding, whether it was started; if not, when it would be started and what type of fluid and solids was or would be given.

E-In the final area of the questionnaire information about the baby was collected such as its sex, age, body weight at birth, illness, sleep pattern (and the place of the baby's cot), its general behaviour and immunization status. The help, if any, the mother had been given to look after the baby and by whom. Finally, whether there had been any difficulties in looking after the baby.

A letter was drafted to be enclosed with the questionnaire, congratulating the women on the birth and requesting them to post back the filled-in questionnaire [Appendix-8].

The questionnaire, the letter and a stamped self-addressed envelope were posted to both

the Glaswegian and the Bahraini populations .

As before, for the Bahraini women the questionnaire and the letter had to be written in Arabic.

Once again a reminder letter was posted to all those who had not responded within a period of two weeks.

5-The fifth and final stage:

In the final stage of the study information was collected from the same sample population six months after delivery. The reasons for selecting this age for the final stage were as follow:

Musaiger A.O. in his study of food habits in Bahrain in 1983 showed that the mean age of the child when suplementary food was given was 6.1 months in the urban areas and 7.7 months in the rural areas. In most published papers it was found that starting supplementary food to the baby has an adverse effect on the the continuation of breast feeding mostly because of the decrease in the frequency of nipple sucking leading to a decrease in the level of hormonal secretion and thus decrease in the milk production (Carvalho, et al., 1983).

Therefore, in Bahrain six months after birth is the period when changes in the baby's feeding pattern occur .

In Glasgow and at this period of the baby's life information about the feeding habits, prevalence and duration of breast feeding would be known, especially at a time when there is a campaign during this decade in the U.K. and in other parts of Europe to advise a return to and prolongation of breast-feeding (DHHS, 1974, 1980a; American Academy of Pediatric, 1980) .

For this part of the study a questionnaire [Appendix-9] was used that provided answers about, firstly, the mother's care of the baby and whether she had to leave it under the care of others when she returned to her job, the baby's age when she went back to her job and what type of feeding she preferred to give while at work.

Secondly, information was obtained about the method of feeding used, whether the mother was still giving the original type of feeding and, if not, when and to what she had changed. In addition, an enquiry was made to find out whether those women who had stopped breast-feeding thought that they needed advice or encouragement to enable them to continue breast-feeding; if so, what kind of advice would they have wished and from whom it should have been given. The women were also asked what they thought the advantages and the disadvantages were of the feeding methods they used, and

whether they would still use the same type of feeding if they were given the choice again. Information about artificial feeding was also collected in this part of the questionnaire.

In the third part of the questionnaire the women's knowledge of feeding was explored. They were asked if they thought that there were some areas of feeding information that they had not been told about during pregnancy and if they thought it was important that such information should have been delivered to them.

Information in the fourth part of the questionnaire was also collected about solid feeding; when it had been started and the frequency and types of food given.
The mothers were also asked to provide a timetable for a full day's feeding.

The fifth part of the questionnaire asked about the mothers' plans to have other children and what type of feeding they would choose to give them.

The last part of the questionnaire also provided information about the baby, its health and well-being, its sleep pattern and any difficulties that the mother had in looking after the baby.

A 'thank you' letter was sent which gave the mother some information about the study and the possibility of implementing its result in the future for the benefit of other mothers and their babies[Appendix-10].
All the mothers were invited to write back if they were interested in receiving a copy of the final report.

To both the Glaswegian and to the Bahraini populations a card expressing thanks, the questionnaire, the letter and a stamped self-addressed envelope were posted.
Again a reminder letter was posted to all those who had not responded within the period of two weeks.

Please note:

1-In all of the used questionnaires there were some questions which were open-ended and some were multi-response questions. The patients were allowed to make more than one response when answering these types of questions; thus it will be found that the total number of responses to such questions do not add up to the total number of patients who answered that question.

2-Some of the completed questionnaires at the 4th and 5th stages of the study were

received relating to children below or above 3 and 6 months of age. This was due to various reasons such as; i-a few mothers had kept the filled-in questionnaires with them for a considerable time before posting it back;
ii-some patients changed their addresses without notification and it took some time before their new addresses were found;
iii-time of posting the questionnaires to the patients depended on their expected dates of delivery of whom some delivered earlier than that date.

3-Most percentages in the study have been rounded to the nearest whole number and as a result the total may add up to between 99 and 101%.

Chapter IV - Results.

I-First stage, collecting information from schoolgirls:

The specific purpose of this stage of the study was to obtain information on infant feeding from a random sample of one hundred school girls who were not married and had not been pregnant. The aim was to establish a baseline of the knowledge and attitudes in a cohort of girls within the age range 15 to 17 years which could be compared with information from the later stages of the study.

The basis of information collection -both in Bahrain and Glasgow- was an interview to complete a structured questionnaire which consisted of five parts:

1-information about social and demographic characterstics;

The following four parts of the questionnaire were related to infant feeding;

2-questions related to experience;

3-questions related to attitudes;

4-questions related to knowledge;

5-questions related to intention;

Although the Tables and Figures contain the exact number and percentage, the percentages in the text were rounded up to the nearest whole number.

I-Phase 1 in Glasgow;

Questionnaires were posted to all girls within the age range 15 to 17 years (total 187) registered with a group practice of 8500 patients, in Govan Health Centre, with four full time and two part time practices.

Out of 187, only 77(41%) girls sent back the completed questionnaire; 2 girls had left home for higher studies and one girl was a case of Down's syndrome. 2 mothers expressed their dissatisfaction about the idea of a questionnaire being sent to their daughters and 81(43%) girls did not respond.

24(13%) envelopes were returned by the Post Office because of incorrect addresses.

No attempts were made to trace these girls or send them another questionnaire because it was thought that the above number of respondents was sufficient once the 18 completed questionnaires from the pilot study were added. The total number of completed questionnaires was 95.

Unlike every other stage of the study the response rate is low and interpretation of the

finding is therefore more cautious.

I-Social, demographic and personal data:

1-Age.

35(37%) girls were 15 years old, 26(27%) 16 years and 34(36%) were 17 years of age.

2-Level of education.

5 girls did not respond. Of the remaining 90, 73(83%) girls were at secondary school, 10(11%) were in college and 5(5%) girls stated 'other' (one was employed, 1 unemployed and 3 did not specify).

3-Occupation.

One girl did not respond. 19(20%) had a job and 75(80%) girls had no job.

4-Place of residence.

One girl did not respond. 89(95%) girls lived with their parents and 5 girls did not live at home.

5-Social class level.

5 girls did not respond.

The social class was categorised on the basis of the father's occupation in accordance with the Registrar General's Classification of Occupation (Office of Population Censuses and Surveys, 1970).

12 girls who wrote 'Not Applicable' to the father's occupation were either from a single-parent family or their father was dead. For these girls the mother's occupation was considered as the basis for social class level, out of which only 5 had working mothers while the remaining 7 could not be classified.

Out of 95 girls, 43(46%) had mothers who were house-wives.

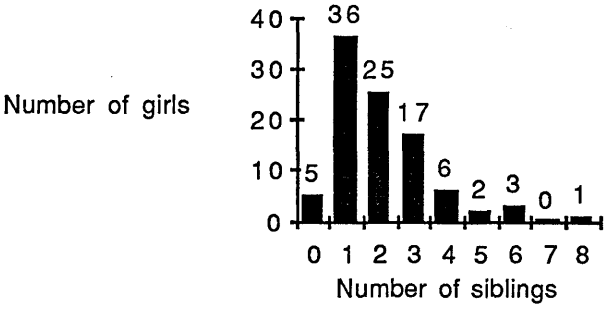
Most (38 '42%') girls belonged to social class 3 [Figure-4].

Figure-4 Social Class

6-Number of siblings.

5 girls had no sibling while the number of siblings for the remainder ranged from 1 to 8 brothers or sisters. The average number of siblings was 2: Median was 2. 36(38%) girls had only one sibling [Figure-5].

Figure- 5 Sibling number



7-The marital status of siblings and their family size.

Out of 90 girls who had siblings 15(17%) had a married brother or sister of whom 10 had children. 3 girls stated that they had nephews and nieces from unmarried siblings. In total 13(14%) girls had 31 nephews and nieces.

II-Experience of infant feeding:

1-What type of feeding was given to your nephews and nieces.

Of 13(14%) girls who had nephews or nieces the majority, 12(92%), said their nephew or niece was bottle-fed.

Table-1 Shows the number of girls related to the different types of feeding given to the nephews and nieces. The total percentage does not add up to 100%, as 3(23%) had more than one nephew or niece to whom breast, bottle or mixed feeding was given.

Type of feeding	Number of girls
breast-feeding	3(23%)
bottle-feeding	12(92%)
both	1(8%)

Table-1 Type of feeding given to the nephews and nieces

2-Have you ever been responsible for feeding or looking after a baby?

69(73%) girls had taken responsibility, at some time in their life, for looking after a young child and being involved in its feeding.

3-How often have you seen the parent feeding a baby?

One girl did not respond. 28(30%) girls have frequently seen their mothers feeding the baby, 46(49%) have had this experience but not often and 20(21%) had never seen a baby being fed.

4-Have any of your relatives breast-fed her child, and if so have you had the chance of observing them doing so?

2 girls did not respond to the first part of the question. 20(21%) girls did not know whether any of their relatives were breast-feeding while of the 14(15%) who had a breast-feeding relative, 1(7%) had frequently seen a baby being fed, 7(50%) had occasionally seen a baby fed while 6(43%) had never seen a relative breast-feeding a baby.

5-Are any of your neighbours breast-feeding a baby? if so, have you seen them feeding the infant?

2 girls did not respond to this question and 42(45%) had no idea about the way their neighbours fed their infants.

Of the 6(6%) girls who had a breast-feeding neighbour, 3 had seen them doing so.

III-Attitude to infant feeding:

1-What is the attitude of your parents to breast-feeding?

One girl did not answer this question. 37(39%) had a neutral parent, 29(30%) parents encouraged while 5 discouraged breast-feeding [Table-2].

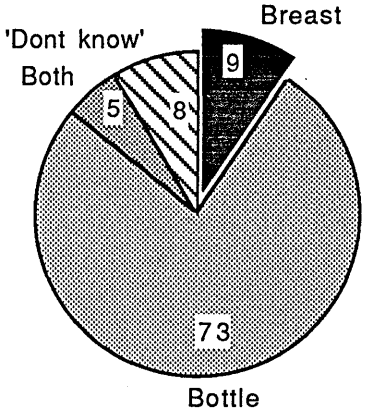
Parents' attitude	Number of girls
encouraged	29(30.8%)
discouraged	5(5.3%)
neutral	37(39.4%)
did not know	23(24.5%)
Total	94(100%)

Table-2 The parents' attitude to breast-feeding

2-Type of feeding given to the girls when they were infants.

8(8%) girls did not know the type of feeding they had been given during infancy while the majority, 73(77%), were bottle-fed [Figure-6].

Figure-6 Feeding given to the girls during infancy

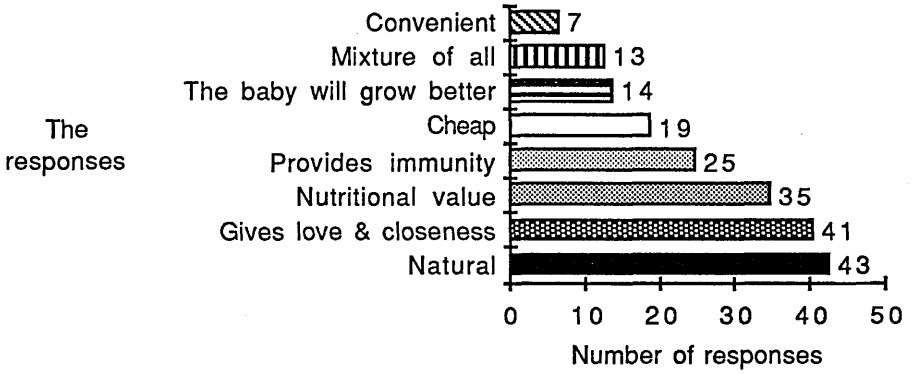


3-What do you think of breast feeding and why?

61(64%) girls thought that breast-feeding is a good thing while 6(6%) thought breast-feeding is bad practice and 28(29%) were uncertain.

Some of the girls who said 'Do not know', when they were asked their thoughts about infant feeding, responded to the next question 'Why is breast-feeding good practice'. Out of 64 girls who responded, 43(48%) thought breast-feeding was good because it was natural and 41(46%) said 'It gives the baby love and closeness' [Figure-7].

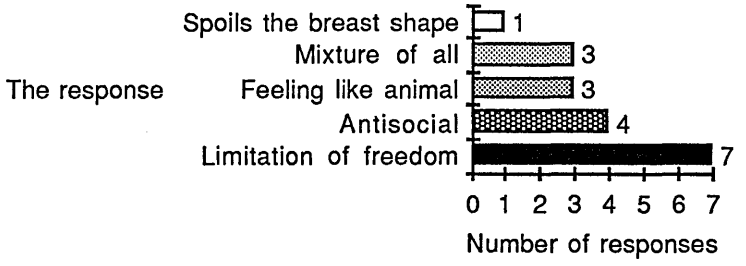
Figure- 7 Why breast-feeding is good



The total number of responses in figure-7 does not add up to 64 (no. of girls who gave an answer) because it was an open question.

Only 13 girls had responded to the question why they thought breast-feeding was bad [Figure-8].

Figure- 8 Why breast-feeding is bad



The total number of responses in figure-8 does not add up to 13 (no. of girls who gave an answer) because it was an open question.

IV-Knowledge about infant feeding:

1-The girls were asked if they had had any lessons in their school about infant feeding.

One girl did not respond, 5(5%) did not know and 77(82%) girls said they had not had any lessons about infant feeding in school.

2-Have you ever read, heard or seen anything about infant feeding?

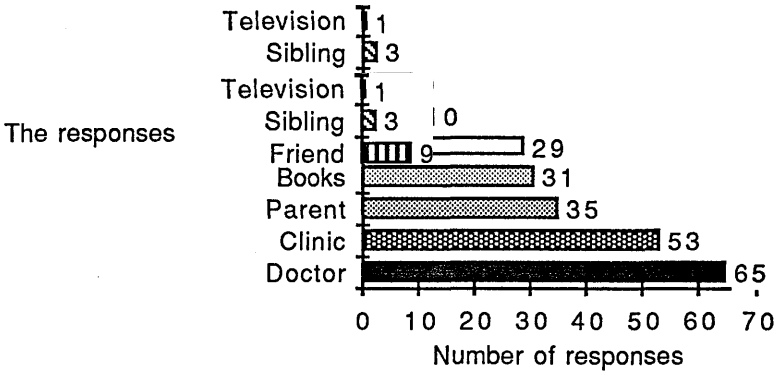
One girl did not give an answer to this question. The majority, 60(64%), had seen, heard or read material about infant feeding, 33(35%) had not come across any material about infant feeding and one girl could not remember.

3-Where would you look for information about infant feeding?

65(68%) girls would depend on their general practitioner in order to provide them with information on infant feeding, 53(56%) thought that the clinic would be their source of

information and 35(37%) said that they would obtain it from their parents [Figure-9].

Figure-9 Sources of infant feeding information

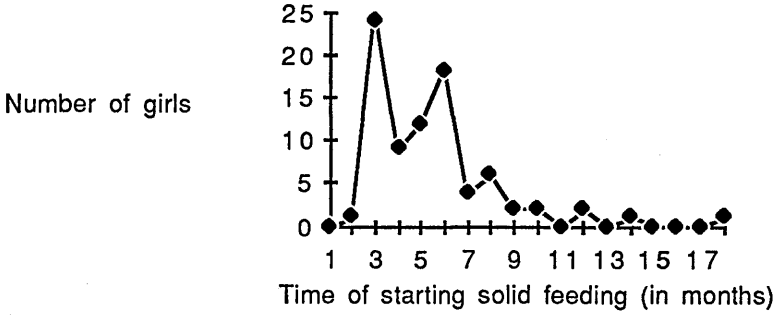


The total number of responses in figure-9 does not add up to 95 (no. of girls who gave an answer) because it was an open question.

4-<u>When should solid feeding be started?</u>

13(14%) girls were not sure about the time when a baby should begin solid feeding while the others gave responses ranging from 2 to 18 months. 24(25%) wished to start solid feeding when the baby was 3 months old but the average was 5.5 months; Standard Deviation 2.7 and median was 5 months [Figure-10].

Figure-10 When solid feeding should be started



5-<u>Types of solids given initially to the baby</u>.

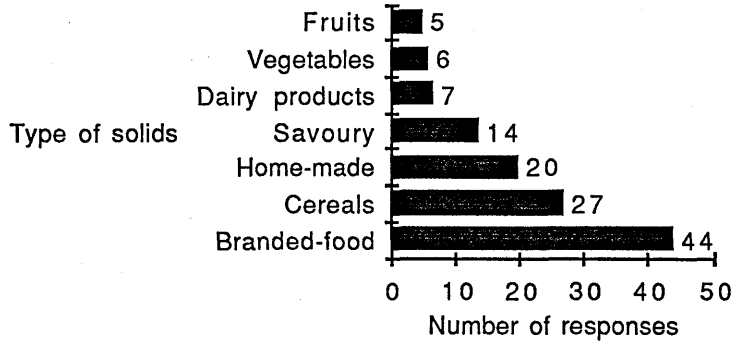
Since most girls suggested more than one kind of solid which they thought should be given initially to the baby, it was decided to consider only the first three solids mentioned.

The responses were grouped in 7 categories: the first was ready-made purchased commercially available baby-foods in jars or tins (Branded-foods); the second was savoury foods, including soup, egg, meat, fish and chicken. The next category was cereals and related products including biscuit, barley, wheat, bread and the others.

The fourth included dairy products, such as cheese and yogurt. The fifth was all kinds of vegetables. Fruit and fruit juices were in the sixth category and finally the home-made foods.

44(46%) prefered ready-made purchased baby-food, 27(28%) girls said they would start with cereals while 14(15%) said 'Do not know' [Figure-11].

Figure-11 Types of initial solids



The total number of responses in figure-11 does not add up to 95 (no. of girls who gave an answer) because it was an open question.

6-Why is solid food not given to the baby at a much younger age?

This, and the following question, were asked to reflect the girls' knowledge about solid feeding.

One girl did not respond. Of the remainig 94 girls, 13(14%) could not answer this question as they did not know the reason behind it.

The responses of the remaining 81 girls were categorized into 5 groups.

The first reason given by 16(17%) girls was related to physical problems, such as, 'Baby cannot swallow, chew or eat solids' and 'Baby may choke'.

The next group of reasons was related to the immaturity of the child. The majority, 48(51%) girls, gave this reason. Examples of the statements made are 'Baby and its organs not yet developed', 'Its stomach is too small and too delicate hence it cannot cope with solids' and 'Baby may not be able to digest solid food'.

In the third category, which accounted for 3(3%) girls, the reasons given related to medical problems, such as 'Solids would make the baby sick' and 'Baby does not need solid at this stage of life because it gets all essential nutrients from milk'.

Some reasons given were illogical, such as 'Baby has no teeth' and 'stomach or baby is weak'. 7 (7%) girls gave such reasons.

Finally 7(7%) girls gave mixtures of above mentioned reasons.

7-Why should solids not be delayed till a much later age?

4 girls did not respond; 38(42%) girls did not know the answer to this question.

Again the responses were grouped into 3 categories. The first was related to medical and nutritional problems such as 'Baby needs extra-nutrition for growth and to gain weight', 'Milk is not satisfying', 'Baby will be delayed in progress' and 'Body weight will not increase'. The answers in this group were given by 37(41%) girls.

14(15%) girls gave reasons relating to mechanical and physical problems, such as 'Baby will not get used to solids and their taste', 'May not learn to chew and swallow', 'The body will not get training in the digestion of solids', 'Teeth could irritate the mother's breast' and 'Baby will not learn to use utensils'.

Finally, a mixture of above reasons were given by 2 girls.

V-The girls' intentions:

1-Do you wish to have children in the future?

89 girls liked babies but 70(74%) girls would like to be mothers and have children. 8(8%) did not want parenthood and 17(18%) said 'Do not know'.

2-How would you like to feed your babies?

In addition to those who did not wish to have children, one other girl did not respond. 31(36%) were not certain and so said 'Do not know' [Table-3].

Feeding type	Number of girls
breast	16(18.6%)
bottle	29(33.7%)
both	10(11.6%)
don't know	31(36.0%)
Total	86(99.9%)

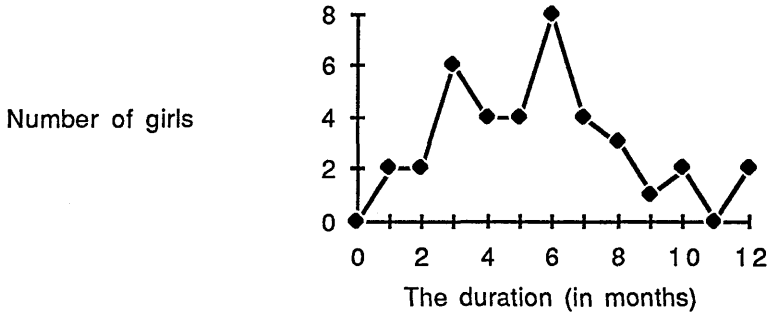
Table- 3 Type of feeding wished to be given to infant

3-For how long would you breast feed?

29 girls did not respond to this question and 30(45%) said 'Do not know'.

The responses of the remaining 36 girls ranged from 1 to 12 months. The average duration was 5.6 months; Standard Deviation was 2.8. Median was 5.5 [Figure-12].

Figure-12 Duration of breast-feeding



Summary:

A very poor response rate was obtained after sending the questionnaire to a selected number of girls (187 girls) but the number of respondent in each age group (15, 16 and 17) was more or less similar.

Although most girls belonged to lower social classes two-fifths came from social class 3 and the majority belonged to a small family consisting of 2 to 3 children.

Although the greatest number had taken responsibility, at some time in their life in looking after or feeding a child, their experience of breast-feeding was limited owing to the fact that only a few of them had a breast-feeding relative and neighbour or a breast-fed nephew and niece.

Those who had such near contacts had had little chance in observing them while they were being breast-fed.

Results suggest that the majority of girls' parents had little or no influence on the girls' decision on breast feeding, because most parents were neutral about breast-feeding and the majority of girls were bottle-fed during their infancy.

Most of the girls thought breast-feeding was preferrable and most said 'It is natural', 'Provided intimacy' and 'Its nutritionally superior'.

Limitation of freedom was the most important reason given by those girls who disliked breast-feeding.

The majority had some knowledge of infant feeding because they had seen, heard or read something about infant feeding.

Most thought that their general practitioner would be the best person from whom to obtain information.

Although the number of girls who wished to breast-feed was small, the majority were not certain for how long they would breast-feed.

The commercially available branded baby-food was the most popular kind of solid food that the girls would choose to wean the baby. One-quarter thought that 3 months was the appropriate time to start the baby on solids.

The immaturity of the baby was the reason given by the majority of girls for not starting solids at a much earlier age while medical, nutritional, mechanical and physical reasons were the main reasons given for not delaying foods until a much later age.

II-First stage - Phase 2 in Bahrain;

Since all the questions asked and all the grouping of responses were identical in both Glasgow and Bahrain, only the results will be given here without repetition of the explanations.

A random sample of one hundred girls from one of Bahrain's Secondary Schools were interviewed.

I-Social, demographic and personal data:

1-Age.

33(33%) of the girls were 15 years old, 35 were 16 and 32 were 17.

2-Level of education and occupation.

All the girls were still students in the secondary school.

Only one girl had a part-time job.

3-Place or residence.

95 lived with their parents and only 5 did not.

4-Social class level.

Since there is no official social class categorization of the population in Bahrain, it was difficult to group the girls in any sort of social classes. Hence the occupation of the father was grouped into 6 main 'classes' according to the similarities of jobs which they performed which are as follows:

1-executives such as diplomats, directors, managers, supervisors, chartered accountants, chief executives and an army colonel;

2-clerical workers such as teachers, salesmen, accountants, telex-operators, reporters, bankers, nurses, secretaries, cashiers and typists;

3-skilled and manual workers such as carpenters, drivers, farmers, mechanics, welders, electricians, machine-operators, masons, fishmongers, butchers, tailors, firemen, vendors, technicians and policemen;

4-employees such as waiters, technician assistants, labourers, helpers, office-boys, auxillary nurses, cleaners and car washers;

5-unemployed;

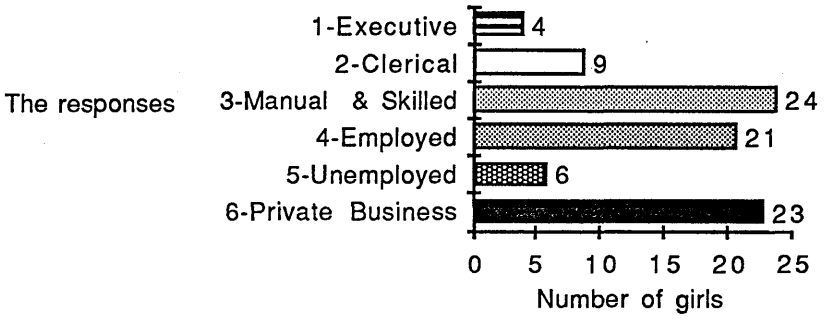
6-private business such as businessmen, building contractors, shop-keepers, cold store owners, brokers and dress material shop-keepers.

9 girls said 'Not applicable' which indicated that their fathers were dead.

The most commen type of fathers' occupation related to class 3. Only 4(5%) girls had

fathers in occupation class 1 [Figure-13].

Figure-13 Occupation of father



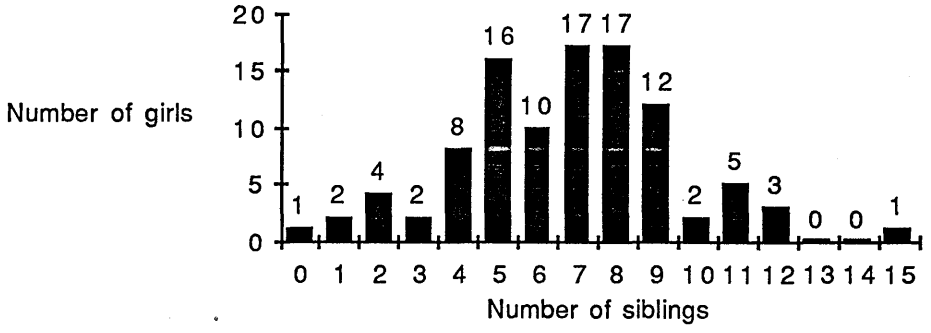
93(93%) of the girls' mothers were house-wives while only 3 mothers had jobs: one was a nurse, one was a seamstress and one was a labourer. The mothers of 4 girls were dead.

5-Number of siblings.

The number of siblings that the girls had ranged from 1 to 15. The mean was 6.8 and median 7. Only one girl had neither a brother nor a sister.

17 girls had 8 siblings, 17 had 7 and 12 had 9 [Figure-14].

Figure-14 Sibling numbers



6-The marital status of siblings and their family size.

Out of 54 girls who had a married sibling, 51(94.4%) had nephews or nieces.

II-Experience in infant feeding:

1-What type of feeding was given to your nephews and nieces?

Out of 51 girls, one did not know the type of feeding given to her nephew or niece; the majority, 38(74%), said their nephews or nieces were breast-fed and 15(29%) had a bottle-fed nephew or niece.

(The average number of breast-fed nephews or nieces for each of the 38 girls was 5 while there was one bottle-fed child for each of the 15 girls).

Table-4 Shows the number of girls in each type of feeding group given to the nephews and nieces. Please note that the total number does not add up to 53 because some girls had more than one nephew or niece.

Type of feeding	Number of girls
breast-feeding	38(74%)
bottle-feeding	15(29%)
both	6(12%)

Table-4 Type of feeding given to the nephews and nieces.

2-Have you ever been responsible for feeding or looking after a baby?

50% of the girls had taken responsiblity, at some time in their life, of looking after a young child and was involved in its feeding.

3-How often have you seen the parent feeding a baby?

47 girls had frequently seen their mother feeding their baby, 49(49%) had had this experience but not often and 4 said 'I have never seen a baby being fed'.

4-Have any of your relatives breast-fed her child? and if so, have you had the chance of observing them while doing so?

6 girls said 'Do not know'. Of 82 girls who had a breast-feeding relative, 18(22%) said 'Frequently', 53(65%) said 'Occasionally' and 11(13%) girls had never seen a relative feeding a child.

5-Have you any neighbours breast-feeding? If so, have you seen them feeding the baby?

46 girls did not know whether any of their neighbours were breast-feeding while of the 42 girls who had a neighbour who breast-fed 29(69%) had seen the baby being fed.

III-Attitude to infant-feeding:

1-The attitude of the girls' parents to breast-feeding.

One girl had no parents and 18 girls did not know what their parents' attitude was to breast-feeding.

Of the 81 girls who expressed their parents' definite view about breast-feeding, 80 said their parents encouraged breast-feeding and one had a parent who discouraged breast-feeding [Table-5].

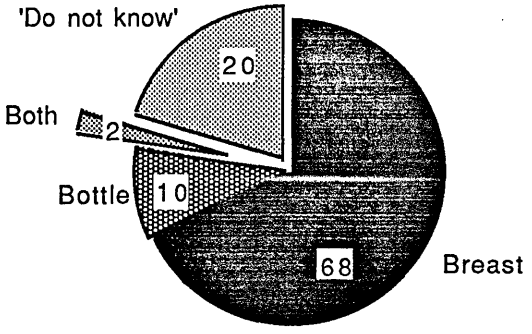
Parent's attitude	Number of girls
encouraged:	80(81%)
discouraged:	1(1%)
did not know:	18(18%)
Total	99(100%)

Table-5 The parent's attitude to breast feeding.

2-Type of feeding given to the girls when they were infants.

20 girls did not know the type of feeding offered to them during their infancies; 68(68%) were breast-fed, 10 were given bottle-feeding and 2 were offered both breast- and bottle-feeding [Figure-15].

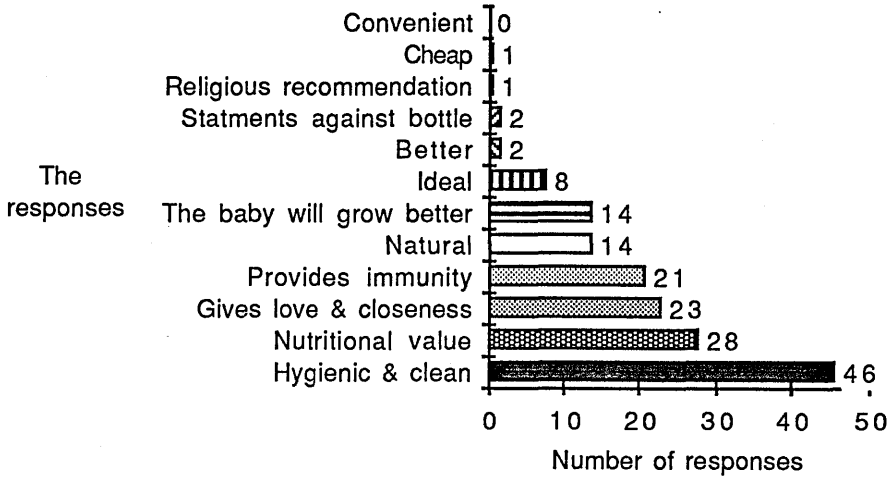
Figure-15 Type of feeding given to the girls during infancy



3-What do you think of breast-feeding and why?

All the girls thought that breast-feeding was good. The various reasons given by the girls are shown in Figure-16.

Figure-16 Why breast-feeding is good.



The total number of responses in the above figure does not add up to 100 because this was a multi-response question and the girls could give more than one response.

Surprisingly, none thought it was convenient.

Since all girls thought breast-feeding a good thing, none of them gave statements against it.

IV-Knowledge on infant feeding:

1-The girls were asked if they had had any lessons in their school about infant feeding:

2 girls could not remember whether any infant feeding lessons were given in school and 52(52%) said they had had such instruction. The remainder had not.

2-Have you ever read, heard or seen anything about infant feeding?

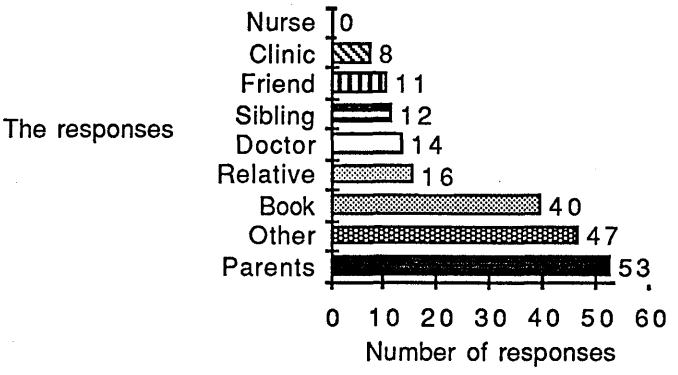
91(91%) girls had seen, heard or read material about infant feeding.

3-Where would you look for information about infant feeding?

53(53%) girls said that they would obtain information from their parents; 47 would depend on other sources of information such as television, radio, magazines, school, experienced people and health educators. 40 girls thought that books would be the best source [Figure-17].

The results showed that nurses were not thought a suitable source of information as no girl said that they would obtain information from a nurse.

Figure-17 Sources of information about infant feeding

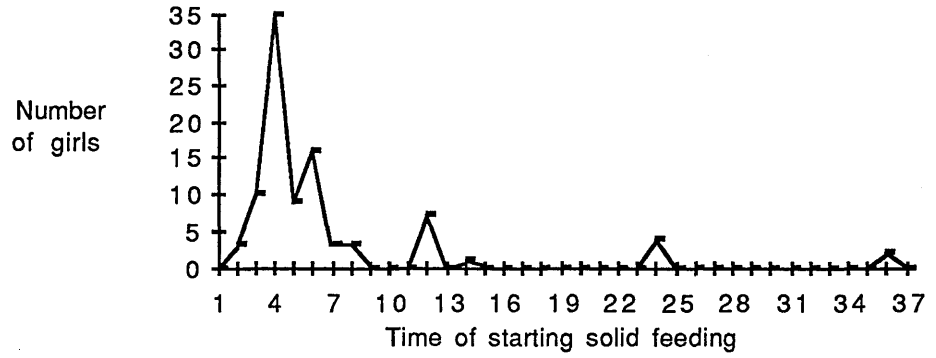


The total no. of responses in figure-17 does not add up to 100 because this was a multi-response question and the girls could give more than one answer.

4-When should the baby be started on solid feeding?

7 girls were not certain. The remaining 93 girls gave responses ranging from 2 to 36 months. The mean was 7 months; standard deviation was 6.3; median 4 . 45 (48%) girls would start solid feeding when the baby is 3 to 4 months of age [Figure-18].

Figure-18 Time of starting solid foods (in months)

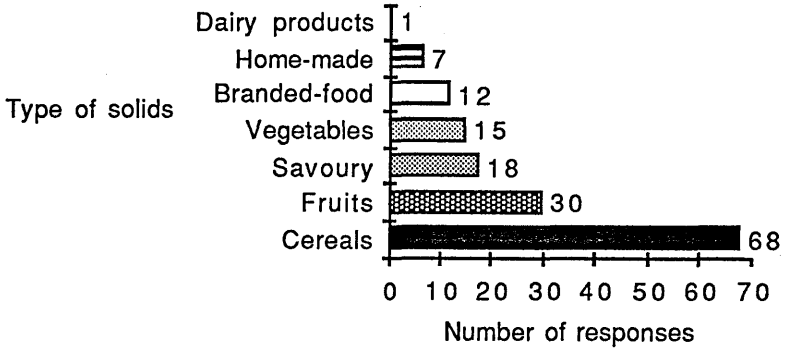


5-Type of solid foods to be given initially to the baby.

Since most girls mentioned more than three kinds of solids which they thought should be given initially to the baby, it was decided to consider only the first 3 solids that were mentioned.

6 girls were not certain about the kind of solid which should be used in weaning; 68 girls favoured cereals and 30 girls mentioned fruits as the first choice. Only one girl wished to start weaning with dairy products [Figure-19].

Figure-19 Type of initial solid foods to be given to the baby



The total no. of responses does not add up to 100 because this was an open question.

6-Why should solid food not be given to the baby at a much younger age?

14 girls did not know the answer to this question, 12(12%) girls gave reasons related to physical problems. The most common response, mentioned by 41(41%') girls, was reasons related to the immaturity of the baby. Reasons given by 16 girls were related to medical problems.

Illogical reasons, such as 'Baby has no teeth', 'May die' and 'Stomach is weak', were given by 5 girls and 12 gave mixtures of the above-mentioned reasons.

7-Why should solid food not be delayed till a much later age?

8 girls did not know the answer to this question.

78(78%) girls gave statements relating to medical and nutritional problems; 5 gave reasons relating to mechanical and physical problems; 7 gave reasons which were illogical and mixtures of above reasons were given by 2 girls.

V-The girls' intention:

1-Do you like babies? If so, do wish to have children in the future?

95(95%) girls liked babies while 5 did not.

93(93%) girls would like to have children, 4 did not like the idea of having children and 3 said 'Do not know'.

2-How would you like to feed your baby?

5 girls did not respond.

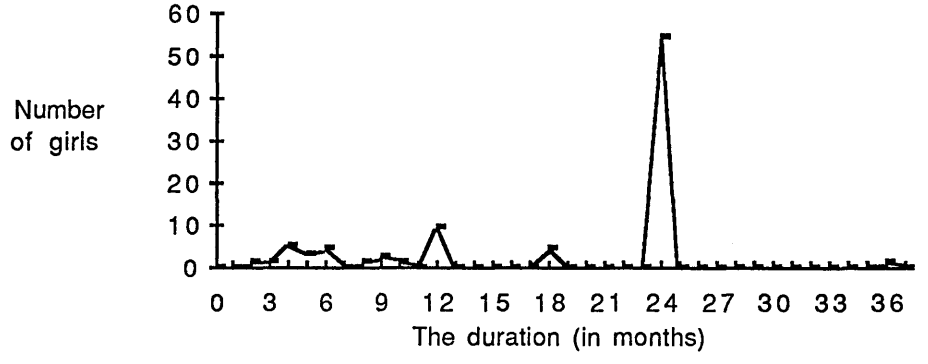
Of the remaining 95 girls, one said 'Do not know', 84(88%) wished to breast-feed and 10(10%) would give both breast- and bottle-feeding.

3-For how long would you breast-feed?

10 girls did not know the duration of breast-feeding that they would give and 4 would give breast feeding as long as it was required by the baby.

The responses of the remaining 86 girls ranged from 2 to 36 months. The majority, 54(54%) girls, wanted to breast-feed until two years. The mean duration was 19 months; median was 24 [Figure-20].

Figure-20 Duration of intended breast-feeding (in months)



Summary:

There was almost an equal distribution of the numbers of interviewed girls in each age group (15 to 17 years). All the girls except one, who had a part-time job after school hours, were students and almost all lived with their parents.

The girls belonged to extended families with a mean of seven siblings per girl of whom most

were married and had children.

The results suggest that most of the girls were familiar with infant feeding, especially breast-feeding, as reflected by the following findings;

A-the girls had a large number of breast-fed nephews and nieces and the majority had had the experience of seeing the babies while being fed.

B-most girls had been responsible at some time for feeding or looking after a baby.

C-the majority of girls who had a breast-feeding relative had had the chance of seeing the babies while being breast-fed.

D-again most girls had a breast-feeding neighbour and most had seen them doing so.

In addition, the majority of girls were offered breast-feeding during their infancy and had parents who encouraged breast-feeding.

Considering the mentioned factors, it was found that most girls thought that breast-feeding is superior and the majority wished to breast-feed their future babies up till a period of 24 months. Various reasons supported that desire amongst which "Breast milk has superior nutritional value" accounted for the highest percentage of responses. It was surprising to find that most of the reasons for the choice of breast-feeding were related to the child's benefit and none was related to the mother such as "Breast is convenient".

Most girls had some back-ground information on infant feeding which they had obtained from their school or as a result of personal interest.

In Bahrain, because a women is a member of a wider family, the majority of girls in this study said they would depend on their parent to provide them with extra-information on infant feeding. Health professionals and the clinics seemed not to be the best source of infant feeding information.

4 months was the commonest mentioned time for weaning the baby and cereals was the best food to start with. Most girls thought that solid foods should not be introduced early because of the immaturity of the baby while 'Medical and nutritional problems' was the commonest reason given against delaying the introduction of solids to a much later age.

II-Second stage, information from Primigravid women:

The aim of this stage was to collect information about infant feeding from primigravid patients on their first visit to the antenatal clinic, to find out their basic knowledge and attitude to infant feeding before they became influenced by any external factors such as contact with professional staff or other experiences related to the pregnancy itself.

For this purpose a structured questionnaire was designed which consisted of the following 5 sections:

1-social, demographic and personal data;

2-questions related to influences and experiences of infant feeding;

3-questions related to knowledge about infant feeding;

4-questions related to attitudes;

5-questions related to intention.

I-Phase 1 in Glasgow:

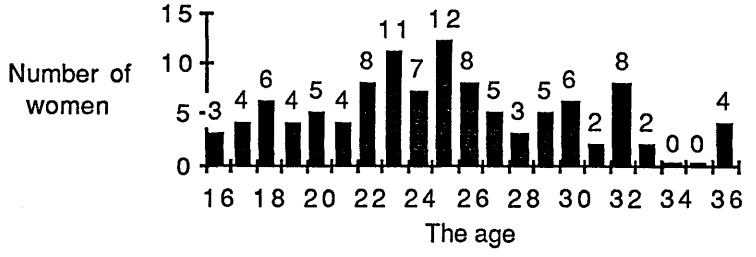
107 primigravidas were interviewed during a 3 months period in the Royal Maternity Hospital's antenatal clinic.

The following are descriptive details of the results obtained.

I-Social, demographic and personal data:

The age range of the 107 women was from 16 to 36. 46(43%) were between 22 and 25 years. The mean age was 25 years; standard deviation was 4.9 [Figure-21].

Figure-21 The age of women



75(72%) women had reached the secondary level of education only; 25(24%) had higher education with a degree and 4 had higher education without a degree; 3 women did not respond.

Of 107 women, only 39(38%) were smokers.

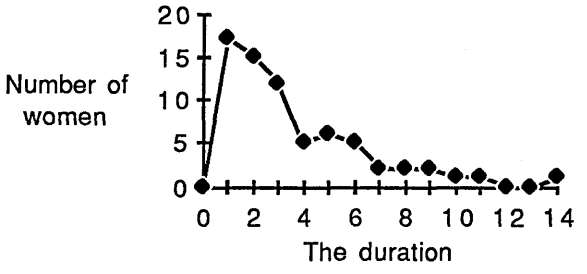
1-Marital status: duration of marriage and with whom the patient was living?.

69(64%) women were married at the time of their first pregnancy, 35(33%) were single, 2 separated and one divorced.

The duration of marriage ranged from 1 to 14 years with a mean of 3.6 years. Standard deviation was 2.8. [Figure-22].

17(25%) women had been married for just one year.

Figure-22 Duration of marriage



68 women lived with their husbands, 12 with partners, 17 with parents, 7 alone, one with a friend and 2 with relatives such as uncle or sister.

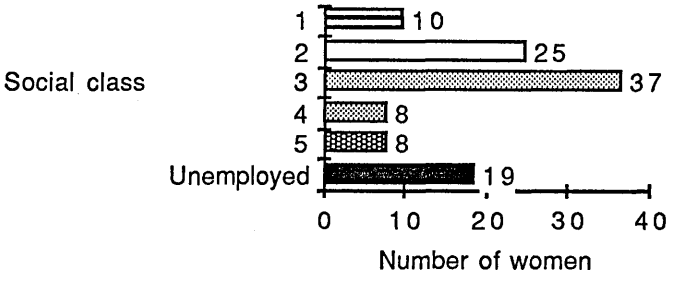
2-Occupation and social class.

Most women were working except for 7(6%) who were house-wives, 19(18%) who were unemployed and one who was a student.

For the purpose of social class classification the husband's occupation in the case of a married woman and the father's occupation if the woman was unmarried were considered.

There were 19 unemployed women who had neither a working husband nor a working father. They were classified as unemployed [Figure-23].

Figure-23 Social class

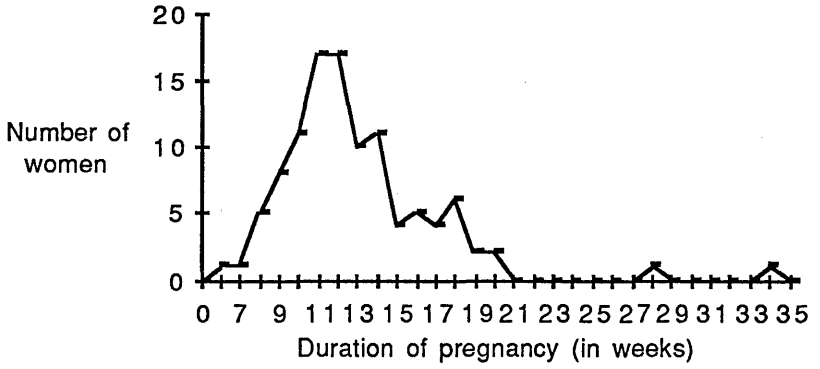


3-Duration of pregnancy at the time of interview (on first antenatal visit).

The duration of pregnancy for one woman could not be obtained while for the remainder the duration ranged from 6 to as high as 34 weeks with a mean of 13 weeks. Standard deviation was 3.9. Only one woman was 34 weeks pregnant.

The majority, 66(62%) women, were between 10 and 14 weeks of pregnancy [Figure-24].

Figure- 24 Duration of pregnancy

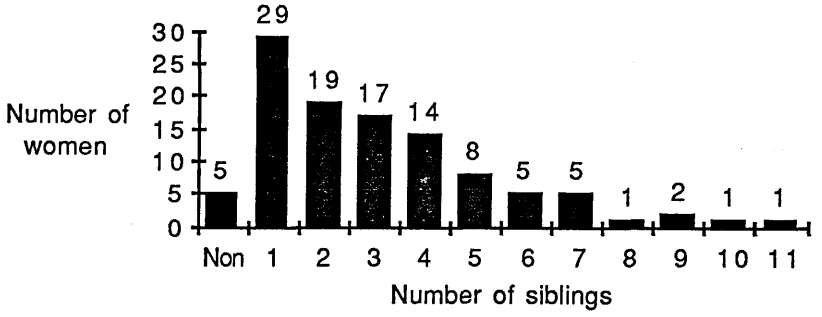


4-Number of siblings and their marital status.

5 women had no siblings while the remainder had between 1 and 11. 29(27%) women had one brother or sister; one woman had 11 siblings [Figure-25].

Of the 102 women with siblings, 67(66%) had a married brother or sister.

Figure-25 Number of siblings



II-Influences on and experience of infant feeding:

1-Type of feeding given to nephews and nieces.

Out of 67 women who had a married sibling, 63(94%) had nephews and nieces.

3 women did not know the type of feeding that had been given to their nephews or nieces while the majority, 37(59%), had a bottle-fed nephew or niece; 22(35%) had a breast-fed nephew or niece and one had a nephew or a niece who was given both breast- and bottle-feeding.

2-Influences of close contacts on the choice of infant feeding.

-i-On breast-feeding [Figure-26]:

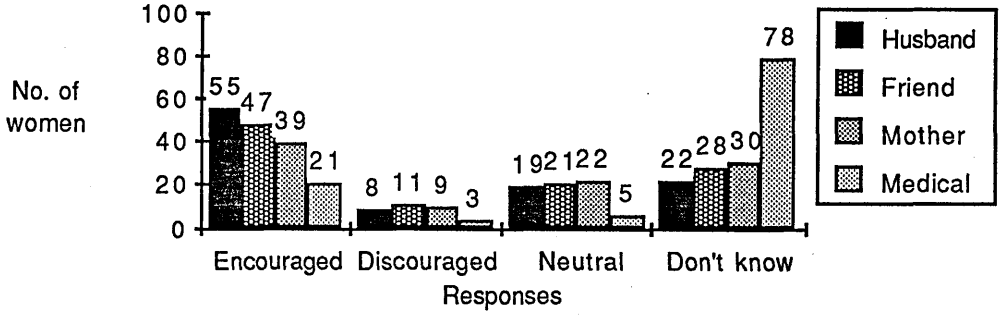
(a) Husband or partner: 55(53%) husbands or partners believed strongly that the woman should breast-feed while 8 discouraged breast-feeding; 3 did not respond;

(b) Closest female friend: 47(44%) women had friends who encouraged breast-feeding while 11 said their friends discouraged it;

(c) Mothers: the mothers of 39 women encouraged breast-feeding while 9 had mothers who discouraged it; 7 women did not respond.

(d) Medical adviser: 21 women thought their medical adviser encouraged breast-feeding. Only 3 said that their medical adviser did not recommend it.

Figure- 26 Close contact's influence on breast-feeding



-ii-On bottle-feeding [Figure-27]:

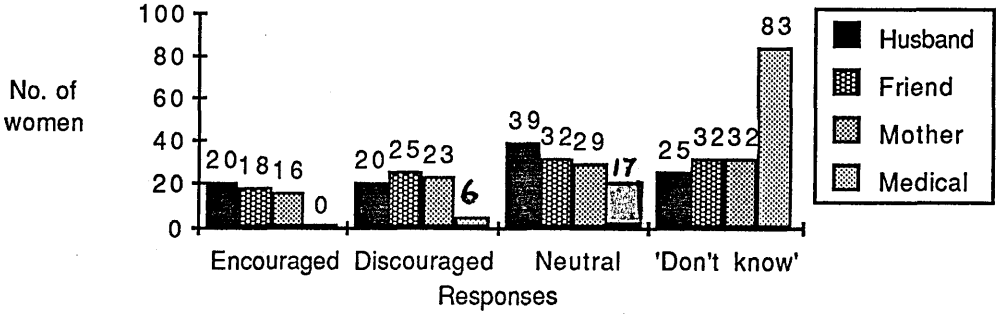
(a) 20(19%) women had husbands or partners who encouraged bottle-feeding and 20 had a discouraging husband/partner . 3 did not respond;

(b) Although 18 women had friends who encouraged bottle-feeding, 25 had friends who were against it;

(c) Mothers: 23 mothers discouraged bottle-feeding while 16 women had mothers who advocated artificial feeding; 7 women did not respond;

(d) Medical adviser: although none of the women said that their medical adviser encouraged bottle-feeding, 83 women did not know their medical adviser's attitude towards bottle-feeding; 1 woman did not respond.

Figure- 27 Close contact's influence on bottle-feeding



3-Who is going to help you with your baby?

The majority, 69(64%) women, said their husbands or partners would help them with the baby, 35(33%) said 'Parents and / or relatives' and 3 said they had nobody to help them.

III-Knowledge of infant feeding:

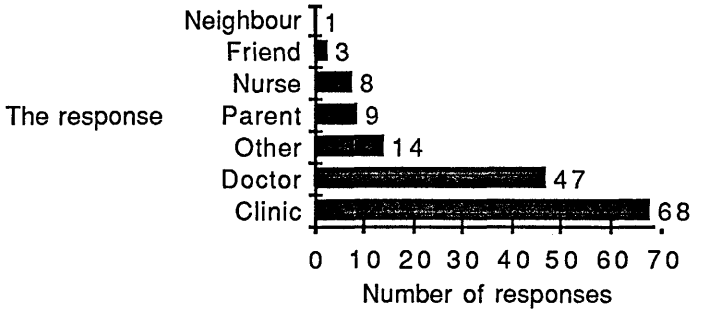
1-Infant feeding, information and sources.

83(78%) women had no information about infant feeding.

The majority, 68(64%) women, thought that the clinic would be the best place to obtain such information.

14(13%) women who stated 'Other' for source of information gave the following responses: books, leaflets, magazines, their local library or a relative such as a sister [Figure-28].

Figure- 28 Source of information about infant feeding



The total number in the above figure does not add up to 107 because it was a multi-response question.

2-What would you do if you thought your breast milk was not enough for the baby?

Out of 64 women (63 who would breast-feed and one who would give both breast- and bottle-feeding), 33(52%) said they would just start giving artificial formula to the baby, 25(39%) would consult their doctor or a health visitor and 3 would take advice from their parents; the remaining 3 did not know what to do.

3-Do you think that artificial formula is sufficient for the baby's growth ?

Out of 40 women (39 who would bottle-feed and one who would give bottle- and breast-feeding) one did not respond; the majority, 32(82%), thought bottle-feeding was enough for the baby's growth, one woman said 'No' and 6(15%) were not certain.

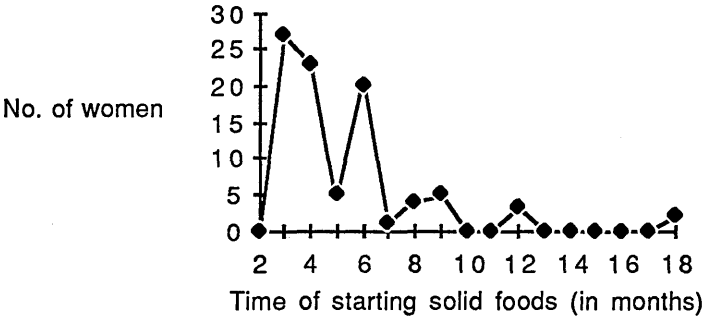
4-When should solid feeding be started?

One woman did not respond and 16(15%) said 'Do not know'.

The remainder gave responses ranging from 3 to 18 months with an average of 5.4 months. Only 2 women would give solid foods at 18 months [Figure-29].

The commonest time of weaning, as stated by 27(25%) women, was 3 months.

Figure-29 Time of starting solid feeding



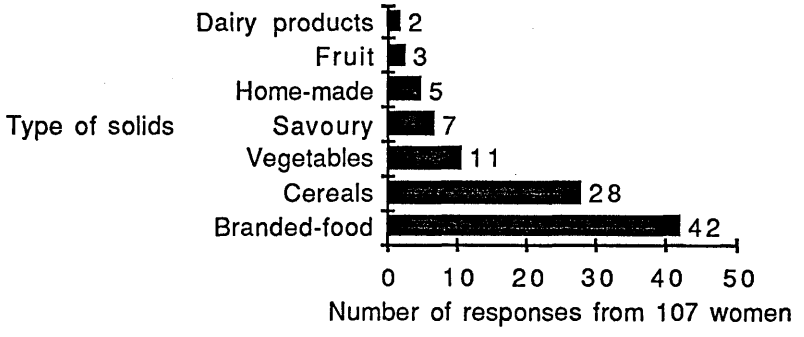
5-Type of solid foods which should be given initially to the baby.

Most women gave more than three choices of solids with which they would start weaning their baby. Hence, it was decided to consider only the first 3 types of solids that were mentioned.

18(17%) women had no idea about the kind of solid foods that they would give initially to their baby.

42(39%) women preferred to start weaning their infants with the branded commercially-available ready-made baby-food in tins or jars while 28 selected cereals [Figure-30].

Figure-30 Type of solids to be started initially



The total number in the above figure does not add up to 107 because it was a multi-response question.

6-Why should solid foods not be started at a much earlier age?

Reasons given were arranged into 4 groups, as already explained on page(98).

10 women did not know the answer to the question while the commonest reason for not starting solid foods at an earlier age was 'The baby is still too young and its organs have not yet developed hence the baby would not be able to digest solid foods properly' [Table-6].

Reasons	Number of women
Physical problems	25(23.4%)
Immaturity	47(43.9%)
Medical and logical	11(10.3%)
Illogical reason	5 (4.7%)
Mixture of above	9 (8.4%)
'Do not know'	10(9.3%)
Total	107(100%)

Table-6 Why solids should not be given early.

7-Why should solid foods not be given to the baby at a much later age?

19 women said 'Do not know' and 69(65%) gave reasons related to medical and nutritional problems that the baby could acquire if weaning was delayed to a late age [Table-7].

Reason	Number of women
Medical & nutritional	69(64.5%)
Mechanical & physical	13(12.1%)
Mixture of above	6(5.6%)
'Don't know'	19(17.8%)
Total	107(100%)

Table-7 Reasons for not delaying the introduction of solids

IV-Attitudes to infant feeding:

1-The husband's or partner's attitude to infant feeding.

One women did not respond.

Out of 106 women, 49(46%) had husbands or partners who preferred breast-feeding and 22(21%) had husbands or partners who preferred bottle-feeding; 35(33%) did not know their husband's or partner's attitude.

2- Parents' attitude to infant feeding.

One women did not have a parent.

30(28%) women did not know, 44(41%) said their parents encouraged breast-feeding and 27(25%) had parents who encouraged bottle-feeding [Table-8].

Parents' attitude	No. of women
Encouraged breast-feeding:	44(41.5%)
Discouraged breast-feeding:	2(2.0%)
Encouraged bottle-feeding:	27(25.0%)
Neutral:	3(3.0%)
'Do not know':	30(28.0%)
Total	106(100%)

Table-8 Parents' attitude to infant feeding.

The following 4 questions were asked of the 64 women (63 who wished to breast-feed and one who would give both-feeding).

3-Are there any special foods that you should take during pregnancy in order to increase your breast-milk later on?

50(78%) said that there are special foods which should be taken during pregnancy, 5(8%) said there were none, and 9(14%) said 'Do not know' .

Examples of the food which should be consumed during pregnancy were foods rich in protein such as meat, fish, chicken, liver and kidney; dairy products like cheese and milk; vegetables such as potato; cereals; fruits; fluids such as water and Iron Bru drinks, and food rich in calcium, vitamins, iron and fibre.

4-Foods that should be taken during the feeding period post-delivery.

15(23%) said 'Do not know', 9(14%) thought that there were no such special foods, and 40(62%) thought that there were some special foods to be consumed after the baby's birth, such as high protein foods like meat, fish, liver, kidney and eggs; food rich in carbohydrate such as bread; food rich in iron and calcium; plenty of fluids and some said "Healthy, balanced, sensible and high calorie diet".

5-Any special food to be avoided during pregnancy?

58(91%) women said 'Yes', 3(5%) said none was to be avoided and 3(5%) did not know. Most women agreed on the type of food which should be avoided, such as chilli and spicy food; greasy and fatty food; processed and fried food; microwave food and gas-producing food; chocolate, biscuits, chips, alcohol and caffeine: Surprisingly, some thought that the juice of citrus fruits such as orange juice should be avoided. Carbohydrates, sweets and drugs should also be avoided.

6-Any special foods to be avoided during the post-delivery feeding period?

48(75%) women thought that there are foods which should not be taken during infant feeding; 5(8%) said there were none to be avoided and 11(17%) did not know.

Examples of the foods mentioned were greasy, unhealthy, processed, starchy, fatty, spicy, gas-producing foods and foods which hurt the baby; carbohydrates, peas and sugar, sweets, cakes and crisps. Surprisingly some women thought that lemonade, orangeade and orange should be avoided during the feeding period.

Finally some women mentioned drugs and laxatives.

V-The women's intentions regarding infant feeding:

1-Did the women plan their pregnancy beforehand?

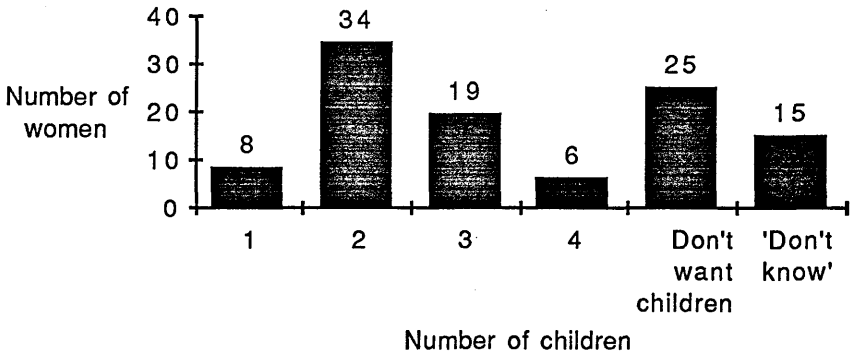
65(61%) women said they had planned their pregnancy while 42(39%) had not.

2-How many children do you intend to have?

25(23%) did not wish to have another child and 15(14%) did not know. The remaining 67 women wanted to have between 1 and 4 children. The mode was 2 children, 34(32%) wanted to have 2 more children [Figure-31].

The average number was two children per women.

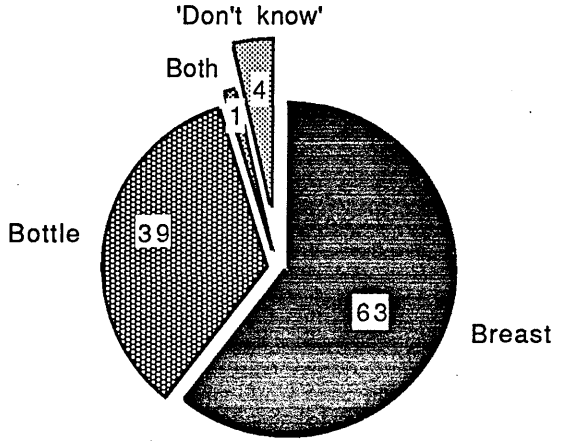
Figure-31 Number of wanted children



3-How do you intend to feed your baby?

The majority, 63(59%) women, wished to breast-feed [Figure-32].

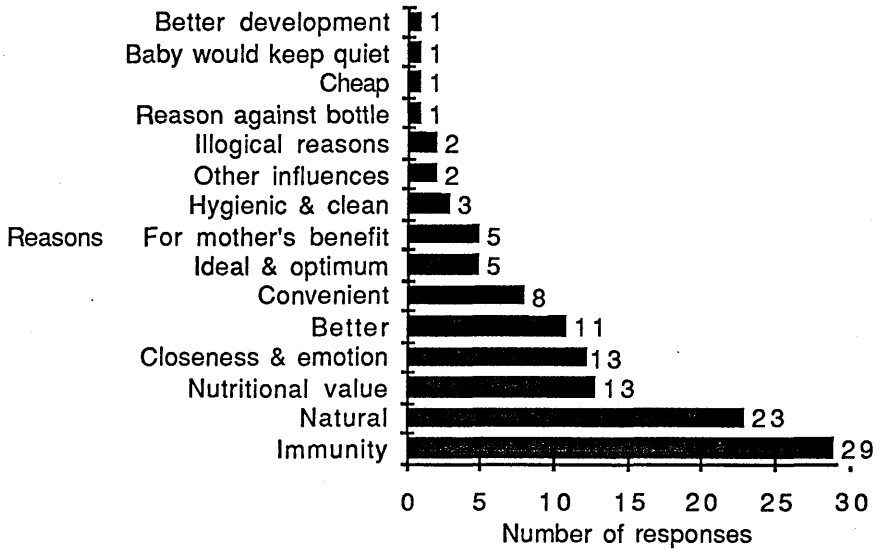
Figure-32 Type of feeding intended to give



4-Why did you choose to breast-feed?

Out of 64 women (63 who would breast-feed and 1 who would offer breast- and bottle-feeding), 29(45%) said they would give breast-feeding because it would give immunity to the baby. Only 2(3%) did not know why they chose breast-feeding [Figure-33].

Figure- 33 Reasons for choosing breast-feeding

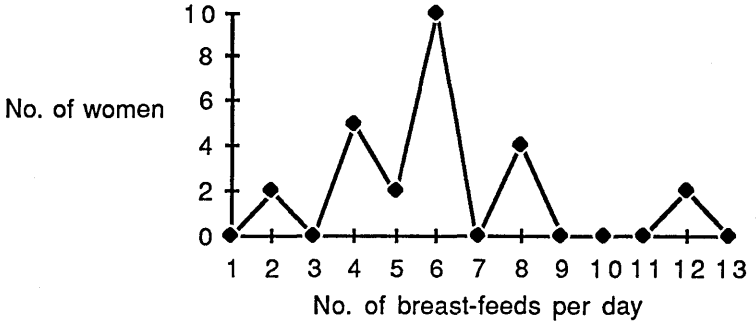


The total number figure-33 does not add up to 64 because it was an open question.

5-How often would you breast-feed?

21(33%) women were not certain about the number of breast-feeds that should be given each day to the baby. 18(28%) intended to breast-feed on demand while the remaining 25 women gave responses ranging from 2 to 13 with an average of 6 feeds per day [Figure-34].

Figure-34 Frequency of breast-feeding per day

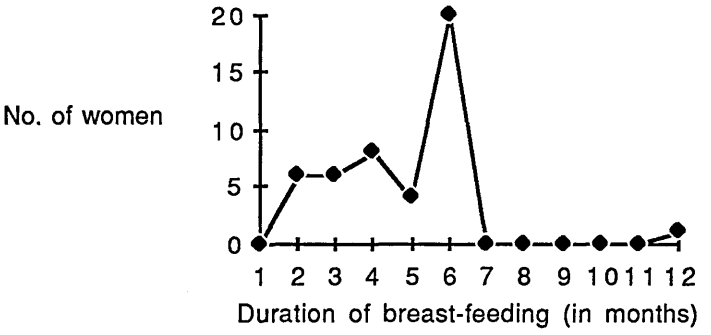


6-For how long do you intend to breast-feed?

When the women were asked how long should breast-feeding go on, 9(14%) did not know, 10(16%) said they would breast-feed as long as it was required by the baby and 45 women suggested from 2 to 12 months.

Only one woman wished to breast-feed her baby until it was one year old [Figure-35].

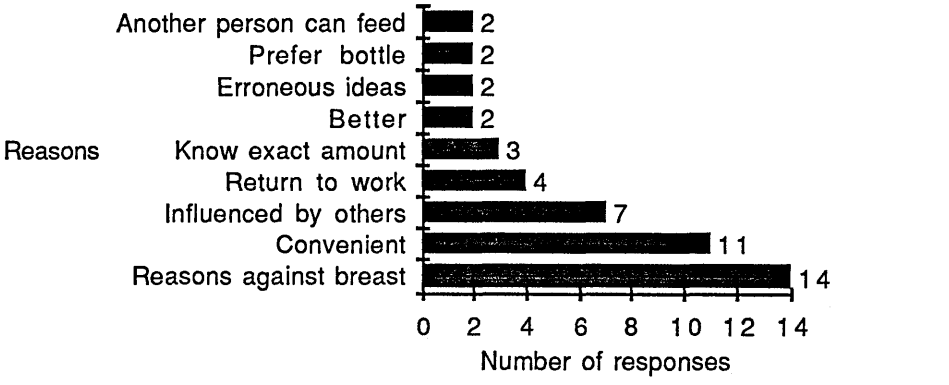
Figure-35 Duration of breast-feeding



7-Why did you choose to bottle-feed your baby?

Out of 40 women (39 who would give bottle-feeding and one who would give bottle- and breast-feeding), 14(35%) defended themselves by giving reasons condemning breast-feeding while 4 said 'Do not know' [Figure-36].

Figure-36 Reasons given for choosing bottle-feeding



The total number in figure-36 does not add up to 40 because it was an open question.

Summary:

Most of the women were young. The commonest age range was between 22 and 25 and most had had secondary school education only. About one-third were smokers.
Although the women came from all social classes the majority were from social class 2 and 3; most of them belonged to small families with an average of 1 to 3 siblings.

Though most women had some sort of knowledge of infant-feeding, the majority had experience only with artificial-feeding because their nephews and nieces had been bottle- and not breast-fed.
The results showed that close contacts such as husbands or partners, mothers and close female friends were influencial on the feeding method chosen by these women; although most tended to encourage breast-feeding, there were a few who strongly advocated bottle-feeding and some advised against breast-feeding.

The majority of women did not know their medical-adviser's views about infant feeding, a fact which might indicate that the medical advisers, at that stage of pregnancy, had no influence on the future choice of feeding methods.

Two-thirds of the women, at the beginning of their pregnancy, had no information about infant feeding and the majority said that they would obtain it from the clinic. There was a small number of primigravidas who thought that their parents would be a good source of information about infant feeding.

The majority had planned their pregnancy and most intended to have more than two children.
Although one-third of the women wished to bottle-feed, most of the remainder opted to breast-feed. Of those women who would breast-feed 'Breast-feeding on demand' was the commonest response given when asked about the number of breast-feeds per day while most wished to breast-feed for six months; most of the women would bottle-feed immediately, if they thought that their breast milk was not enough for the baby.
'Immunity provided to the baby' was the commonest reason given by the women when asked to give their reasons for choosing breast-feeding.

The majority thought that special foods should be consumed during pregnancy and post-delivery to help to increase their breast milk later on. However most women thought that certain foods should be avoided during both pregnancy and the post-delivery period.
Of those who would bottle-feed most gave statements against breast-feeding as an excuse for not breast-feeding.

Most thought that the commercially-available ready-made baby-food was the best type of solid feeding which the baby should be given initially.
Although most women gave good and logical reasons for not starting solids at a very early age and for not delaying it to a much later age, most wanted to wean their babies after 3 months of age.

II-Second stage - Phase 2 in Bahrain:

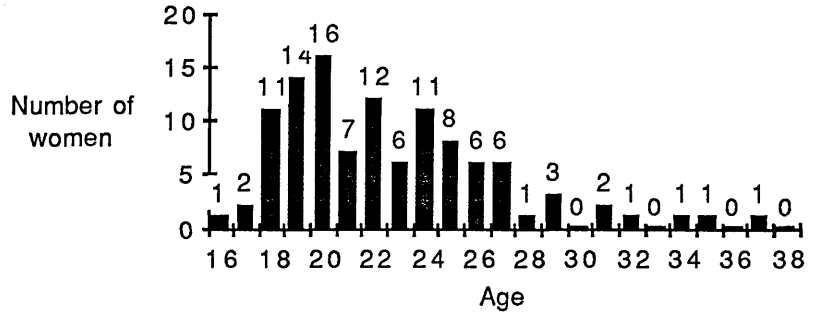
110 primigravid patients were interviewed in 7 Health Centres in Bahrain during a 13 week period.

I-Social, demographic and personal data:

Smoking was not a significant factor since only two women smoked.

The age of the women ranged from 16 to 37 years with a mean of 22.5 years; the standard deviation was 4 ; mode 20. The majority, 60(54%) women, were between 18 and 22 years of age [Figure-37].

Figure-37 Age of women



52(47%) women had received secondary education, 4 were illiterate and 24(22%) had had higher education [Table-9].

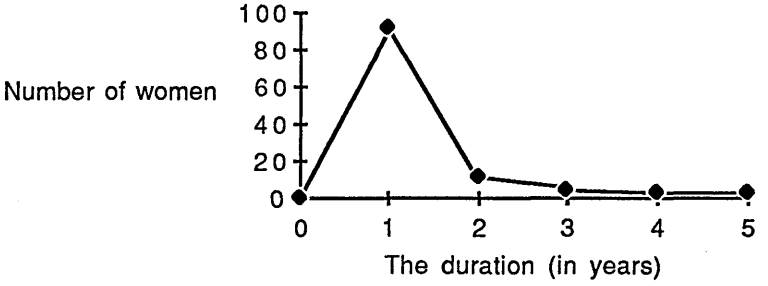
Level of education	Number of women
Illiterate	4(3.6%)
Able to read and write	4(3.6%)
Primary and intermediate	26(23.6%)
Secondary	52(47.3%)
Higher education with degree	20(18.2%)
Higher education no degree	4(3.6%)
Total	110(99.9%)

Table-9 Level of education

1-Marital status and duration of marriage.

Not surprisingly, all the women were married and the majority, 91(83%), had been married for a year or less; 11(10%) women had been married for two years [Figure-38]. All the women lived with their husbands.

Figure-38 Duration of marriage



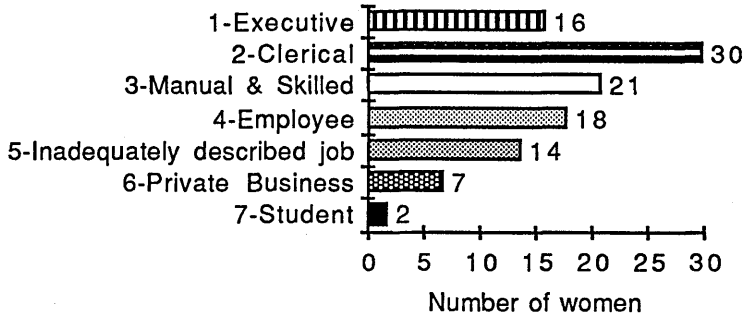
2-Occupation and social class.

Since there is no social classification in Bahrain, the husbands' occupations were arranged into 7 groups (see page 102).

One woman did not respond and surprisingly one did not know her husband's occupation; 17(13%) did not give precise details of their husband's jobs, therefore it was considered as 'Inadequately described job'.

The commonest husbands' occupation, as mentioned by 30(27%) women, related to group 2 [Figure-39].

Figure-39 The husband's occupation



When asked about their own occupation, 27(24%) women had a job, 7(6%) were students and the remainder were house-wives [Table-10].

Occupation	Number of women
Educational programmer	1(1.0%)
Teacher, nurse or clerical worker	19(17%)
Auxiliary nurse or helper	5(4.5%)
Student	7(6.4%)
Inadequately described job	2(2.0%)
House-wife	76(69%)
Total	110(99.9%)

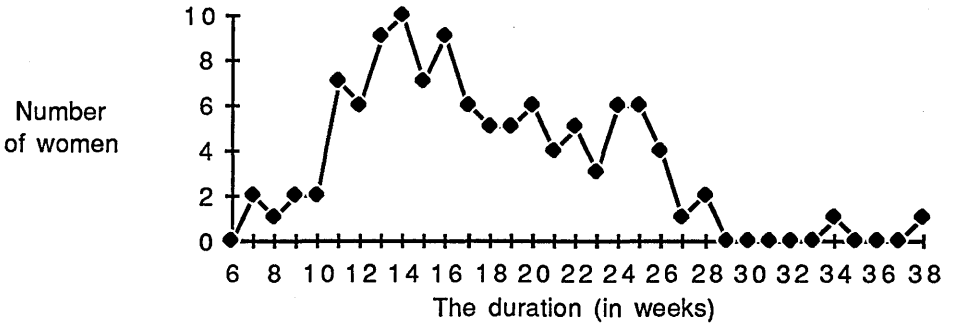
Table-10 The occupations of women

3-Duration of pregnancy on the first visit to the antenatal clinic.

The duration of pregnancy on the first antenatal visit ranged from 7 to 38 weeks. The

mean duration was 17.6 weeks; standard deviation 5.7; mode 10 [Figure-40].

Figure-40 Duration of pregnancy



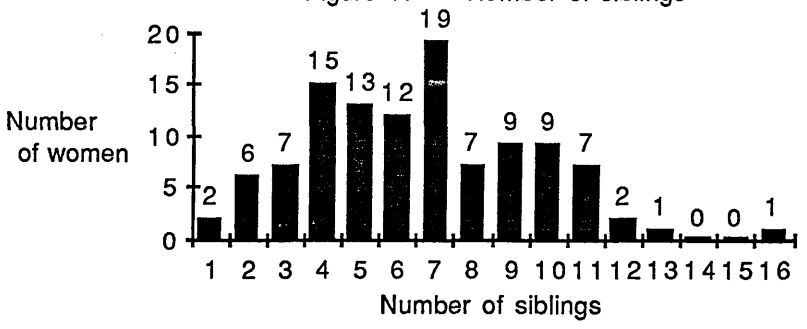
4-Number of siblings and their marital status.

The majority of women came from extended families where the number of siblings ranged from 1 to 16 with a mean of 6; mode was 7 .

The majority, 59(54%) women, had between 4 and 7 siblings [Figure-41].

87(80%) women had a married sibling.

Figure-41 Number of siblings



II-Experiences of and influences on infant feeding:

1-Type of feeding given to the nephews or nieces.

Of the 87 women who had a married sibling, 82(94%) had nephews or nieces. 39(48%) women had a breast-fed nephew or niece; 18(22%) had each one bottle-fed; the nephews or nieces of 19(23%) women were given both-feeding. 6(7%) women said 'Do not know'.

2-Influence of close contacts on the choice of infant feeding.

-i-Influence on breast-feeding [Figure-42]:

(a) husband: one women did not respond; 84(77%) had husbands who encouraged breast-feeding;

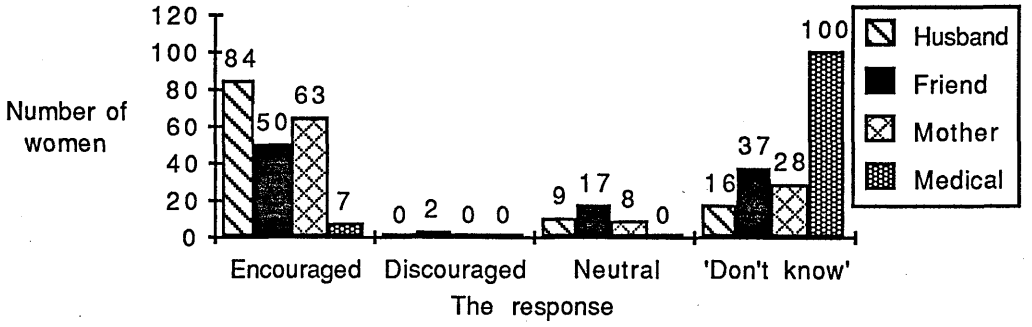
(b) close female friend: 4 women did not respond while 50(47%) had friends who

encouraged breast-feeding and 2 discouraged it;

(c) mother: 11 women did not respond; the majority, 63 mothers, encouraged breast-feeding but none discouraged it;

(d) medical adviser: 3 women did not respond; only a small number of women had medical advisers who encouraged breast-feeding while the remainder (100 women) said 'Do not know' .

Figure-42 Close contacts' influence on the choice of breast-feeding



-ii-Influence on bottle-feeding [Figure-43]:

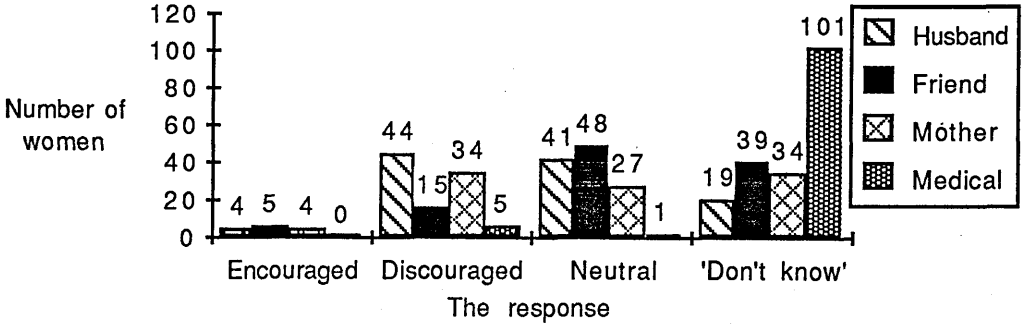
(a) husband: two women did not respond; 44(41%) had husbands who discouraged bottle-feeding while only 4 husbands encouraged it;

(b) close female friend: 3 women did not respond; 48(45%) friends were neutral about bottle-feeding;

(c) mother: 11 women did not give an answer to this question; the mothers of 34(34%) women discouraged bottle-feeding;

(d) medical adviser: 3 women did not respond while the majority, 101(94%), said 'Do not know'.

Figure-43 Close contacts' influence on the choice of bottle-feeding



3-Who is going to help you with your baby?

Out of 110 women, the majority, 70(64%), said their families would help them, 28(25%) the husband, 7(6%) said nobody would help them and one woman said 'Home-maid'; 4 did not know who would aid them.

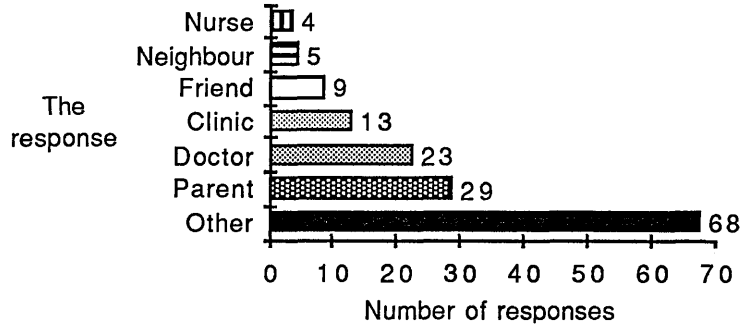
III-Knowledge about infant feeding:

1-Infant feeding: information and its source.

41(37%) women had some sort of information and knowledge about infant feeding while the remainder had no such information.

The majority, 68(62%) women, would depend on other sources such as books, television, radio, health education department and experienced people to secure information about infant feeding [Figure-44].

Figure-44 Sources of information about infant feeding



The total in tha above figure does not add up to 110 because it was a multi-response question.

2-What would you do if you thought your breast milk was not enough for the baby?

Out of 108 women (97 who wished to breast-feed and 11 who would give breast- and bottle-feeding), 38(35%) would consult their doctor or the child welfare clinic if they thought their breast milk was not sufficient; 13(12%) said 'Do not know' and 10 women would take some other action such as "Eat more nutritious high calorie food', 'Try to find out the reason for deficiency of breast milk' and 'Start solid feeding' [Table-11].

The response	Number of women
Consult doctor:	38(35.2%)
Start bottle-feeding:	36(33.3%)
Advice from parents or relatives:	9(8.3%)
Take other measures:	10(9.2%)
Mixture of above reasonss	2(2.0%)
Don't know:	13(12%)
Total	108(100%)

Table-11 Action done if breast milk was thought insufficient.

3-Do you think that artificial formula is sufficient for the growth of your baby?

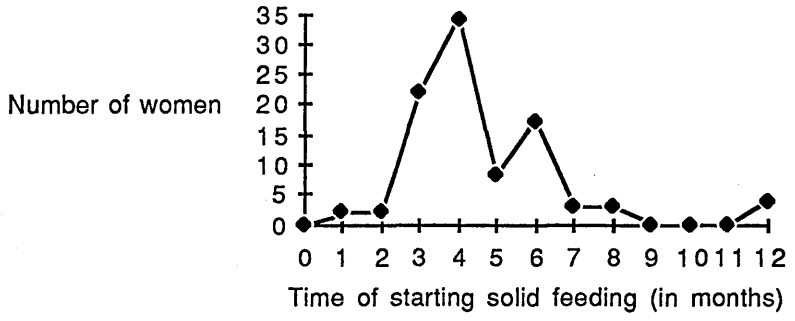
Out of 12 women (one who would bottle-feed and 11 who would give bottle- and breast-feeding), 2 did not respond, 3 said 'Yes', 3 said 'No' and 4 did not know.

4-When should the baby be started on solid feeding?

The responses ranged from 1 to 12 months. 34(31%) women preferred to wean their

babies at 4 months of age. 15 said 'Do not know' [Figure-45].

Figure-45 Time of starting solid feeding to the baby

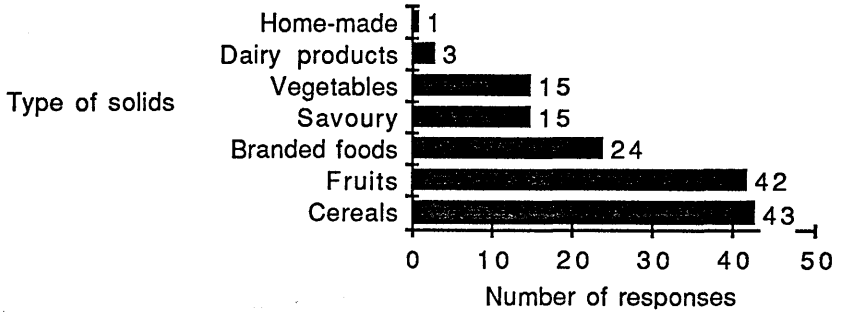


5-Type of solid feeding to be given initially to the baby.

Since most of the women gave more than 3 responses, it was decided to consider only the first three that were mentioned.

14(13%) women did not know what kind of solid foods to start their baby on while 43(39%) would give cereals; fruit and fruit juices came next and accounted for 42(38%) responses [Figure-46].

Figure-46 Type of solid foods to be started initially



Since it was an open question the total number of responses in the above figure does not add up to 110.

6-Why should solid food not be given to the baby at a much earlier age?

The commonest answer to this question, as given by 54(49%) women, related to the immaturity of the baby, such as 'Organs not yet developed' [Table-12].

Similar kinds of questions were grouped in the previous stage (see page 98).

Response	Number of women
Immaturity	54(49.1%)
Physical	16(14.5%)
Medical & logical	6(5.5%)
Illogical	1(0.9%)
Mixture of above reasons	8(7.3%)
'Don't know'	25(22.7%)
Total	110(100%)

Table-12 Reasons given for not starting solids at a very early age.

7-Why should solid foods not be given to the baby at a much later age?

31(28%) women did not know the answer to this question while the majority, 63(57%), gave responses related to medical and nutritional problems that the baby could acquire if solids were delayed for a longer time [Table-13].

Similar kinds of questions were grouped in previous stage (see page 98).

Responses	Number of women
Medical & Nutritional	63(57.3%)
Mechanical & Physical	13(11.8%)
Mixture of above	3(2.7%)
'Don't know'	31(28.2%)
Total	110(100%)

Table-13 Reasons given for not delaying the solid foods to a very late age.

IV-Questions related to attitudes:

1-The husbands' attitude to infant feeding.

One woman did not respond. 12(11%) women said 'Do not know'.

The majority, 93(85%), had husbands who preferred breast-feeding while 4 husbands liked both breast- and bottle-feeding.

2-The parents' attitude to infant feeding.

18(17%) women did not know their parents' attitude to infant feeding, 86(80%) had parents who preferred breast-feeding, 3 parents preferred both-feeding and one preferred bottle-feeding; two women did not respond.

The following 4 questions were asked of 108 women (97 who would breast-feed and 11 who would give breast- and bottle-feeding).

3-Are there any special foods or drinks that you should take during pregnancy which could help in increasing your breast milk in the future?

The majority, 73(68%) women, thought that there were special foods to be consumed during pregnancy; 8 said 'No' and 27(25%) did not know.

Examples of the foods which should be consumed during pregnancy were sweets, honey, chocolate; rice, sesame, biscuits, fava beans; vegetables such as tomato, leafy vegetables and green salads; bananas and grape juice; foods rich in protein such as meat, liver, fish and eggs; dairy products such as yogurt, milk and cheese; food rich in calcium, iron, vitamins and salts and fluids.

4-Are there any special foods or drinks which should be taken during the feeding period post-delivery ?

11(10%) said 'No', 39(36%) did not know and 58(55%) said there were special foods to be taken post-delivery such as sweets and honey; rice; vegetables such as tomato, salads and leafy vegetables; protein such as meat and fish; fruits and their juices; milk and cheese; food rich in calcium, vitamins, iron and salts and some mentioned 'Healthy and fatty foods'.

5-Any special foods or drinks to be avoided during pregnancy?

61(56%) thought that there were some special foods which should be avoided during pregnancy, 16(15%) said 'No' and 31(29%) did not know.

Foods to be avoided during pregnancy were such as chilli, spicy food and pickles; sour drinks such as lemon; beverage drinks, tea, coffee, excessive water and alcohol; salty and greasy foods; excessive carbohydrate and sweets; broad beans and canned foods; fish, chicken and prawn; dates. Smoking and drugs were also among the things which should be avoided.

6-Any special foods or drinks which should be avoided during the post-delivery feeding period?

40(37%) women said 'Yes', 13(12%) said 'No' and 55(51%) did not know.

Examples of the foods mentioned were chilli and pickles; sour drinks, bitter orange, alcohol, coffee, tea, and lemon; lentil seeds and papaya fruit; fish, prawn, chiken and meat; greasy and gas-producing foods and milk.

V-The women's intentions regarding infant feeding:

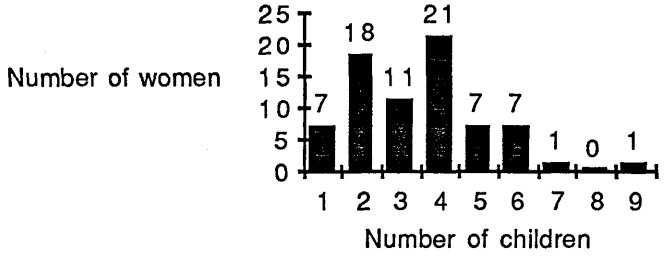
1-Did you plan this pregnancy?

32(29%) women had planned their life and prepared themselves to be pregnant, 77(70%) said 'No' and one woman said 'Don't know'.

2-How many children do you intend to have?

37(36%) women could not say how many children they intended to have. The number of children wanted ranged from 1 to 7 children. The average number of children was 3 [Figure-47].

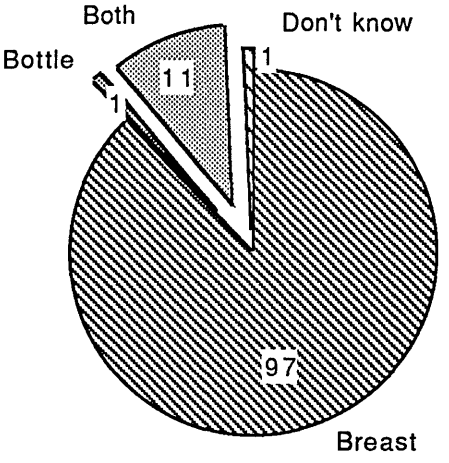
Figure-47 Number of children wanted



3-How do you intend to feed your baby?

The majority, 97(88%) women, intended to breast-feed and 11(10%) would give both (breast- and bottle-feeding) [Figure-48].

Figure-48 Type of feeding to be given to the baby



4-Why did you choose to bottle-feed?

Out of 12 women (one who would bottle-feed and 11 who would give bottle- and breast-feeding), 6 said 'I think breast milk is not enough'; 2 did not know;

one gave a social reason such as 'Mother will be free to do other things'; one woman would go back to her job and one woman gave a statement against breast-feeding; one did not respond.

5-Why did you choose to breast-feed?

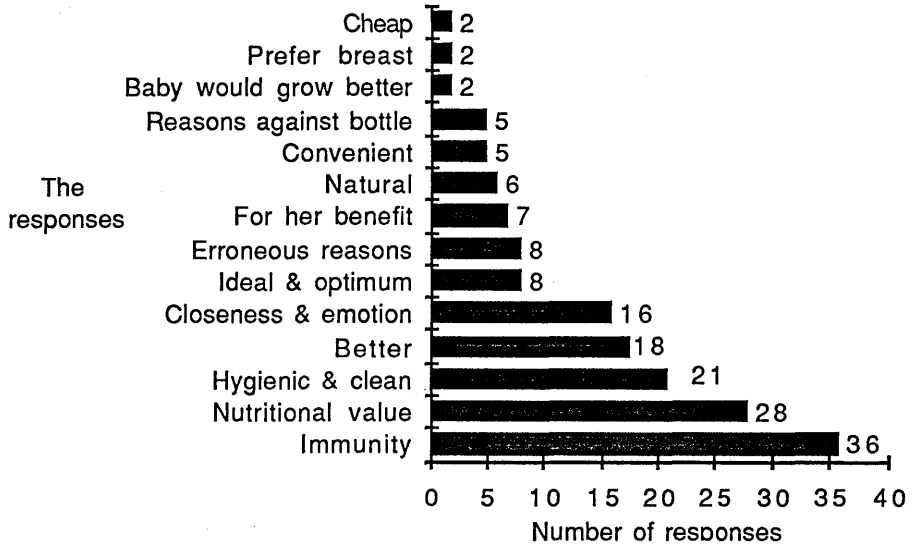
Out of 108 women (97 who would breast-feed and 11 who would give breast- and bottle-feeding), two did not respond and 10(9%) said 'Do not know'.

Of the remainder 96 women, the majority gave more than 3 responses and so it was decided to consider only the first three reasons that were mentioned. 36(34%) women would give breast-feeding because it would provide immunity to their babies [Figure-49].

Example of illogical reasons that were mentioned are 'The baby would grow faster',

'Breast milk is stronger' and 'Cancer of the breast may develop if breast-feeding were not given'.

Figure-49 Reasons given for choosing breast-feeding

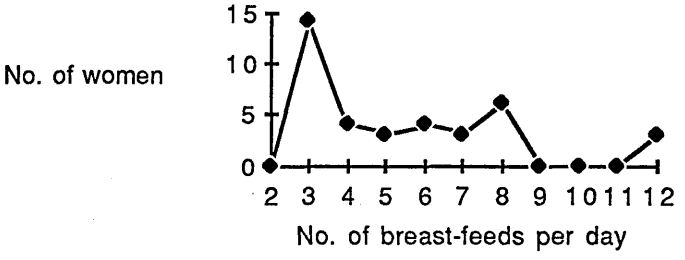


The total number in the above figure does not add up to 108 women because this was an open question.

6-How often would you breast-feed?

Out of 108 women (97 who would breast-feed and 11 who would give breast- and bottle-feeding), 54(50%) said 'Do not know' and 17(16%) would give breast-feeding on demand. The remaining 37 women wanted to give 3 to 12 breast-feeds per day [Figure-50].

Figure-50 Frequency of breast-feeding per day



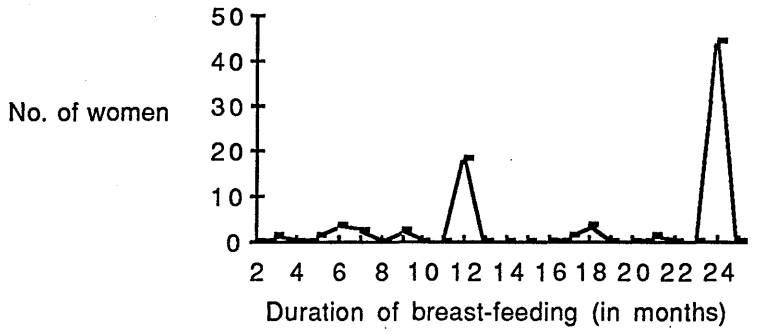
7-For how long do you intend to breast-feed?

Out of 108 women (97 who would breast-feed and 11 who would give breast- and bottle-feeding), 76(70%) gave responses ranging from 3 to 24 months but the commonest duration of breast-feeding, as mentioned by 44(41%) women, was 24 months; 23(21%) women said 'Do not know'.

Of the 9 women who gave open answers, 5 gave 'mother-related' statements such as 'I will breast-feed as long as I can' and 'It depends whether I am going to get pregnant or

not' and 4 women gave 'baby-related' statements such as 'As required by baby' and 'I will breast-feed till milk stops' [Figure-51].

Figure-51 Duration of breast-feeding



Summary:

All the 110 interviewed women were married and were living with their husbands. The majority, who were between 18 and 22 years of age, had secondary education only and were house-wives.

Most of the women became pregnant within the first year of their marriage and the majority came from large families.

Although some women had experience in bottle-feeding, the majority of their nephews and nieces were breast-fed and most came from a background which not only influenced breast-feeding but encouraged it as well.

Despite the fact that most of the women's close contacts such as husband, mother and friend encouraged breast-feeding, only a few such contacts preferred bottle-feeding.

The majority of the women at the beginning of their pregnancies did not know their medical adviser's views on infant feeding.

Although about only one-third had some knowledge about infant feeding the majority of women stated that they would depend on reading articles, watching television, listening to radio or relying on experienced people in order to have more information.

Although the majority preferred to entirely breast-feed their babies, most of the remainder wanted to give both breast- and bottle-feeding.

'Breast milk will provide immunity to the babies and protect them from illnesses' was the commonest reason given by most of the women for choosing to breast-feed.

Most wished to breast-feed for as long as two years and most would consult and take advice from their doctors before taking any other action if they thought that their breast milk was not

sufficient for the baby.

The majority of the women showed their belief in some cultural taboos: They stated that certain foods should be taken or avoided during pregnancy and during the post-delivery feeding period.

Despite the fact that only one-third of the women planned their pregnancy, most wanted to have between 2 and 4 children.

There was a similarity among the women's attitudes to solid feeding. Most thought that cereals were the best type of solid food to be given initially to the baby and 4 months was the commonest age when weaning should be started.

III-Third stage, information from Primigravid women a few weeks before their deliveries:

At this stage of the study information was collected from the same primigravid women, interviewed in the previous stage, a few weeks before their expected dates of delivery. The questionnaire used was more or less similar to that questionnaire used in the previous stage of the study (stage 2).

The aim behind choosing this period of the patient's life for collecting information has been explained in the section 'Materials and Methods'.

I-Phase 1 in Glasgow:

Out of 107 women to whom questionnaires were posted, 89(83%) responded; 4 had aborted during pregnancy and 14(13%) failed to respond despite two reminder letters being sent to them after their addresses had been checked afresh.

Of the 89 respondents, 57(64%) replied immediately after receiving the questionnaire, 29(33%) responded only after the first reminder letter and 3 women had to be reminded twice.

I-Social and personal data:

1-Smoking.

Out of 89 women 31(35%) were still smoking by this stage of pregnancy.

2-Marital status and place of residence.

68(76%) women were married, 16(18%) single, 2 separated and one divorced; 2 did not respond.

Out of 89 women, the majority, 66(74%), lived with their husbands, 7(8%) with a partner, 7 with parents, 3 with relatives and 6 women lived alone.

II-Influence on and experience of infant feeding:

1-Influence of close contacts on the choice of infant feeding.

-i-Influence on breast-feeding [Figure-52]:

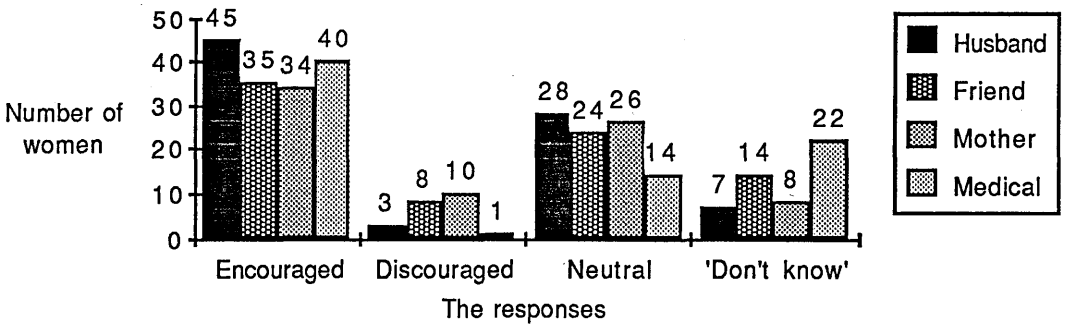
(a) husband or partner: 6 women did not respond; 45(54%) had husbands or partners who advocated breast-feeding while 3 discouraged it;

(b) close female friend: 8 women did not respond; 35(43%) women had friends who encouraged breast-feeding but 8 discouraged it and 24(30%) were neutral;

(c) mother: the mothers of 34(44%) women encouraged breast-feeding while 10(13%) mothers discouraged it; 11 women did not respond to this question;

(d) medical adviser: the medical adviser of 40(52%) women encouraged breast-feeding but one said her medical adviser did not recommend it; 12 women did not respond.

Figure-52 Close contact's influence on the choice of breast-feeding



-ii-Influence on bottle-feeding[Figure-53]:

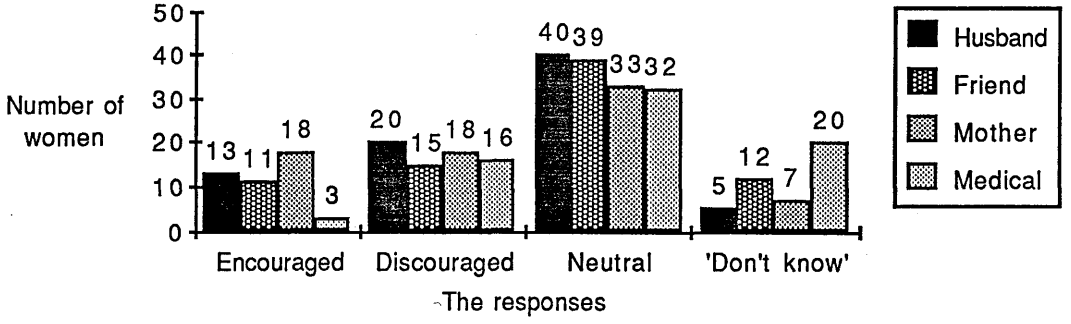
(a) 13(17%) women had a husband or a partner who encouraged bottle-feeding while 20(26%) discouraged it; 11 women did not respond;

(b) although 11(14%) women had friends who encouraged bottle-feeding, 15(19%) had friends who did not recommend it; 12 women did not respond;

(c) mother: the mothers of 18(24%) women advocated bottle-feeding while another 18 mothers did not recommend it; 13 women did not respond;

(d) medical adviser: 18 women did not respond; The medical advisers of only 3 women encouraged bottle-feeding and 32(45%) women thought their medical advisers were neutral about bottle-feeding.

Figure-53 Close contact's influence on the choice of bottle-feeding



2-How was your pregnancy?

One woman did not respond.

The majority, 67(76%) women, had had trouble-free pregnancies but 21(24%) faced various problems such as severe sickness, heartburn, nausea and vomiting; urgency

and urinary tract infection; tiredness, sciatica and pubic pain; oedema and high blood pressure; breech lie and threatened abortion; viral respiratory infection and constipation; one patient had a fibroid.

3-Who is going to help you with your baby?

The majority, 45(51%) women, thought that their parents or relatives would help them with the baby; 41(46%) said their husbands or partners would aid them; 2 had nobody to help them and one woman said 'Do not know'.

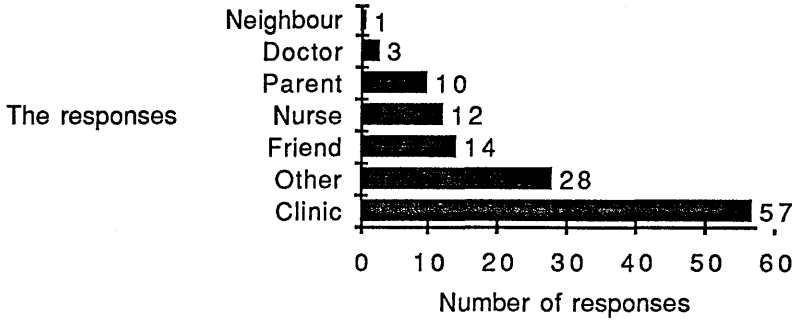
III-Knowledge about infant feeding:

1-Infant feeding: information and sources.

When the women were asked whether they had found any information about infant feeding 2 did not respond, 8 said 'No' and 79(91%) women had obtained such information.

The majority, 57 women, said that they had obtained the information about infant feeding from the clinic; 28 secured their information from other sources such as book, magazine, leaflet, literature or family members; 3 women did not respond to this question [Figure-54].

Figure-54 Sources of information about infant feeding



Since it was a multi-response question, the total numbers of responses in the above figure does not add up to 86 (number of women who gave an answer).

2-What would you do if you thought your breast milk was not sufficient?

Out of 49 women (40 who would breast-feed and 9 who would give breast- and bottle-feeding), 32(65%) said 'I would consult my medical advisers', 10(20%) would just start or continue giving bottle-feeding, 5 said 'First I would take advice from my doctor, then will start bottle-feeding'; one would approach her parents and the health visitor for advice and one woman said 'Do not know'.

3-Do you think that artificial formula is sufficient for the growth of your baby?

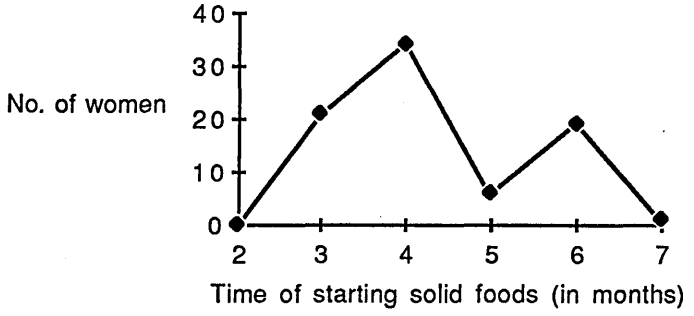
Out of 48 women (39 who would bottle-feed and 9 who would give bottle- and breast-feeding), 2 women did not respond; the majority, 40(87%), thought that it would be sufficient but 4 said it was not and 2 did not know.

4-When would you start solid feeding to your baby?

One woman did not respond; three women gave open answers such as 'It depends on the baby' and 'If bottle was not enough'. Since those responses were not explicit they were considered to be 'Do not know'. Hence the total number of women who did not know when to start solid feeding was 7.

The remainder of the women gave responses ranging from 3 to 7 months. 34(39%) women thought that 4 months was the best time for weaning while 21(24%) thought that weaning should be started at 3 months [Figure-55].

Figure-55 When should solid feeding be started

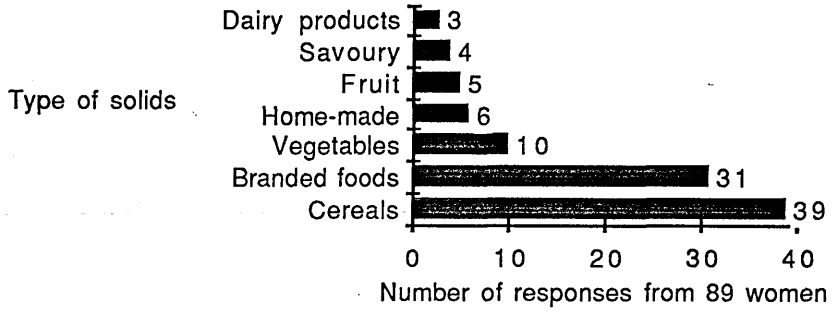


5-Type of solid foods which should be given initially to the baby.

Most women gave more than three choices of solid foods with which they would start weaning their baby. Only the first 3 choices that were mentioned were considered.

Cereals were the most popular solid food, as mentioned by 39(44%) women, to be given initially to the baby. 31(35%) women preferred the branded ready-made baby food and 16(18%) said 'Do not know' [Figure-56].

Figure-56 Types of solids to be started initiall



The total number of responses does not add up to 89 because it was an open question.

6-Why should solid food not be started at a much earlier age?

Reasons given for this and the next question were arranged into 4 groups, as already explained on page 98.

One woman did not respond; the majority, 50(57%), gave reasons related to the immaturity of the baby, such as 'organs not fully developed', for not starting solid foods at a very early age [Table-14].

Reasons	Number of women
Physical problems	6(7.0%)
Immaturity	50(57%)
Medical and logical	12(14%)
Illogical reason	3(3.0%)
Mixture of above	4(4.0%)
Don't know	13(15%)
Total	88(100%)

Table-14 Reasons for not starting solid foods early.

7-Why should solid foods not be given to the baby at a much later age?

4 women did not respond; the majority, 47(55%), gave reasons related to medical and nutritional problems that the baby could acquire if weaning was delayed to a very late age [Table-15]

Reasons	Number of women
Medical & nutritional	47(55%)
Mechanical & physical	8(9.0%)
Mixture of above	4(5.0%)
Don't know	26(31%)
Total	85(100%)

Table-15 Reasons for not delaying the introduction of solid foods.

IV-Attitudes to infant feeding:

1-The husband's or partner's attitude to infant feeding.

Out of 86 women, 41(48%) had husbands or partners who preferred breast-feeding, 19(22%) liked bottle-feeding and the husbands or partners of 8(9%) women preferred both (breast and bottle-feeding); 15(17%) had husbands or partners who had no preferrence; 3 women did not know the attitude of their husbands or partners. 3 women did not respond.

2-The parents' attitude to infant feeding.

One woman did not have a parent and one did not respond.

Out of 87 women, 17(19%) did not know, 35(40%) said their parents encouraged

breast-feeding and 18(21%) had parents who preferred bottle-feeding[Table-16].

Parents' attitude	No. of women
Encouraged breast-feeding:	35(40%)
Discouraged breast-feeding:	5(6%)
Encouraged bottle-feeding:	18(21%)
Encouraged both:	12(14%)
Don't know:	17(19%)
Total	87(100%)

Table-16 Parents' attitude to infant feeding.

The following 4 questions were asked of 49 women (40 who would breast-feed and 9 who would give breast- and bottle-feeding).

3-Were there any special foods or fluids that you have taken during pregnancy in order to increase your breast milk later on?

15(31%) said that there were special foods that they had consumed during pregnancy, 23(47%) had taken none and 11(22%) said 'Do not know'.

Examples of the special foods which had been eaten during pregnancy were milk; fruit; vegetables; soup; pudding; food rich in protein such as meat; food rich in vitamins; excess fluids and water and 'Healthy and balanced food'.

4-Foods or fluids that should be taken during the feeding period post-delivery.

16(33%) thought that there were no such special foods, 4 said 'Do not know' and 29(59%) thought that there were special foods to be consumed after the baby's birth, such as juices and plenty of other fluids and water; food rich in protein such as egg, meat and fish; dairy products such as milk and cheese; vegetables and fruits; food rich in carbohydrate, calcium and iron; high calorie foods and, as some women said, 'Healthy well-balanced foods'.

5-Any special foods or fluids avoided during pregnancy?

One woman did not respond; 5 women could not remember and said 'Do not know'.

5 women said 'No' and the majority, 38(79%), said that they had avoided certain foods during pregnancy such as spicy and acidic foods; fries and fatty foods; sweets, too much sugar and excessive carbohydrate; drugs, alcohol. Some said 'Only an excessive amount of alcohol'.

6-Any special foods or fluids to be avoided during the post-delivery feeding period?

One woman did not respond.

42(87%) women thought that there are foods which should not be taken during infant feeding; 3(6%) said there were none to be avoided and 3(6%) did not know.

Examples of the foods mentioned were excess carbohydrate, chocolate and sweets. The majority said alcohol and spicy foods. One-third of the women said orange and orangeade should be avoided during the post-delivery feeding period and some said ginger, acidic foods and gas-producing foods; other citrus fruits and too much fruit; coffee; food that might upset the baby and laxative foods and medications.

7-Did you have to prepare your breasts during pregnancy for feeding later on?

Out of 49 women (4o who would breast-feed and 9 who would give breast- and bottle-feeding) , the majority, 29(59%) said 'No', 17(35%) had prepared their breasts and 3 were not certain.

8-Where would the baby sleep?

The majority, 60(67%) women, preferred to keep their baby's cot in their rooms, 10(11%) said 'For a few weeks in my room and then in a separate room', 18(20%) wanted their baby to sleep in a different room and there was only one woman who liked to have her baby not only in the same room but in the same bed.

V-The women's intentions regarding infant feeding:

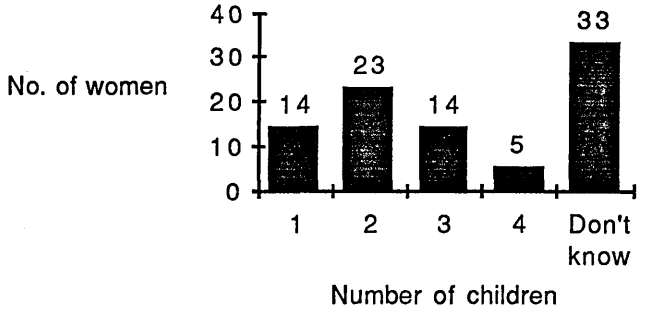
1-Did you plan your pregnancy ?

59(66%) women said 'Yes', 28(31%) said 'No' and two did not know.

2-How many children do you intend to have?

33(37%) women were not certain while the remaining 56 women wanted to have 1 to 4 children. The commonest number of wanted children was 2 [Figure-57].

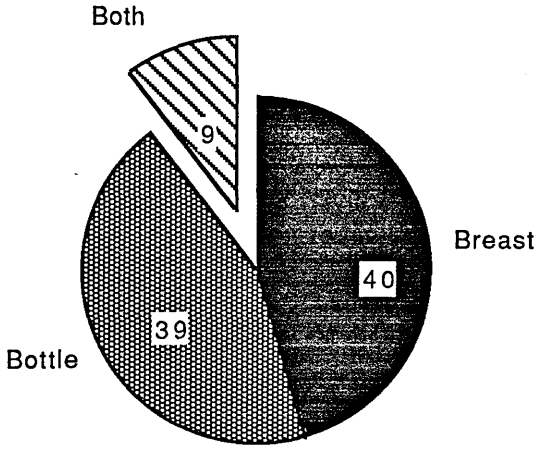
Figure-57 Number of wanted children



3-How do you intend to feed your baby?

One woman did not respond and out of the remaining 88 women, 40(45%) wished to breast-feed [Figure-58].

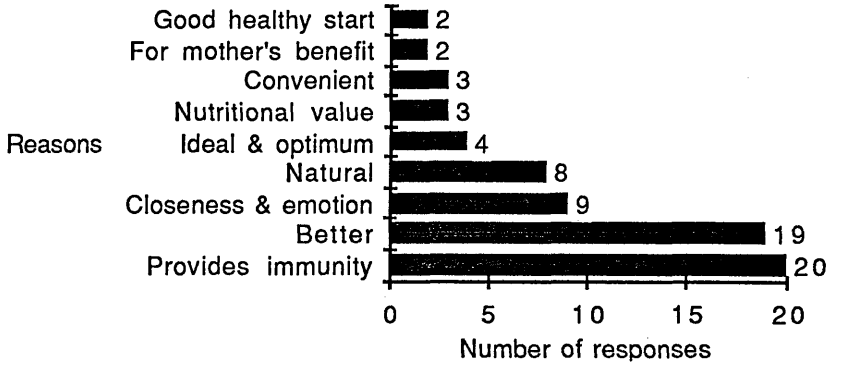
Figure-58 Type of feeding intended to give



4-Why did you choose to give breast-feeding?

Out of 49 women (40 who would breast-feed and 9 who would offer breast- and bottle-feeding), 20(41%) said they would breast-feed because it would give immunity to the baby [Figure-59].

Figure-59 Reasons for choosing breast-feeding



Since this was an open question, the total number of responses in the above figure does not add up to 49.

5-How often would you breast-feed?

Out of 49 women (40 who would breast-feed and 9 who would offer breast- and bottle-feeding), the majority, 41(84%), intended to breast-feed on demand, 6(12%) would give six feeds per day, one 4 feeds per day and one woman would give a breast-feed 8 times a day.

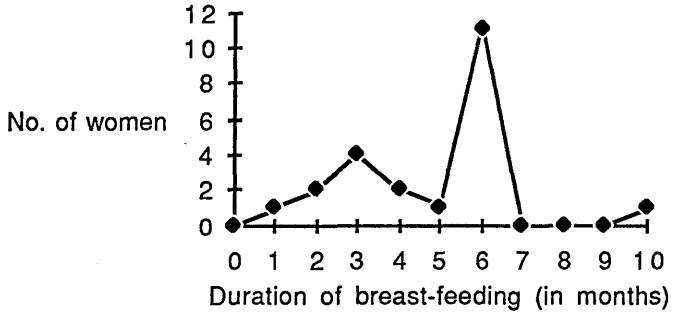
6-For how long do you intend to breast-feed?

When the women were asked how long they would continue to breast-feed, 27(55%) gave open answers and 22(45%) women suggested between 1 and 10 months [Figure-60].

Out of the 27 women who gave open answers, 25 gave statements related to the

mother herself, such as 'As long as I could', 'Till I return to my job', 'Till it is not convenient' and 2 women gave statements related to the baby, such as 'As long as the baby wants it'.

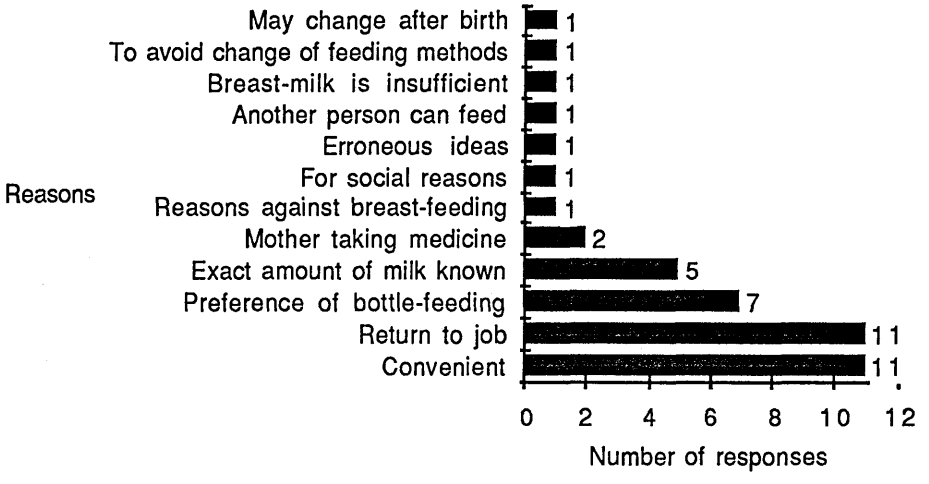
Figure- 60 Duration of breast-feeding



7-Why did you choose to bottle-feed your baby?

Out of 48 women (39 who would give bottle-feeding and 9 who would give both bottle- and breast-feeding), 11(23%) would give bottle-feeding because it is convenient; 11(23%) said 'So that I could go back to my job'; 8 could not say why they had chosen bottle-feeding [Figure-61]

Figure-61 Reasons given for choosing bottle-feeding



The no. of responses in the figure does not add up to 48 because it was an open question.

Summary:

About one-sixth of the sample selected earlier was lost by this stage of the study. Those were the women who failed to respond even after several reminder letters had been sent to them.

Although most of the women, by the end of their pregnancy, were married, there were a few who were still single and some lived alone.

Almost one-third of the women continued to smoke cigarettes even after thirty weeks of gestation.

Despite the fact that the majority of close contacts such as husbands or partners, mothers, friends and medical advisers encouraged breast-feeding, there were some who were not just neutral about bottle-feeding but even advocated it.

The majority of women had planned their pregnancy. Only about one-fourth of them wanted to have two children. Most thought that their relatives would help them in looking after the baby.

A few patients had had various problems during pregnancy which gave them an uncomfortable time.

Most women by this time of pregnancy had obtained some sort of feeding information and the majority secured such information from the clinic. Only a few women had received the information from their parents or doctors.

The number of women who showed a keen desire to either breast- or bottle-feed were evenly divided.

Most of the women would breast-feed because breast milk would provide their babies with immunity. The majority would not give breast-feeding at strictly scheduled times but as often as required by the baby.

Some women believed that there are special foods to be consumed during pregnancy, and they did eat these foods, while some believed that there are special foods which should be eaten during the post-delivery feeding period.

Of those who chose to bottle-feed one-quarter claimed bottle-feeding is more convenient and one-quarter wanted to bottle-feed because they wanted to go back to their jobs.

4 months was the best time for starting weaning and cereals were the most popular solid foods with which weaning should begin.

Although the majority liked to keep the baby's cot in their room, about one-fifth thought it was better to let the baby sleep in a separate room.

II-Third stage - Phase 2 in Bahrain:

Out of the 110 women who were selected originally for the study and to whom questionnaires were posted, 106(96%) responded; 2 had emigrated to other countries, one had had a miscarriage and the address of one woman could not be traced.

Of the 106 respondents, 74(70%) replied immediately after receiving the questionnaire, 16(15%) responded only after the first reminder being made to them either by letters or by telephone calls and 16(15%) women had to be reminded several times before they posted the completed questionnaire.

I-Social and personal data:

Out of 106 women, only 4 were smokers by this stage of pregnancy; all were married; 77(73%) lived with their husbands and 29(27%) with their parents.

II-Influence on and experience of infant feeding:

1-Influence of close contacts on the choice of infant feeding.

-i-Influence on breast-feeding [Figure-62]:

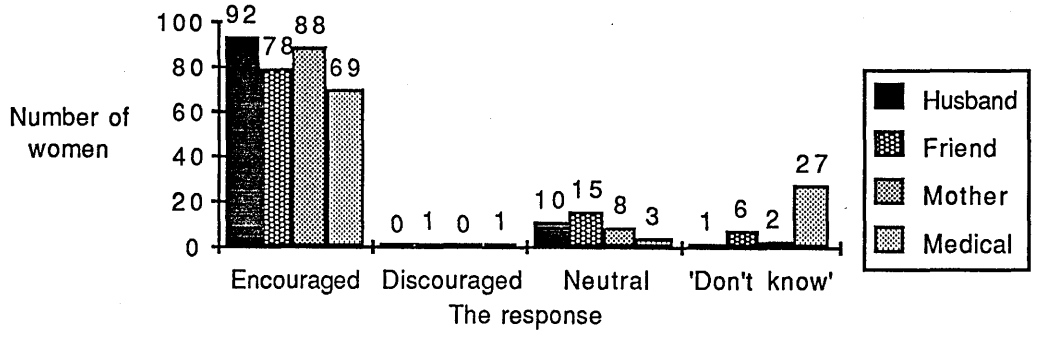
(a) husband: 3 women did not respond; the majority, 92(89%) women, had husbands who encouraged breast-feeding;

(b) close female friend: 6 women did not respond; 6 women said 'Do not know' and the friend of only one woman did not recommend breast-feeding;

(c) mother: 8 women did not respond; the majority, 88(90%), said their mothers encouraged breast-feeding;

(d) medical adviser: 6 women did not respond; although the medical adviser of one woman discouraged breast-feeding, the majority, 69(69%), advocated it;

Figure-62 Close contact's influence on the choice of bresat-feeding



-ii-Influence on bottle-feeding [Figure-63]:

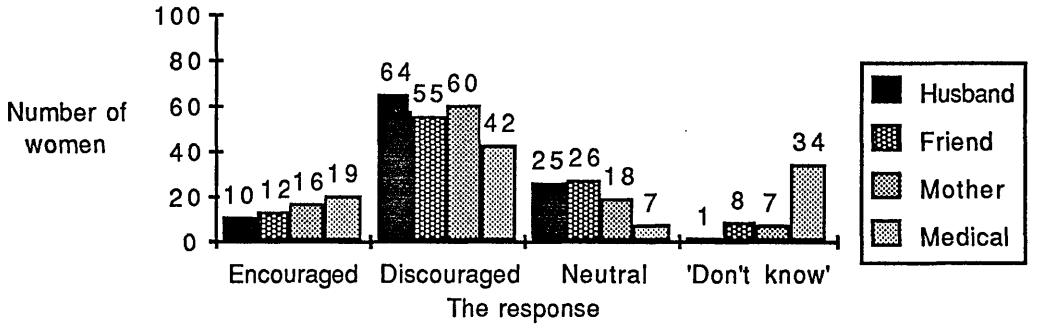
(a) husband: 6 women did not respond; the majority, 64(64%) women, had husbands who discouraged bottle-feeding but 10 recommended it;

(b) close female friend: although the female friends of 55(54%) women discouraged bottle-feeding, 26 were neutral; 5 women did not respond;

(c) mother: the mothers of 60(59%) women discouraged bottle-feeding while 16 mothers encouraged it; 5 women did not respond;

(d) medical adviser: 34(33%) women did not know their medical adviser's attitude towards bottle-feeding and 19 women said that bottle-feeding was recommended by their medical adviser; 4 did not respond.

Figure-63 Close contact's influence on the choice of bottle-feeding



2-How was your pregnancy?

6 women did not respond.

The majority, 68(68%), had had trouble-free pregnancies but 32 women were not happy since their pregnancies had been accompanied by various problems such as morning sickness, vomiting, nausea, giddiness, excessive sleepiness, tiredness and exhaustion; anorexia, aversion for certain foods and loss of body weight; backache, leg and lower abdominal pain; high blood pressure, oedema and diabetes; diarrhoea; frequency of urination, urinary tract and urogenital infection; enteric fever, jaundice and hepatitis; varicose veins and shortness of breath.

3-Who is going to help you with your baby?

The majority, 71(70%) women, thought that their families and relatives would help them to look after the baby. 17 said 'Husband', one woman said 'Care-taker', 4 had nobody to help them and 8 said 'Do not know'; 5 women did not respond.

III-Knowledge about infant feeding:

1-Infant feeding: information and sources.

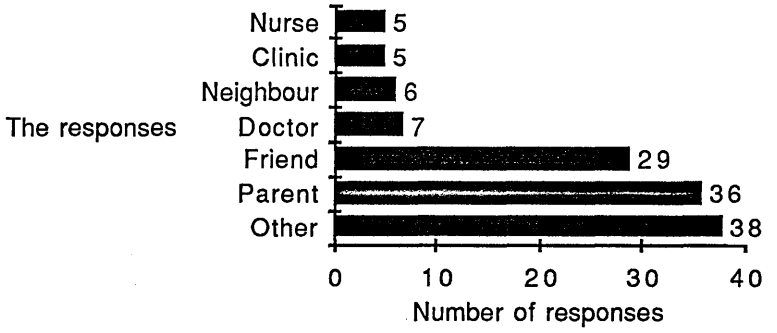
Although 84(79%) women had had information about infant feeding by this stage of pregnancy, 22 were still without such information.

When the women were asked about their sources of information about infant feeding one did not respond. The commonest source of information was 'Other', as stated by

38(36%) women. Parents were the second source [Figure-64].

Examples of other sources of information were books, television, radio, family members, school and college; one woman said 'I obtained information about feeding from my job'.

Figure-64 Sources of information about infant feeding



The number of responses in the above figure does not add up to 105 (no. of women who gave an answer) because this was a multi-response question.

2-<u>What would you do if you thought your breast milk was not sufficient?</u>

Out of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding), one did not respond; 61(59%) would consult their doctor, 20(19%) would just start or continue giving the bottle, 4 said 'Do not know' and 10 would consult their parents, relatives or friends;

5 women would take some other action: one said 'start solid feeding', 2 said 'I would drink more milk and eat nutritious foods' and 2 women said 'I would first take care of my diet and then would consult my doctor'.

3 women proposed several reactions; 2 for instance, said 'I would consult my doctor, parents, relatives and friends' and one said 'First, I would consult everybody and then, if the milk stops, I would start bottle-feeding'.

3-<u>Do you think that artificial formula is sufficient for the growth of your baby?</u>

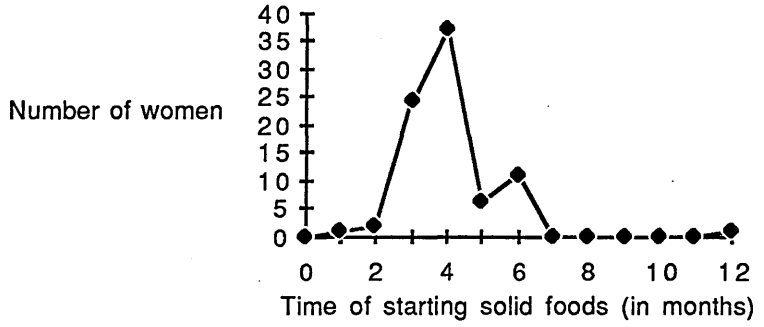
Out of 33 women (one who would bottle-feed and 32 who would give bottle- and breast-feed), 10 did not respond; 5 thought that bottle was sufficient; 11(48%) said it was not and 7 did not know.

4-<u>When would you start giving solid feeding to your baby?</u>

4 women did not respond.

Out of 102 women, 20(20%) said 'Do not know' while the remainder gave responses ranging from 1 to 12 months. 37(36%) women thought that weaning should be started when the baby is 4 months of age [Figure-65].

Figure-65 Time of starting solid feeding



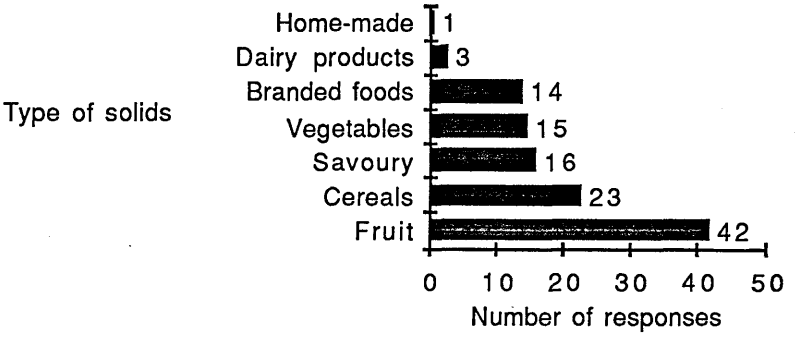
5-Type of solids which should be given initially to the baby.

4 women did not respond.

Although most of the women gave three or more choices of solid foods which should be started initially to the baby, 37(36%) said 'Do not know'.

Fruits was the most popular solid food that 42(41%) women wanted to wean their babies with but 23(23%) preferred cereals [Figure-66].

Figure-66 Types of solids to be started initially



6-Why should solid foods not be started at a much earlier age?

Reasons given for this and the next question were arranged into 4 groups, as already explained on page 98.

3 women did not respond; 38(37%) gave reasons related to the immaturity of the baby [Table-17].

Reasons	Number of women
Immaturity	38(36.9%)
Physical problems	13(12.6%)
Medical and logical	6(5.8%)
Illogical	3(2.9%)
Mixture of above	15(14.6%)
'Don't know'	28(27.2%)
Total	103(100%)

Table-17 Reasons for not starting solids early.

7-Why should solid foods not be given to the baby at a much later age?

6 women did not respond; 49(49%) gave reasons related to medical and nutritional problems that the baby may acquire if solid feeding is delayed to a very late age [Table-18].

Reasons	Number of women
Medical & nutritional	49(49%)
Mechanical & physical	10(10%)
Mixture of above	5(5%)
'Don't know'	36(36%)
Total	100(100%)

Table-18 Reasons for not delaying the introduction of solid feeds.

IV-Attitudes to infant feeding:

1-The husband's attitude to infant feeding.

78(74%) women had husbands who preferred breast-feeding, 26(24%) husbands preferred both (breast- and bottle-feeding) and 2 had no preference.

2-The parent's attitude to infant feeding.

One women did not respond.

The parents of 78(74%) women preferred breast-feeding, 25 encouraged both (breast- and bottle-feeding) and 2 women said 'Do not know'.

The following 4 questions were asked of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding).

3-Were there any special foods or fluids that you have taken during pregnancy in order to increase your breast-milk later on?

One woman did not respond; 20(19%) said 'Do not know'.

41(40%) women said 'No' and 42(41%) said there were special foods and drinks that they had eaten during pregnancy such as milk, yogurt and milk products; fruits and dates; vegetables, leafy vegetables, green leaves and salads; pulses; meat, fish, eggs and chicken; fluids, juices and honey; nuts and sesame; chocolate; food rich in vitamins, protein, calcium, phosphorus and iron.

4-Any foods or fluids that should be taken during the post-delivery feeding period?

One woman did not respond; the majority, 53(51%) said 'Yes', 22(21%) said 'No' and 28(27%) did not know.

Examples of the foods mentioned were milk, cheese, yogurt and milk products;

vegetables including leafy vegetables, spinach and salads; meat, egg, liver, fish and shrimps; pulses and bread; fruit such as melon and dates; much fluid, honey, grape and orange juice among other juices; nuts and sesame; nutritious and 'good' food and food rich in protein, vitamins and calcium; one woman said green pepper and one said 'all foods'.

5-Any special foods or fluids avoided during pregnancy?

4 women did not respond; 10 women could not remember.

43(43%) women had not avoided any certain foods while 47 said that there were some foods that they had not consumed during pregnancy, such as yogurt; greasy and fatty foods; feva beans; meat, fish, chicken, eggs, and one said 'grilled meat'; certain fruits (one woman said banana and orange); 'hot', highly spiced foods; carbohydrates, sweets, and excessive sugar; soft drinks such as coke and pepsi-cola, sour drinks and coffee; gas-producing foods; acidic foods; pickles and vinegar; alcohol and medicine.

6-Any special foods or fluids to be avoided during the post-delivery feeding period?

Out of 104 women, 3 women did not respond; 41(41%) were not certain, 28 thought that there were none to be avoided and 32(32%) indicated that there are certain foods that should be avoided during the post-delivery feeding period such as milk and cheese; pulses, feva beans, lentils, wheat, rice and tamarind; shrimps, fish and meat; cabbage and parsnips; melon and apple; chilli, spicy and 'hot' foods; beverage drinks, coffee, tea and sour drinks; pickles; food causing diarrhoea; gas-producing foods; one woman said carbohydrate. Smoking, alcohol and medicine were also to be avoided.

7-Did you have to prepare your breasts during pregnancy for feeding later on?

Out of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding), 61(59%) had prepared their breasts, 25(24%) said 'No' and 17(16%) were not certain; one women did not respond.

8-Where would the baby sleep?

3 women did not respond; one did not know.

The majority, 87(84%) women, preferred to keep their babies cots in their rooms, 10 women liked to have their babies not only in the same room but in the same bed and 5 wanted their babies to sleep in a separate room.

V-The women's intentions regarding infant feeding:

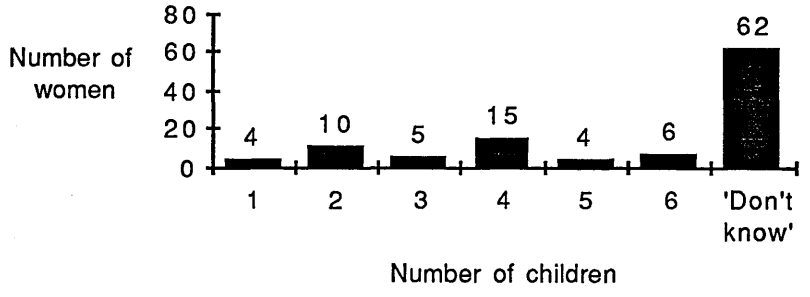
1-Did you plan your pregnancy?

2 women did not respond; 48(46%) had planned to be pregnant, 43(41%) said 'No' and 13 were not certain.

2-How many children do you intend to have?

The majority, 62(58%) women, could not tell the number of children they wanted to have and so said 'Do not know' while the remaining 44 women wanted to have 1 to 6 children [Figure-67].

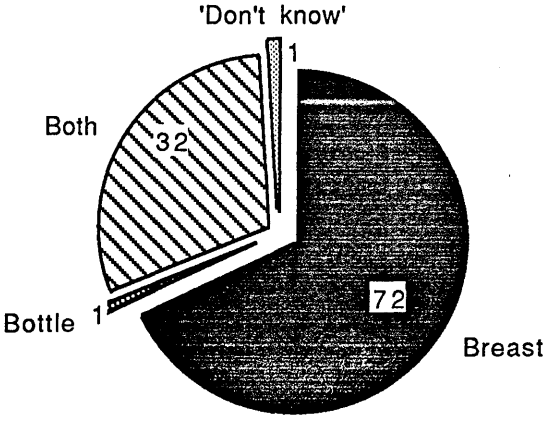
Figure-67 Number of children wanted



3-How do you intend to feed your baby?

The majority, 72(68%) women wished to breast-feed [Figure-68].

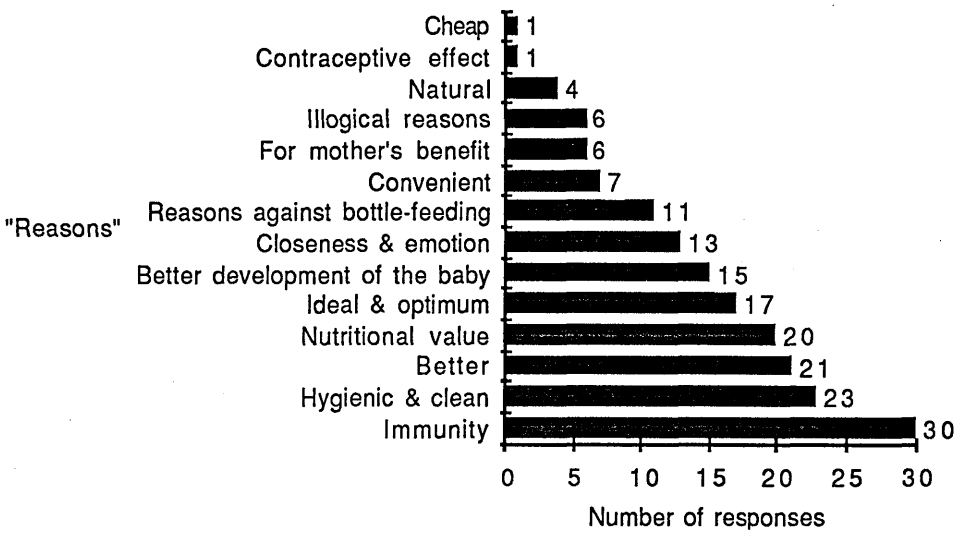
Figure-68 Type of feeding intended to give



4-Why did you choose to give breast-feeding?

Out of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding), 6 did not respond; 4 could not give a reason for choosing to breast-feed while 30(30%) preferred to breast-feed because it would provide immunity to their babies [Figure-69].

Figure-69 Reasons for choosing breast-feeding

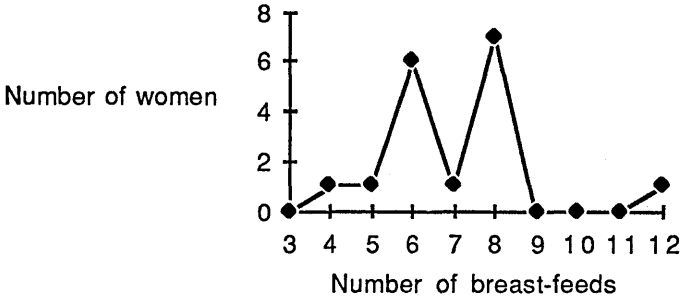


Since this was an open question and the women could give more than one response, the total number of responses in the above figure does not add up to 104.

5-How often would you breast-feed?

Out of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding), the majority, 71(69%) women, intended to breast-feed on demand and 15 were not sure about the number of breast-feeds per day that they would give to their babies; one woman did not respond; the remaining 17 women wanted to give their babies from 4 to 12 breast-feeds per day [Figure-70].

Figure-70 Number of breast-feeds intended to give (in a day)

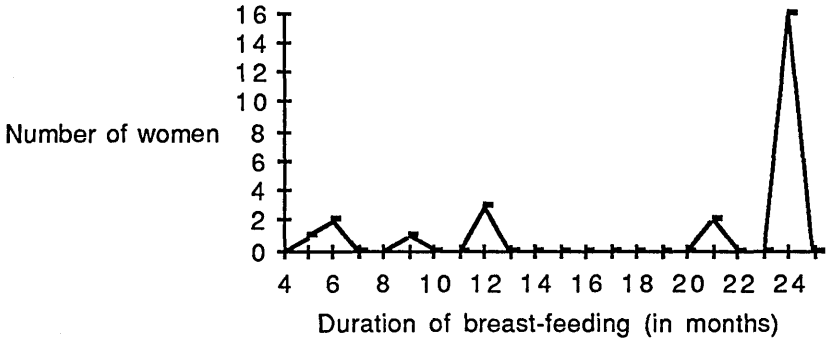


6-For how long do you intend to breast-feed?

Out of 104 women (72 who would breast-feed and 32 who would give breast- and bottle-feeding), one did not respond; one did not know, 77(75%) gave open answers and 25(25%) women suggested 5 to 24 months [Figure-71].

Of the 77 women who gave open answers, 33 gave statements related to the mother herself, such as 'As long as I could' and 44 women gave statements related to the baby, such as 'As long as the baby wants it' and 'Till there is no milk in my breasts'.

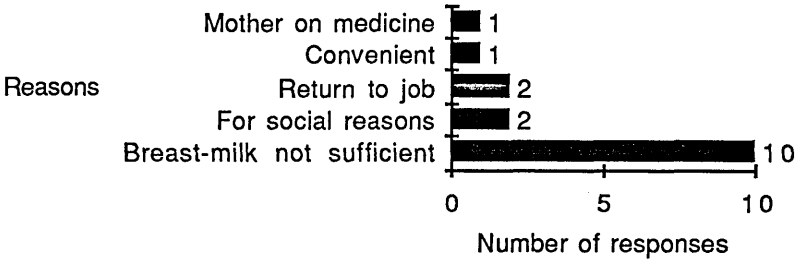
Figure-71 Duration of breast-feeding



7-Why did you choose to bottle-feed your baby?

Out of 33 women (one who would bottle-feed and 32 who would give bottle- and breast -feeding), 13 did not respond; 4 said 'Do not know' and 10(50%) women chose to bottle-feed because they thought breast-feeding would not be sufficient for the baby [Figure-72].

Figure-72 Reasons given for choosing bottle-feeding



The total number of responses in the above figure does not add up to 20 because it was an open question.

Summary:

96% of women responded to this stage of the study, of whom all were married and the majority lived with their husbands.

Close contacts such as husbands, mothers, friends and medical advisers had a great influence on the choice of infant feeding; although there were few who encouraged bottle-feeding, the majority supported the idea of breast-feeding.

About one-third of the women faced various problems during their pregnancies ranging from morning sickness to some serious conditions such as vaginal bleeding, high blood pressures, diabetes etc.

By the end of their pregnancies, one-quarter of the women were still without sufficient information about infant feeding. Of those who had obtained such information most depended on themselves and on their parents to secure information about infant feeding.

Fewer than one-fifth of the women obtained information about infant feeding from their doctor, nurse or from the clinic.

Although fewer than half of the women had planned their pregnancy, the majority were not certain about the numbers of children they wished to have in the future.
In Bahrain parents and relatives play a major role in the pregnant women's lives, as was clear from the responses, the majority of the women thought that their parents and relatives could be relied upon to help them in looking after their babies.
About two-thirds of the women wanted to breast-feed their babies while most of the others would give breast- and bottle-feeding. The majority would seek advice from their doctors, parents, friend or relative before taking any other action once they thought their breast milk was not sufficient for their babies.
The commonest reason for choosing to breast-feed was that it would provide immunity for the babies.

Most women would breast-feed their babies on demand and of those who gave a fixed time for the duration of breast-feeding the majority wanted to breast-feed for two years.
Fewer than one-half of the women said that they had eaten or avoided particular foods during their pregnancies. While 50% of the women said that they would eat certain foods during the post-delivery feeding period, about one-third thought there were no foods to be avoided.
The majority of the women thought that solid feeding should be started when the baby is 3 to 4 months of age and most liked to wean their babies with fruit; cereals were the next choice of solid feeds that women preferred to introduce at weaning.

IV-Fourth stage, information from women around three months post-natally.

At this stage of the study information was collected by postal questionnaire from the original sample of women around three months after their delivery.

Please note:

The following questions were intended to obtain information on the feeding habits of children at 3 months post-delivery. However for a number of reasons some of the questionnaires returned related to babies below 3 months of age and a further number related to children more than 3 months of age. Therefore, those questions which were geared to obtain information about the feeding habits were analysed in relation to children who were 12 $\pm$ 2 weeks of age at the time the questionnaires were completed.

I-Phase 1 in Glasgow:

Response rate:

Questionnaires were posted to all the 89 women who responded to the previous stage of the study.

82 women replied while despite several reminders 6(7%) did not respond and the contact with one was lost because she changed her address and could not be traced.

Out of the 82(92%) respondents, 73(89%) responded immediately after receiving the questionnaire and 9(11%) had to be reminded once

I-Social and personal data:

1-Marital status and place of residency.

Of the 82 women, 64(78%) were married, 13(16%) were single, 2 separated and one was divorced. Two women said 'other' without specifying their marital status.

The majority, 63(77%) women, were living with their husbands, 7(8%) with partners, 5 with parents, one with a friend, 2 with siblings and 4 women were living alone.

2-Have you returned to work, and if so, who looks after your baby?

Out of 82 women, 11(13%) had already returned to work while some of the remaining 71 did not have a job. Some remained on maternity leave.

Of the 11 working women, the parents and relatives of 8 took care of the babies, 2 had childminders and the common law husband of one woman looked after the baby during her absence.

II-Data related to the state of delivery:

1-How was your delivery?

The majority, 54(66%) women, had had normal deliveries, 17(21%) caesarean sections, 10(12%) had forceps delivery and one women said 'I had an occipito-posterior lie'.

2-When was the delivery?

38(46%) women thought that they had delivered later than their expected date of delivery, 28(34%) said that their deliveries were on time and 16(19%) thought it was early.

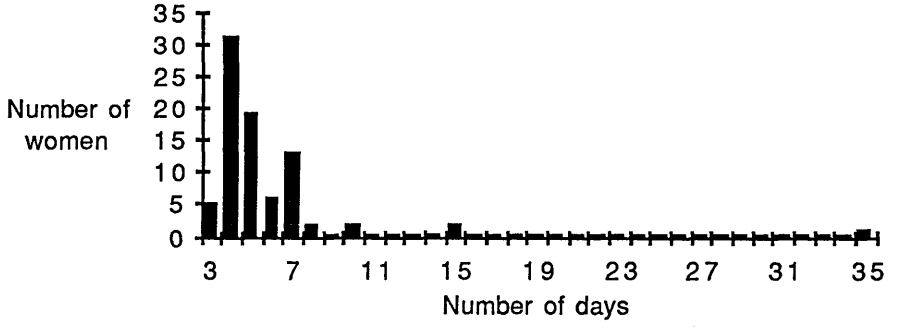
3-Duration of stay of the mother in hospital during and after delivery.

One woman did not respond.

The duration of stay in hospital ranged from 3 to 35 days with a mean of 5.7 days; standard deviation was 3.9 and mode 4.

Only one woman was kept in hospital for 35 days while 31(38%) stayed for 4 days [Figure-73].

Figure-73 The duration of stay of women in hospital

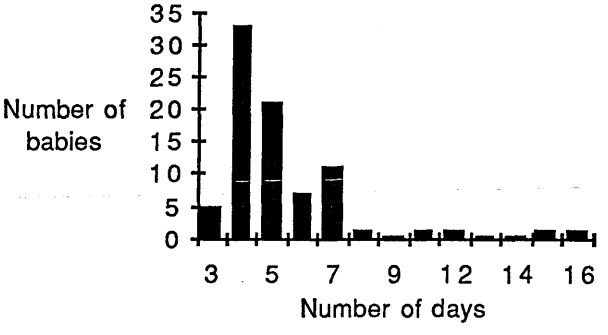


4-Duration of stay of the baby in the hospital.

The duration of stay in hospital ranged from 3 to 16 days with a mean of 5.3 days; standard deviation was 2.2 [Figure-74].

The mode was 4 days (33 '40%' babies were kept for 4 days).

Figure-74 The duration of stay of babies in hospital

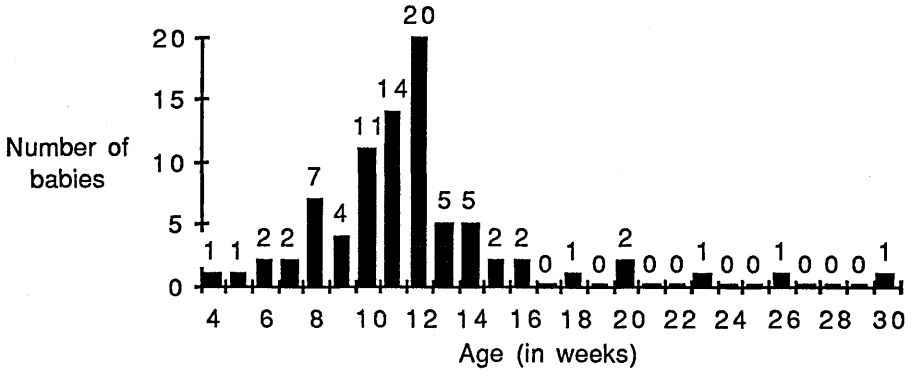


5-The sex and age of the baby.

43(52%) babies were male while 39 were female.

The age of the babies at the time of completing the questionnaire ranged from 4 to 30 weeks; the majority, 55(67%), were between 10 and 14 weeks of age; only one baby was 30 weeks. The mean age was 11.8 weeks and standard deviation was 4; mode was 12 [Figure-75].

Figure-75 The age of the babies



III-Influence on infant feeding:

1-Influence of close contacts on the choice of infant feeding.

-i-Influnce on breast-feeding [Figure-76].

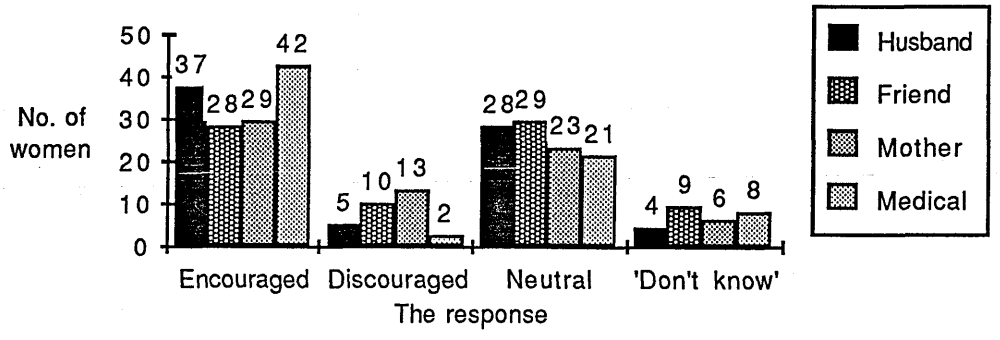
(a) husband or partner: 8 women did not respond; 37(50%) women had husbands or partners who recommended breast-feeding but 5 discouraged it;

(b) close female friend: 6 women did not respond; 29(38%) had female friends who were not influencial on the choice of breast-feeding but were neutral;

(c) mother: 11(13%) women did not respond; although the mothers of 29(41%) women encouraged breast-feeding, 13(18%) did not recommend it;

(d) medical adviser: 9(11%) women did not respond; although 42(57%) women's medical adviser advocated breast-feeding, 21(29%) women said their medical advisers were neutral about it.

Figure-76 Close contact's influence on breast-feeding



-ii-Influence on bottle-feeding [Figure-77].

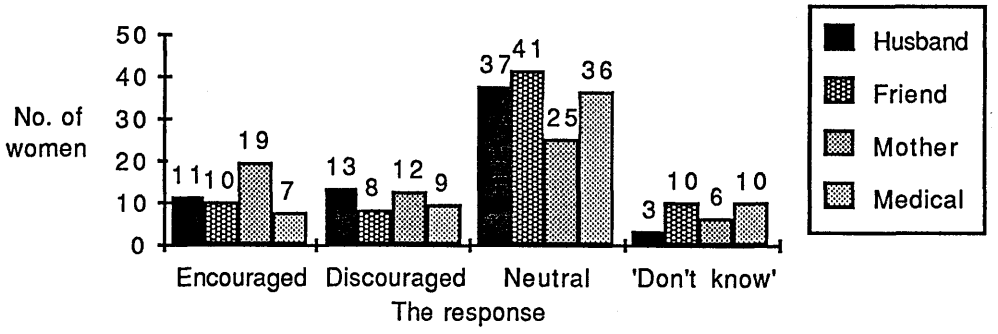
(a) husband or partner: 18(22%) women did not respond; while 11(17%) husbands or partners encouraged bottle-feeding, 37(58%) were neutral about it;

(b) close female friend: 13(16%) women did not respond; the majority, 41(59%) women, had female friends who were neutral and 10(14%) did not know the attitude of their friends towards bottle-feeding;

(c) mother: 20(24%) women did not respond; the mothers of 19(31%) women encouraged them to bottle-feed;

(d) medical adviser: 20(24%) women did not respond; the majority, 36(58%) women, had medical advisers who neither encouraged nor discouraged bottle-feeding but were neutral.

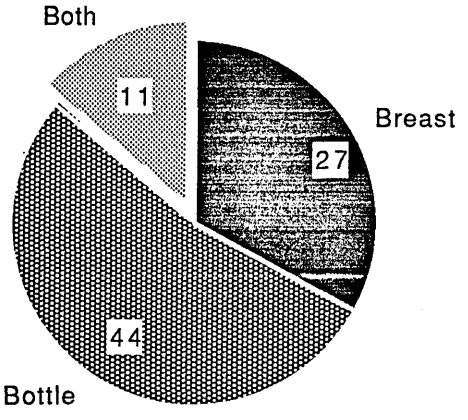
Figure-77 Close contact's influence on bottle-feeding



2-Type of feeding given to the baby.

The majority of women, 44(54%), gave bottle-feeding; 27(33%) gave breast-feeding [figure-78].

Figure-78 Type of feeding given to the baby



3-Who chose the feeding method?

Out of 82 women, the majority, 76(93%), said that the choice of feeding method was their own, 4 said that medical personnel advised them about the feeding method and the relatives of two women infuenced their choice.

4-Who helps you with your baby?

The majority, 43(52%) women, said their husbands or partners had helped in looking after their babies, 36(44%) said 'Family members' and 3 mothers had nobody to help them.

IV-Questions related to infant feeding:

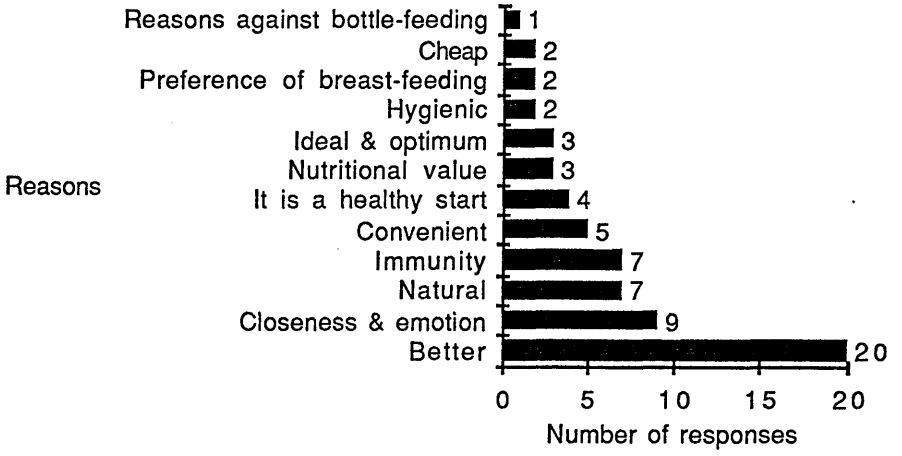
1-Why did you choose to breast-feed?

Out of 38 women (27 who breast-fed and 11 who gave breast- and bottle-feeding), 4(10.5%) did not respond.

Most of the remaining 34 women gave more than 3 reasons for choosing breast-feeding. The first 3 responses mentioned were considered.

The majority, 20(59%) women, chose to breast-feed simply because it was better; 9(26%) breast-fed because it would make them feel closer to their babies [Figure-79].

Figure-79 Reasons given for choosing breast-feeding



The total number of responses in the above figure does not add up to 34 (no. of women who gave an answer) because this was an open-ended question.

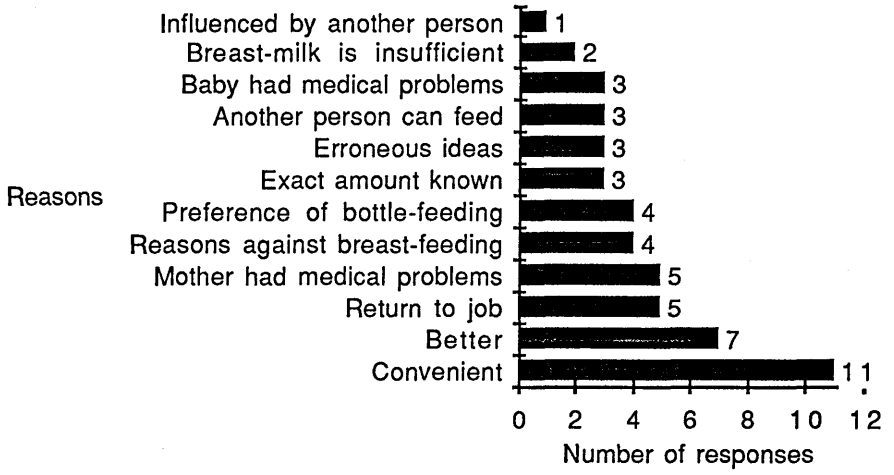
2-Why did you choose to bottle-feed your baby?

Out of 55 women (44 who started only bottle-feeding and 11 who gave bottle- and breast-feeding), 7(13%) did not respond; 6(12%) could not give a reason for choosing bottle-feeding and said 'Do not know'.

Most of the remaining 42 women gave more than two reasons. 11(23%) chose to

bottle-feed because it was more convenient [Figure-80].

Figure-80 Reasons given for choosing bottle-feeding



The total number of responses in the above figure does not add up to 48 (no. of women who gave an answer) because it was an open-ended question.

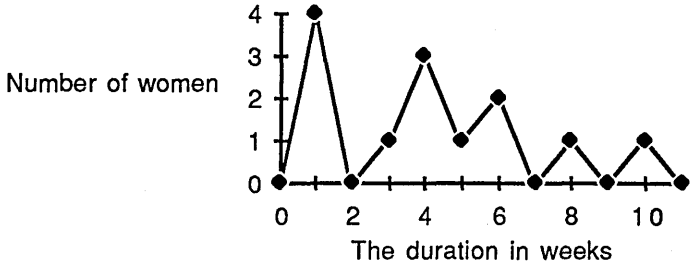
The results of the following 6 questions were related only to the children (total 55) who were 12 ± 2 weeks of age.

3-Are you still breast-feeding? if not, then for how long did you do so?

Out of the 28 women (20 who breast-fed and 8 who gave breast- and bottle-feeding), 13(50%) were still breast-feeding by 3 months post-delivery and 14 were not.

The duration of breast-feeding given by the 14 women who had stopped it ranged from 1 to 10 weeks; one woman did not respond [Figure-81].

Figure-81 Duration of breast-feeding
(among the 13 women who discontinued it)



4-Why did you stop breast-feeding?

The following were the reasons given by the 14 women who had discontinued breast-feeding;

5 women thought their breast-milk was insufficient and baby was not satisfied; 4 had medical problems such as 'Painful breasts', 'Sore nipples' and 'Anxiety'; 2 gave

reasons related to the baby such as 'Baby refused breasts' and 'Baby was ill' and one woman had a social reason, she said 'I had no privacy'. One wanted to return to work and one said 'I was not supported enough'

5-For how long do you intend to breast-feed?

Out of the 13 women who were still breast-feeding 3 months after delivery, one intended to continue until baby was 4 months and one said 'For 6 months'.

The remaining 11 women gave open answers; for instance 7 gave mother-related statements such as 'As long as I could' and 'Till I go back to work'; 4 gave baby-related statements such as 'As long as the baby wants' and 'Till baby is able to drink from a cup'.

6-How often a day do you breast-feed?

Of the 13 women who were still breast-feeding 3 months post-natally, 6 gave breast-feeding on demand, 4 gave 5 breast-feeds a day, 2 gave 6 and one gave 4 .

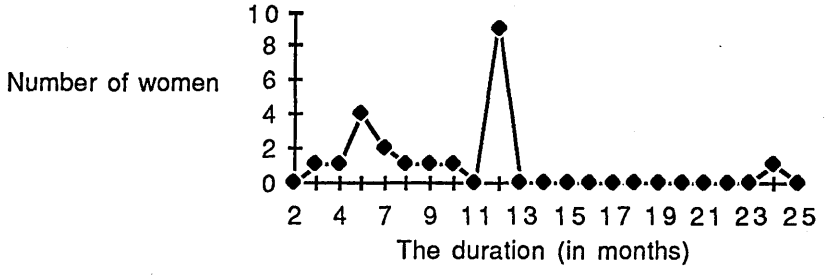
7-For how long do you intend to bottle-feed?

Out of the 35 women (27 who bottle-fed and 8 who gave bottle- and breast-feeding), 4 did not respond and 8(26%) said 'Do not know'.

2 women gave open answers such as 'As long as the baby needs it' and 'Till the baby is established on solid feeding'.

The remaining 21 women gave the duration of bottle-feeding ranging from 3 to 24 months [Figure-82].

Figure-82 The duration of bottle-feeding



8-How often during the 24 hours do you give bottle-feeding?

Out of the 35 women (27 who bottle-fed and 8 who gave bottle- and breast-feeding), 3 did not respond and one said 'Do not know'. 17(53%) gave 5 bottles a day, 12(37%) gave 6 and 2 women gave 7 bottles a day.

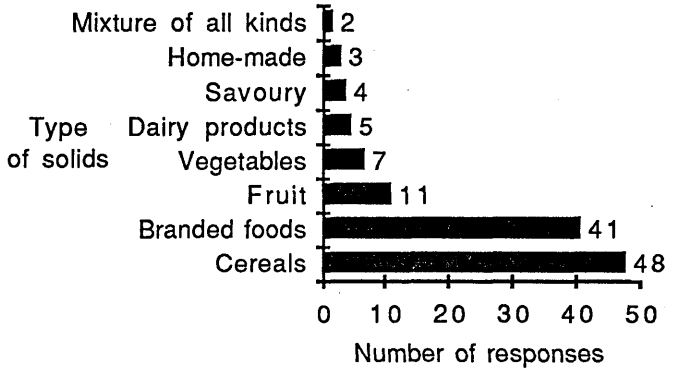
V-Data related to solid feeding:

1-What kind of solid foods have you started or are going to start?

Two women did not respond and 3 said 'Do not know'.

The majority, 48(60%) women, preferred cereals; 41(51%) weaned or wanted to wean their babies with the ready-made brand named baby foods [Figure-83].

Figure-83 Type of solid foods



The total number of responses does not add up to 80 (no. of women who gave answers) because it was a open-ended question.

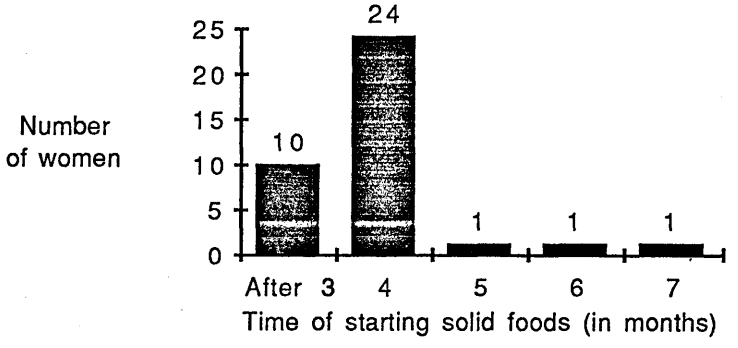
The results of the following 2 questions were related only to the children (total 55) who were 12 ± 2 weeks of age.

2-Have you started giving solid foods? If not,then when are you intending to do so?

32(58%) women had already started giving solid feeding to their babies.

Of the 23(42%) women who had not yet introduced solid foods, the majority, 16 women, wanted to wean their babies at the age of 4 months [Figure-84].

Figure-84 Time of starting solid foods



3-Have you given any fluids other than milk to your baby? If so, what kind?

One woman did not respond.

9(17%) women did not give any fluids other than milk to their babies.

When the 45 women who had started giving additional fluids to their babies were asked about the kind of fluids given; two women did not respond; the majority, 24(56%), gave branded baby drinks such as juices, ribina drinks etc.;
[Table-19].

Type of fluids	No. of women
Water or water with sugar	6(14.0%)
Branded drinks	24(55.8%)
Fresh fruit juices	5(11.6%)
Mixture of fluids	8(18.6%)
Total	43(100%)

Table-19 Type of fluids given to the baby

VI-Information about the baby:

1-How is your baby and how often has it been unwell?

Almost all of the women said their babies were healthy except one who did not think so but said 'My baby is allergic to baby-milk'. Out of 82 women the majority, 40(49%) women, said their babies had been occasionally unwell, 39(48%) said 'Has never been unwell' and the babies of two women had frequent attack of illness. One woman did not respond.

2-The characteristics of the baby.

The majority, 57(71%) women, had a quiet contented baby; the babies of 5 women were noisy and difficult; one woman said 'Do not know' and 18 women gave another description of their babies such as 'Peaceful but difficult', 'Noisy at night', 'Active but not difficult', "usually good except between 6 and 10 pm' and one woman said 'Enjoys attention and make noises but will sit contented'.

3-Did you find any difficulties in looking after your baby?

All women, except three, did not have any difficulties in looking after their babies.

4-How and where does your baby sleep at night?

Only 7 had babies who did not sleep well at night.

Out of 82 women the majority, 64(79%) women, said their babies slept in the parent's room but in its cot while 17(21%) had their babies' cot in a separate room. One woman did not respond to the second part of the question.

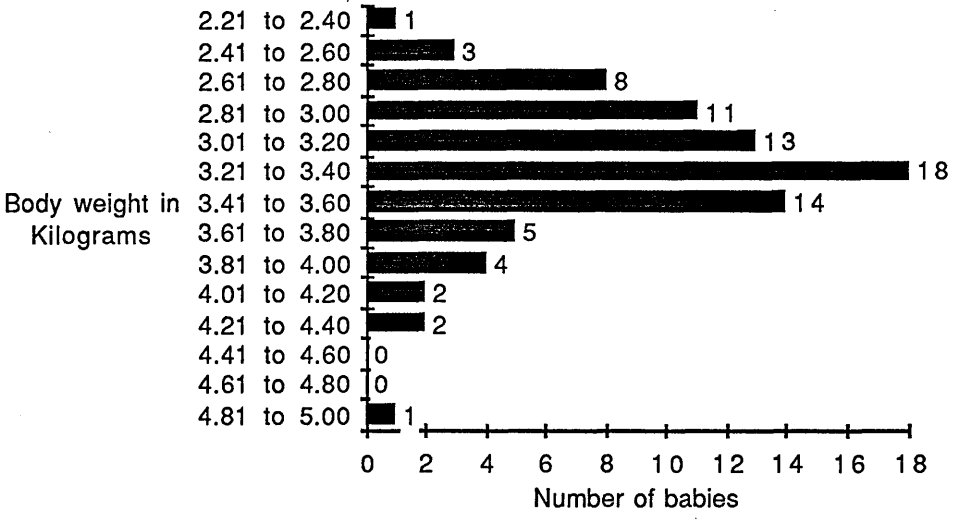
5-The body weight of the babies at birth.

(i)Of all the babies:

The body weight of the babies at birth ranged from 2.21 Kg to 4.93 Kg with a mean of 3.3 Kg; standard deviation was 0.46; mode 3.5; median 3.3[Figure-85].

The majority, 53(65%) babies, had a body weight ranging from 2.95 to 3.55 Kg.

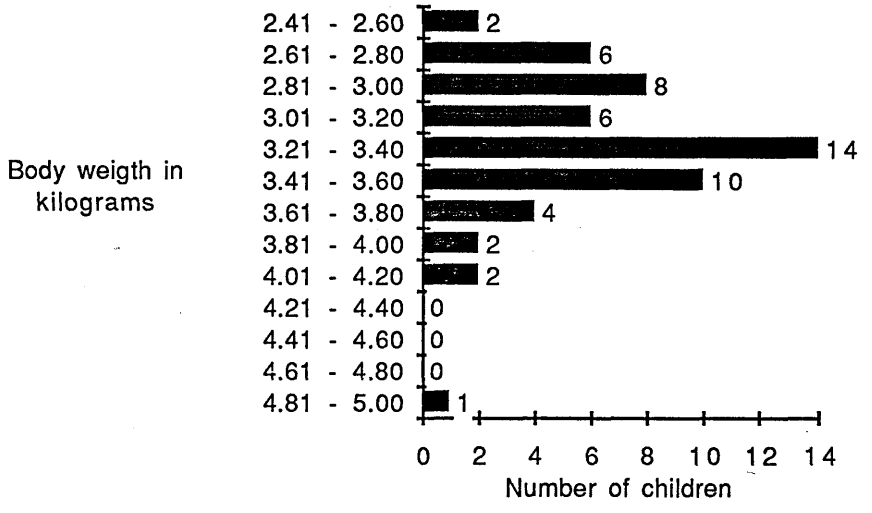
Figure-85 The body weight of all babies at birth



(ii)Of the 55 children:

The body weight at birth of the 55 children who were three months of age at time of completing the questionnaire ranged from 2.41 to 4.93 Kg. with a mean of 3.3 Kg.; standard deviation was 0.45; median 3.3; mode 3.3 [Figure-86].

Figure-86 The birth's body weight of the 55 children



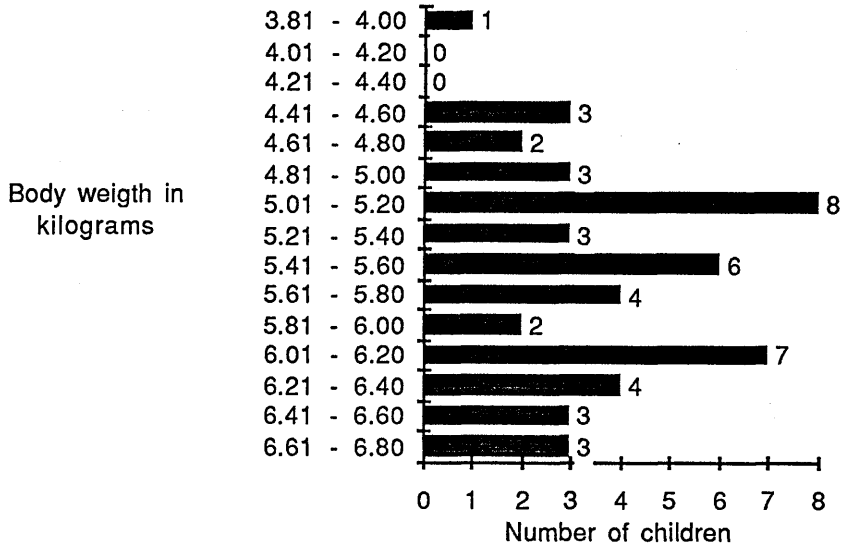
6-The body weight of the 55 children about 3 months post-delivery.

The mothers of the 55 children who were three months of age at the time the questionnaire was completed were asked the body weight of their children at 3 months

of age. Three women did not know the body weight of their children and three women did not respond.

The body weight at 3 months of the remaining 49 children ranged from 3.88 to 6.80 Kg. with a mean of 5.6 Kg.; standard deviation was 0.7; median 5.4 ; mode 5.4 [Figure-87].

Figure-87 The body weights of the 3 months old children (49 Children)



The results of the following question was related only to the children (total 55) who were 10 to 14 weeks of age.

7-Has your baby received its first immunization? If not then why?

4 babies had received their first immunization while the other 51 had not.

Of the 51 women, the majority, 46(96%) women, said 'Baby was still too young' or 'did not get an appointment yet'; 2 women said their doctors give vaccination at a later age; 3 women did not respond.

Summary:

77% of the original sample population had responded to this stage of the study.

Although about three-quarters of the women were married and lived with their husbands, the remaining one-quarter were unmarried and lived either with partners, parents, friends, siblings or alone. By 3 months post-birth the number of women who had returned to work was small.

Although the majority had normal deliveries, about one-third had an instrumental or surgical delivery.

Although the majority of women and their babies stayed in hospital for 3 to 5 days, a few

were kept for a much longer period.
There was a slight difference in the ratio of male to female babies with a greater number of male babies.
Despite the fact that about two-thirds of the babies were 10 to 14 weeks of age, there were a few who were older and some who were younger than that age. The reasons were: First, that some mothers kept the questionnaire for some time before posting it. Secondly, all the questionnaires were sent to the women according to their expected date of delivery but some women had delivered earlier than that date.

Although one-third of the women breast-fed their babies, the majority gave bottle-feeding.
About one-third of close contacts such as husbands, mothers, friends and medical advisers encouraged the choice of breast-feeding; the majority neither encouraged nor discouraged bottle-feeding but remained neutral and most women said that they themselves had decided how to feed their babies.

Even so, the number of women who started breast-feeding was not high and by three months post-delivery the number had dropped significantly and only one-quarter of them were still breast-feeding by that stage of life.
The majority of those who breast-fed did so because they thought that breast milk was better and most gave it on demand.
Most of those who discontinued breast-feeding did so because they thought that their breast-milk was insufficient therefore the babies were not satisfied. The duration of breast-feeding ranged from 1 to 10 weeks.

Of those who gave bottle-feeding one-quarter did so because it was more convenient and most gave 5 bottles per day; the commonest duration of bottle-feeding was one year.
More than half of the women had started giving solid foods to their babies. Of those who had not, the majority wanted to wean their babies at 4 months. Cereals and ready-made brand named baby foods were the most popular solids with which women weaned or wanted to wean their babies.

Amongst the additional fluids that had been given to the babies commercially available branded drinks such as ribena, juices etc. scored the highest respose rate.
Almost all women had healthy babies and the majority, since birth, had either never been sick or were very occasionally unwell.
Most women enjoyed their babies and described them as quiet and contented and almost all of the women did not find any difficulties while looking after their babies.
The majority of babies' cots were kept in the mother's room and most babies slept well.
The body weight of babies at birth ranged from 2.21 to 4.93 Kg. with a mean of 3.3 Kg.

II-Fourth stage - Phase 2 in Bahrain.

Response rate:

Questionnaires were posted to all the 106 women who responded to the previous stage of the study.

94(89%) responded, 3 women had left Bahrain and the baby of one woman had died. Despite several reminders 8 women failed to respond.

Of the 94 respondents, 53(56%) replied immediately after receiving the questionnaires, 30(32%) responded after they had been reminded once and 11(12%) women were reminded twice.

I-Social and personal data:

1-Marital status and place of residency.

All the women remained married; the majority, 82(87%), were living with their husbands while 12(13%) lived with their parents.

2-Have you returned to work? If yes, who looks after your baby while at work?

Out of 94, only 17(18%) women had returned to their jobs; a few were still on maternity leave and the remainder were house-wives. One did not respond.

Of the 17 working mothers, the parents or relatives of 11(65%) women took care of the babies during their absence, 2 said 'Husband', the babies of 3 were looked after by baby-sitters and one baby was kept in a nursery.

II-Data related to the state of delivery:

1-How was your delivery?

The majority, 72(77%) women, had normal deliveries, 16(17%) had caesarean sections, 2 had forceps, one had suction, one had an induced labour and one did not specify the type of delivery she had. One woman did not respond.

2-When was the delivery?

35(37%) women, said that their child was born later than the expected date of delivery, 33(35%) thought it was earlier and 26 said 'It was on time'.

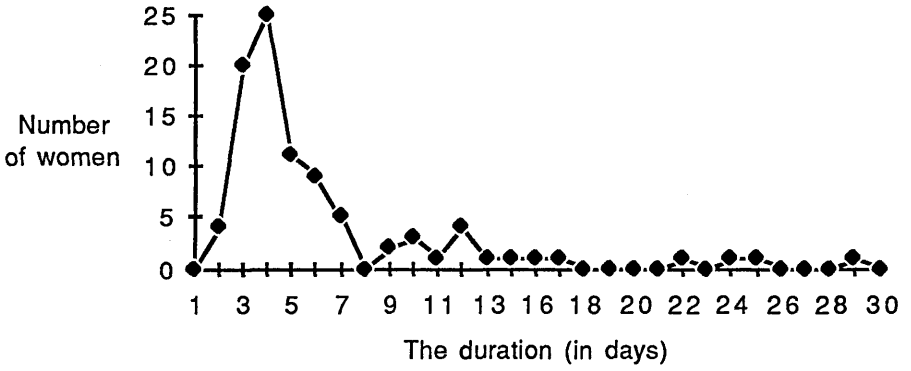
3-The duration of stay of the mothers in hospital during and after labour.

One woman did not respond and one had a home-delivery.

The duration of stay of mothers in hospital ranged from 2 to 29 days with a mean of 6.3 days; standard deviation was 5.1; mode 4; median 4 [Figure-88].

25(27%) women spent 4 days in hospital.

Figure- 88 The duration of stay of women in hospital



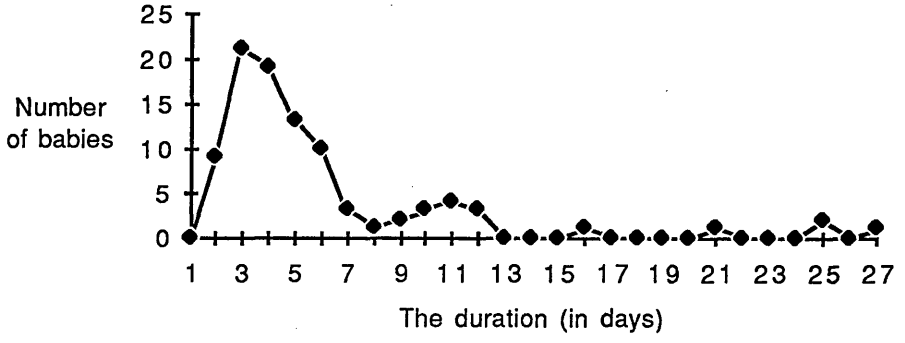
4-The duration of stay of baby in hospital.

One baby was not delivered in hospital but at home.

The duration of stay of the babies in hospital ranged from 2 to 27 days with a mean of 5.9 days; standard deviation was 4.9; mode 3; median 4 [Figure-89].

21(23%) babies were kept for 3 days.

Figure- 89 The duration of stay of babies in hospital

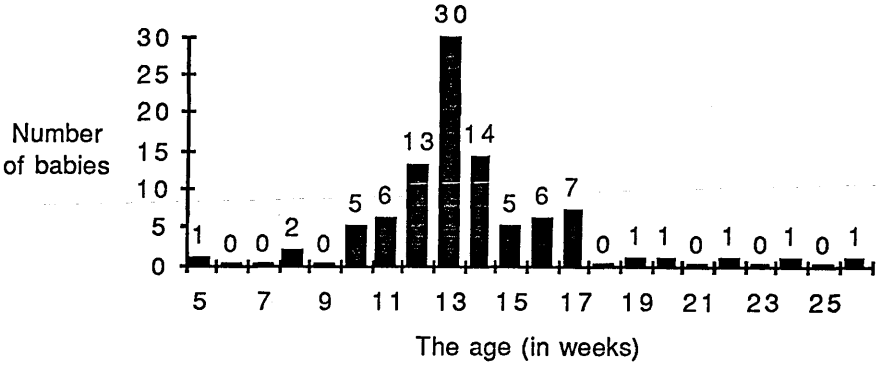


5-Sex and age of the baby.

49(52%) babies were male and 45 were female.

The age of the babies at the time of completing the questionnaires ranged from 5 to 26 weeks but the majority, 68(72%), were between 10 and 14 weeks of age. The mean age was 13.6 weeks; standard deviation was 3.0; mode 13; median 13 [Figure-90].

Figure-90 The age of the babies



The results of some of the following questions were analysed only in relation to those children (total 68) who were 12 ± 2 weeks of age.

III-Influence on infant feeding:

1-Influence of close contacts on the choice of infant feeding.

-i-Influence on breast-feeding [Figure-91]

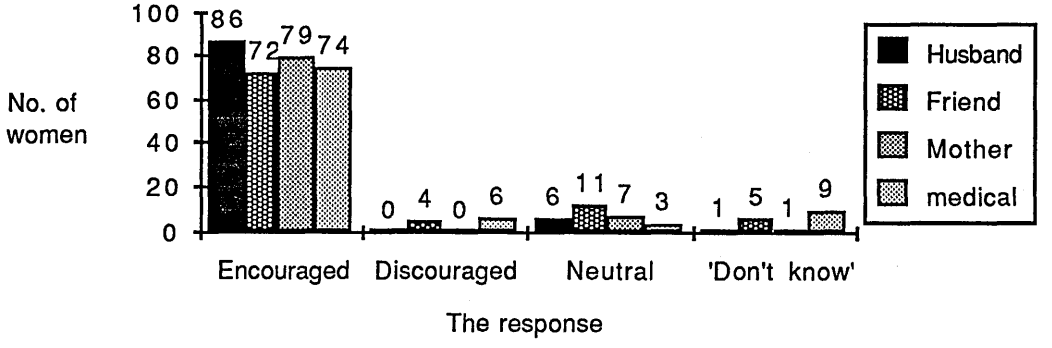
(a) husband: one woman did not respond; the majority, 86(92%) women, had husbands who encouraged breast-feeding;

(b) close female friend: 2 women did not respond; the friends of 72(78%) women had influenced their choice of breast-feeding;

(c) mother: 7 women did not respond; the majority, 79(91%) women, said their mothers wanted them to breast-feed;

(d) medical adviser: 2 women did not respond; most of the medical advisers (74 '80%') advocated breast-feeding.

Figure-91 Close contact's influence on breast-feeding



-ii-Influence on bottle-feeding [Figure-92]

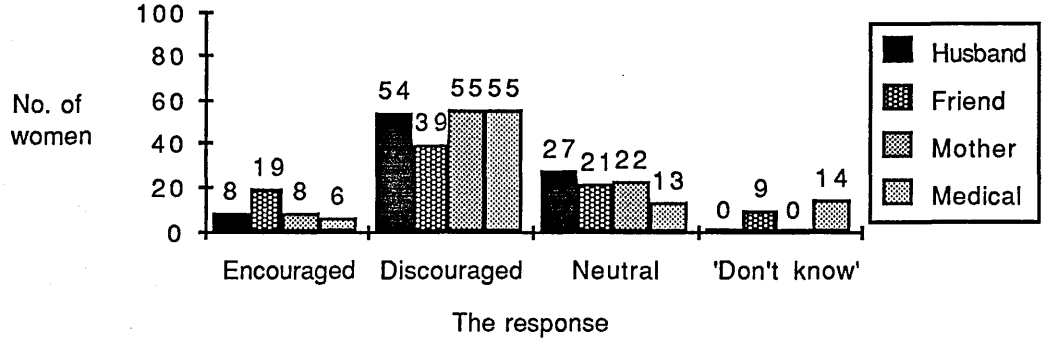
(a) husband: 5 did not respond; although the majority, 54(61%) women, said their husbands did not recommend bottle-feeding, there were 8 husbands who encouraged it;

(b) close female friend: 6 women did not respond; the friends of 21(24%) women were neutral about bottle-feeding while 19(22%) encouraged it;

(c) mother: 9 women did not respond; 8 mothers encouraged bottle-feeding while the mothers of 22(26%) women remained neutral;

(d) medical adviser: 6 did not respond; by this stage there were still 14(16%) women who did not know their medical adviser's attitude to bottle-feeding.

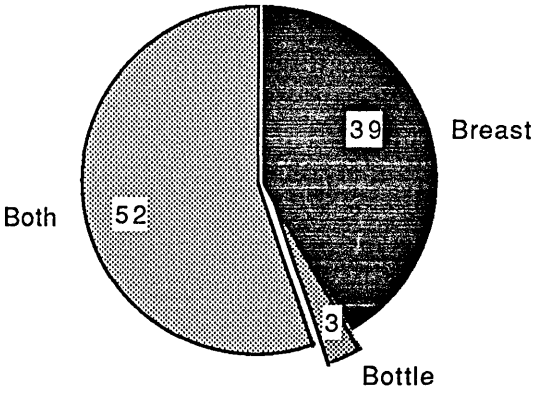
Figure-92 Close contact's influence on bottle-feeding



2-Type of feeding given to the baby at birth.

The majority, 52(55%) women, gave both breast- and bottle-feeding to their babies [Figure-93].

Figure-93 Type of feeding given to the baby



3-Who chose the given feeding method?

Two women did not respond. The majority, 57(62%) women, said that it was their own choice, 25(27%) said that medical personnel had advised them and 9 women were told how to feed by their husbands, parents or relatives. One woman was not certain and said 'Do not know'.

4-Who helps you with your baby?

33(38%) women said their husbands helped them in looking after their babies, 42(48%) said 'Parents and relatives', one had a baby sitter and 11(13%) had nobody to help them but depended on themselves. 7 women did not respond.

IV-Questions related to infant feeding:

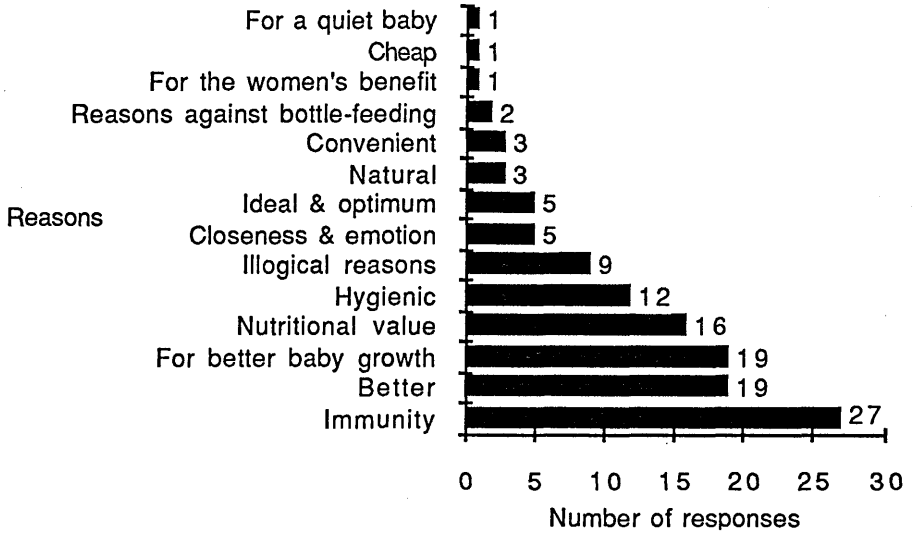
1-Why did you choose to breast-feed your baby?

Out of 91 women (39 who breast-fed entirely and 52 who gave breast- and

bottle-feeding), 28(31%) did not respond.

Most of the remaining 63 women gave three or more reasons for choosing breast-feeding. It was decided to consider the first 3 responses that were mentioned; the commonest reason for breast-feeding, as mentioned by 27(43%) women, was 'It provides immunity to the baby'; one woman said 'Do not know' [Figure-94].

Figure-94 Reasons given for choosing breast-feeding



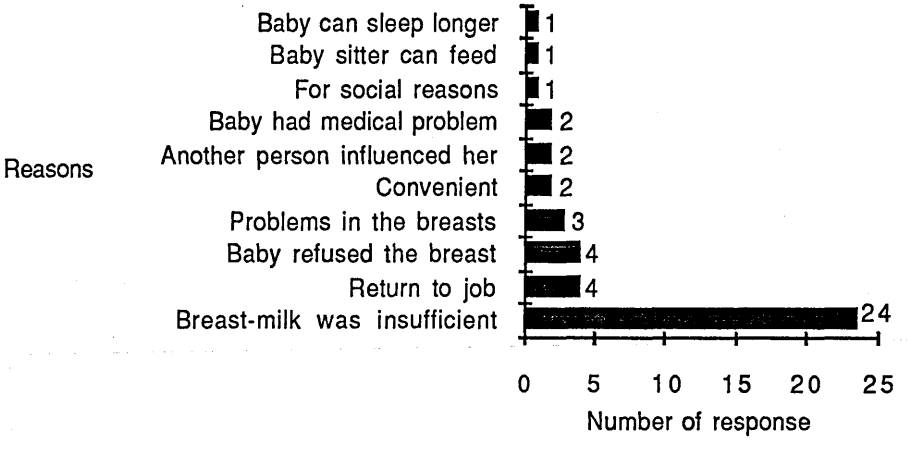
The total number of responses in figure-94 does not add up to 63 (no. of women who gave an answer) because this was an open-ended question.

2-Why did you choose to bottle-feed your baby?

Out of 55 women (3 who bottle-fed and 52 who gave bottle- and breast-feeding), 18(33%) did not respond.

Of the remaining 37 women, the majority, 24(65%), bottle-fed because they thought their breast milk was insufficient [Figure-95].

Figure-95 Reasons given for choosing bottle-feeding



The total number of responses does not add up to 37 because it was an open-ended question.

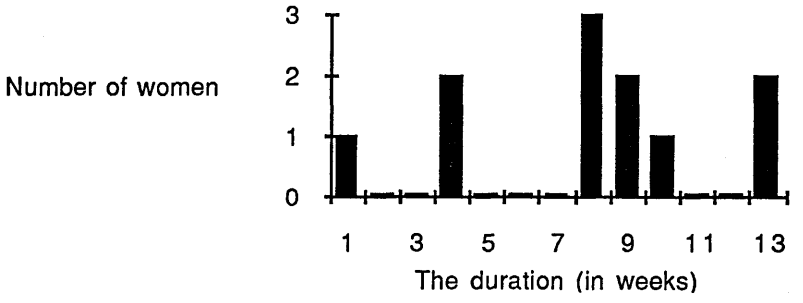
The results of the following 6 questions were related only to the children (total 68) who were 12 ± 2 weeks of age.

3-Are you still breast-feeding, if no, then for how long did you do so?

Out of 67 women (27 who breast-fed entirely and 40 who gave breast- and bottle-feeding), the majority, 56(84%), were still breast-feeding by three months after delivery.

When the 11(16%) women who had discontinued breast-feeding were asked for how long they breast-fed, the duration of breast-feeding ranged from 1 to 13 weeks; 3 women did not respond [Figure-96].

Figure-96 Duration of breast-feeding (among women who had discontinued)



4-Why did you stop breast-feeding?

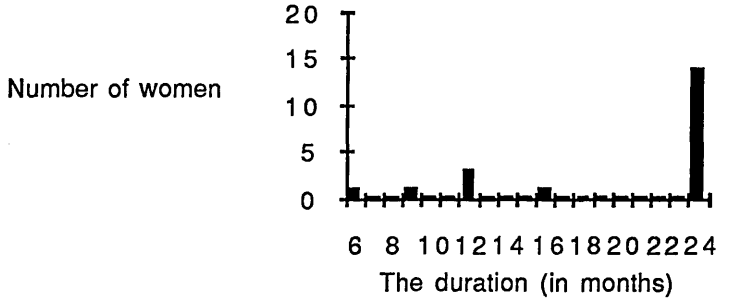
Of the 11 women who had stopped breast-feeding; one did not respond; 5(50%) said 'My baby refused to take breast-feeding'; 2 had medical problems, for instance one said 'I had a common cold' and one said 'My wound after the caesarean section did not heal so it was difficult for me to continue breast-feeding. One women thought her breast-milk was not sufficient; one said 'My breast-milk was not enough and I had to return to my job' and one said 'My nipples were lacerated and my child used to get abdominal pain whenever he sucked the breasts'.

5-For how long do you intend to breast-feed?

Out of the 56 women who were still breast-feeding (either entirely or mixed with bottle-feeding), one did not respond and one said 'Do not know'.

20(36%) gave a fixed time for the duration of breast-feeding of whom the majority, 14 women, wanted to breast-feed for almost two years[Figure-97].

Figure-97 The duration of breast-feeding that the 20 women intended to give



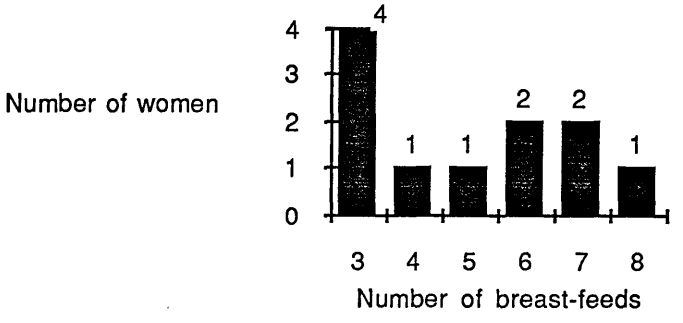
Of the remainig 34(62%) women who gave open answers for the duration of breast-feeding, 23 gave statements related to the baby such as 'As long as the baby wants' and 'Till there is no more milk in my breasts'; 11 women gave mother-related statements such as 'As long as I could'.

6-How often a day do you breast-feed?

Of the 56 women who were still breast-feeding (either entirely or mixed with bottle-feeding), one did not respond; one said 'Do not know' and the majority, 43(78%) women, offered breast-feeding on demand.

The remainig 11(20%) women breast-fed 3 to 8 times a day [Figure-98].

Figure-98 Number of breast-feeds per day

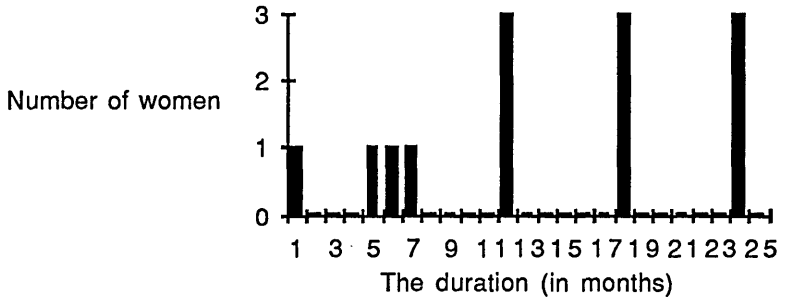


7-For how long do you intend to bottle-feed?

Out of 41 women (one who bottle-fed and 40 who gave bottle- and breast-feeding), 24(58%) did not respond and 4 said 'Do not know'.

The remaining 13 women gave responses ranging from 1 to 24 months [Figure-99].

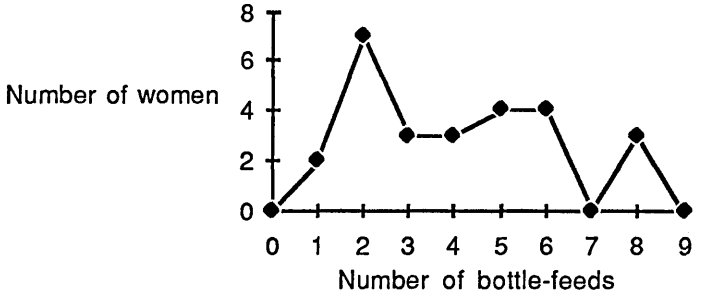
Figure-99 The duration of bottle-feeding



8-How often during the 24 hours do you give bottle-feeding?

Out of 41 women (one who bottle-fed and 40 who gave bottle- and breast-feeding), 15 women did not respond; the remainder gave responses ranging from 1 to 8 bottles a day [Figure-100].

Figure-100 Number of bottle-feeds per day at 3 months



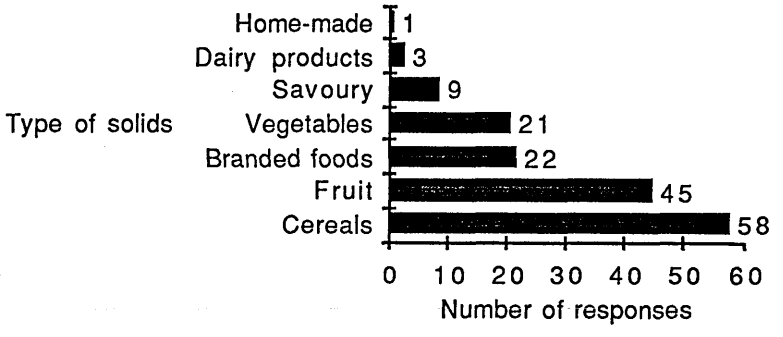
V-Data related to solid feeding:

1-What kind of solid foods have you given or are going to start?

11(12%) women did not respond.

Most women gave more than 3 responses to this question. While the majority, 58(70%), said cereals, 45(54%) women said fruit [Figure-101].

Figure-101 Type of solid foods



The total number of responses in figure-101 does not add up to 83 (no. of women who gave an answer) because it was a multi-response question.

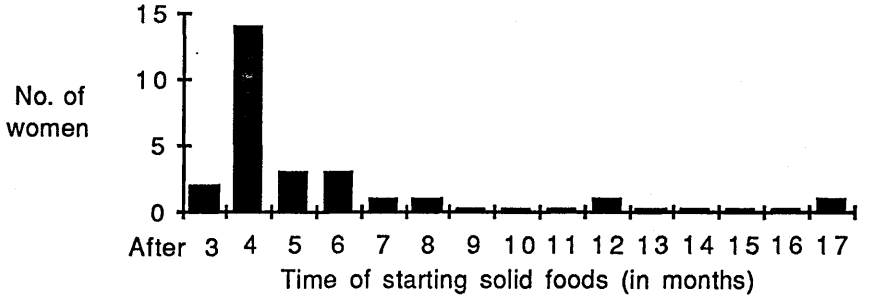
The results of the following 2 questions were related only to the children (total 68) who were 12 ± 2 weeks of age.

2-Have you started giving solid food? If not, then when are you intending to do so?

37(54%) women had already started giving solid foods to their babies.

Of the remaining, 31(46%) women, who had not yet given any solids; 4 did not respond; the majority, 14(52%), wanted to wean their babies at the age of 4 months. One said 'Do not know'[Figure-102].

Figure-102 Time of starting solid foods



3-Have you given any fluids other than milk to your baby? If so, what kind?

One woman did not respond.

By 3 months post-delivery there were still 12(18%) women who did not give any fluids other than milk to their babies while 55(82%) did so.

Of the 55 women who had already given additional fluids, 26(48%) gave a mixture of all kinds of fluids; one did not respond [Table-20].

Type of fluids	No. of women
Water	2(3.7%)
Fresh fruit juices	24(44.4%)
Branded drinks	2(3.7%)
Mixture of fluids	26(48.1%)
Total	54(99.9%)

Table-20 Type of fluids given to babies

VI-Information about the baby:

1-How is your baby and how often had it been unwell?

Although all of the women thought that their babies were healthy the majority, 71(76%), said that since birth their babies had only been occasionally unwell; 17(18%) said 'It had never been unwell' and the babies of 5 women had been frequently ill. One woman did not respond.

2-The characteristics of the baby.

One woman did not respond; 61(66%) women said their babies were quiet and contented, 21(23%) thought that they were noisy and difficult, 5 said 'Although it is quiet and contented sometimes it is noisy and difficult' and 6 women could not describe their babies and said 'Do not know'.

3-Did you find any difficulties in looking after your baby?

2 women did not respond; 74(80%) women had no difficulties, 17(18%) had some difficulties and one was not certain.

4-How and where does your baby sleep at night?

One woman did not respond; the majority, 80(86%) women, had babies who slept well at night while 13(14%) babies did not.

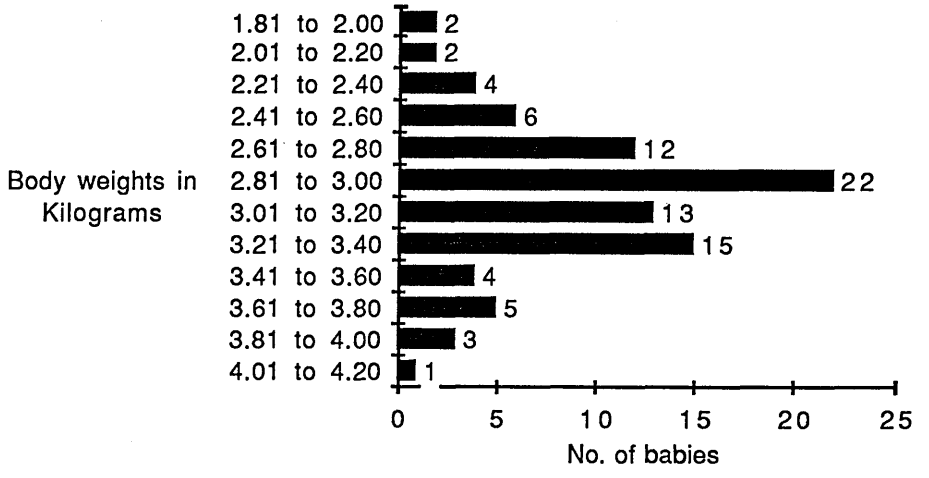
Out of 94 babies the majority, 85(90%), slept in their mother's room but in their cots; the babies of 8 women did not only sleep in the same room but with their mothers in the same bed. Only one woman kept her baby in a separate room.

6-The body weight of the babies at birth.

(i) Of all the babies:

2 women did not respond and 3 said 'Do not know'; the body weight of the remaining 89 babies at birth ranged from 1.88 Kg. to 4.02 Kg. with a mean of 3.015 Kg.; standard deviation was 0.43; mode 3 ; median 3 [Figure-103].

Figure-103 The body weight of all babies at birth

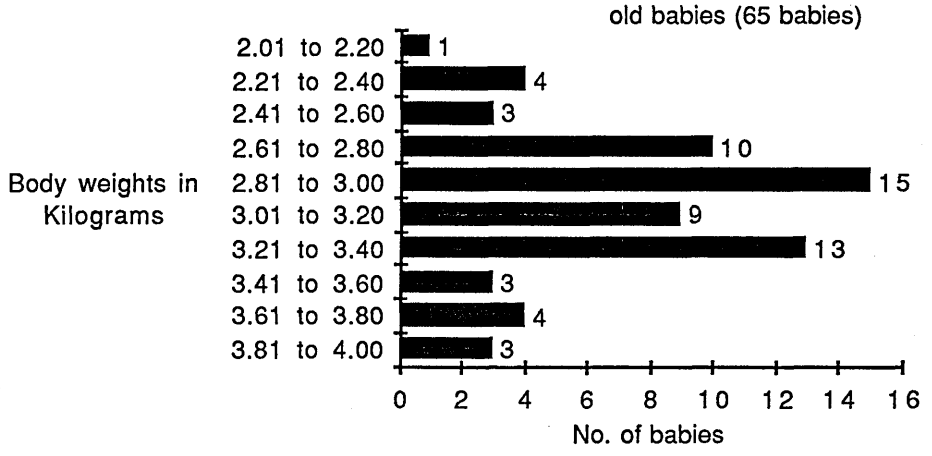


(ii) Of the 68 babies who were 10 to 14 weeks of age:

The birth body weight of the 68 babies who were 10 to 14 weeks of age, when the questionnaire was completed, ranged from 2.11 to 3.87 Kg. with a mean of 3.05 Kg.; standard deviation was 0.4; median 3; mode 3 [Figure-104].

3 women could not tell the body weight of their babies at birth so said 'Do not know'.

Figure-104 The body weight at birth of the 3 months old babies (65 babies)

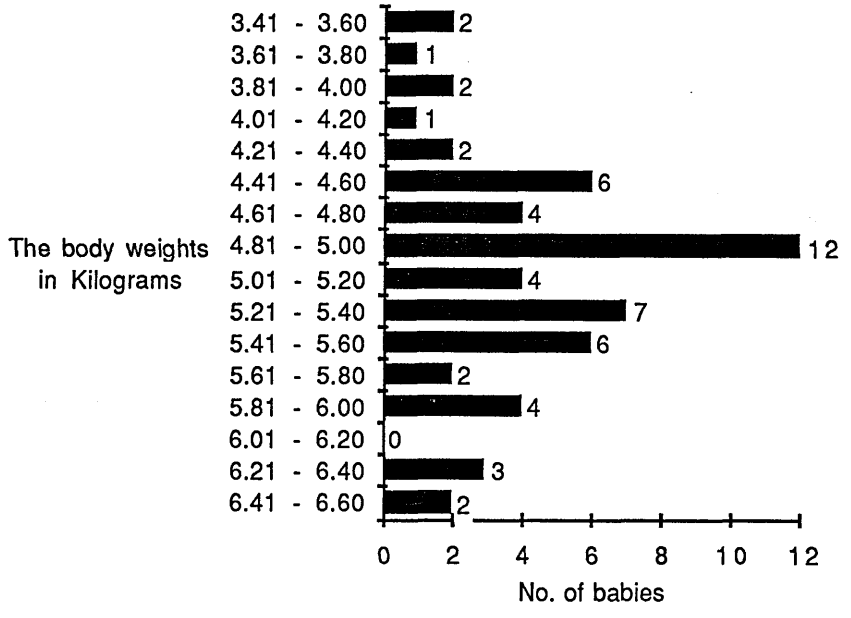


6-<u>The body weight of the 68 children about 3 months post-delivery:</u>

5 women did not respond; 5 women said 'Do not know'.

The body weight of the remaining 58 children ranged from 3.50 to 6.60 Kg. with a mean of 5.1; standard deviation was 0.71; median 5; mode 5 [Figure-105].

Figure-105 The birth's body weight of the babies at 3 months (58 babies)



The results of the following question was related only to the children (total 68) who were 10 to 14 weeks of age.

7-<u>Has your baby received its first immunization? If not, then why?</u>

The majority of babies (64 '94%') had been immunized while 4 had not.

Of the 4 women who had an unimmunized baby, 2 said 'Baby was still young and no appointment received' and 2 said 'Baby had low body weight'.

Summary:

By this stage of the study 85% of the total women who were originally selected for this project were still participating in the study.

About 20% of the women had returned to their jobs of whom the majority left their babies under the care of their parents and relatives during their absence.

The majority of women had normal deliveries except for less than one-quarter who had forceps, suction or induced labour and most thought that the birth was earlier or later than the expected date of delivery. Most of the women and babies stayed 3 or 4 days in hospital but some were kept for a much longer time.

The number of male babies was slightly greater than the female ones.

Although not all the babies were precisely 3 months old at the time of completing the questionnaire, the majority were between 10 and 14 weeks.

Close contacts such as husbands, mothers, friends and medical advisers had an influence on the women's choice of infant feeding; while more than three-quarters of them had encouraged breast-feeding and supported the women while doing so, about one-half had discouraged bottle-feeding.

Although the majority gave both types of feeding (breast- and bottle-feeding) to their babies, the number of women who only bottle-fed was insignificant. 60% of the mothers made their own decision about the type of feeding, but one-quarter had been advised by medical personnel about the feeding method. Most chose to breast-feed because they said it provided immunity to their babies and because they believed that breast milk was better. Although the majority were still breast-feeding by 3 months after delivery most fed on demand and a large number of them wanted to breast-feed for two years. The duration of breast-feeding given by those who discontinued ranged from 1 to 13 weeks and the most common reason given for stopping was 'My baby refused the breasts'

Of those who chose to bottle-feed the majority did so because they thought that their breast milk would not be sufficient for their babies; most gave 2 bottles per day and a large number of them wanted to bottle-feed for more than 12 months.

More than half of the babies were given solid foods. Cereals and fruits were among the mentioned foods with which the women weaned or wanted to wean their babies.

All of the women thought their babies were healthy: the majority of babies had been occasionally unwell and almost all had been immunized.

Almost 90% of the mothers had somebody to help them to look after their babies.

Most of the women described their babies as quiet and contented. The majority had their babies' cot in their own room and less than 10% of the babies slept with their mothers in the same bed. The body weight of all babies ranged from 1.88 to 4.02 Kg.

V-Fifth stage, information from mothers six months after their deliveries:

Information was collected by postal questionnaires from the same population sample when their babies were about six months of age.

Please note:

The questionnaires for both Glasgow and Bahrain were intended to obtain iformation on the feeding habits of children at 6 months post-delivery. However some of the questionnaires returned related to children below 6 months and some to children above 6 months of age. Therefore, those questions which were geared to obtain information about feeding habits were analysed in relation to children who were 26 $\pm$ 2 weeks of age at the time of completing the questionnaires.

I-Phase 1 in Glasgow:

Response rate.

Out of the 82 women to whom questionnaires were posted 73(89%) responded. Despite several reminders, after the addresses had been rechecked, 9 women failed to respond.

Of the 73 respondents; 45(55%) replied immediately after receiving the questionnaires; 24(29%) women were reminded once and 4(5%) had to be reminded twice.

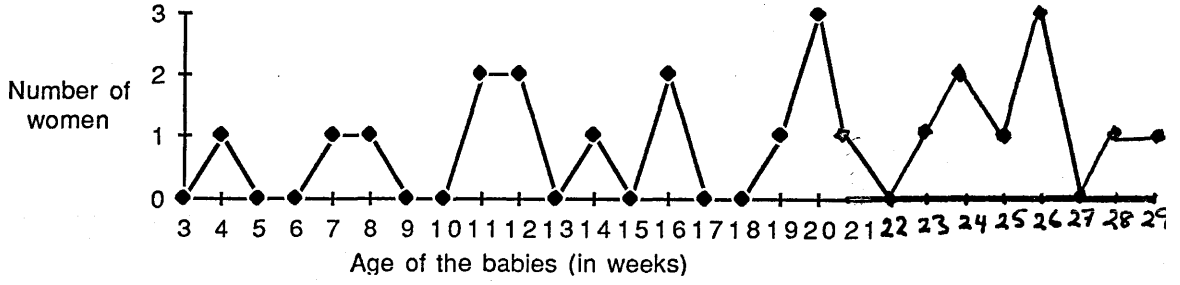
I-Social and personal data:

1-Do you work? If yes, then what was your baby's age when you returned to work?

19(26%) women had full-time jobs while 6 had part-time jobs and 48(66%) were not working.

Of the 25 women who had returned to their jobs, one could not remember when she restarted work while the remaining 24 gave responses ranging from 4 to 29 weeks. The mean baby age when the women returned to their work was 18.4 weeks; standard deviation was 7.19; median 20; mode 20 [Figure-106].

Figure-106 Age of the babies when the 24 women returned to work



2-Who looks after your baby while you are at work?

Out of the 25 working mothers; 13 left their children in the care of their parents or relatives, the husband or partners of 3 women looked after the children, 2 said 'Friends or neighbours', 3 took their babies to a child-minder, 3 said 'Nursery' and one woman had nobody to take care of her child.

II-Questions related to feeding:

1-If you had to return to work while you were breast-feeding, what type of feeding did you wish to choose while you were at work?

Out of the 33 women who started breast-feeding 12 had jobs.

Of the 12 women only 7 had returned to their work while they were breast-feeding.

Of those 7 women, 4 wanted to bottle-feed their babies while at work, 2 wanted to continue breast-feeding and one said 'Both'.

The following 6 questions were related only to the children (total 57) who were 26 ± 2 weeks of age.

2-Do you still feed in the same way as you began? If not, what did you change to?

Of the 57 women, 38(68%) were still feeding in the same way as they had begun while 18 were not. One woman did not respond.

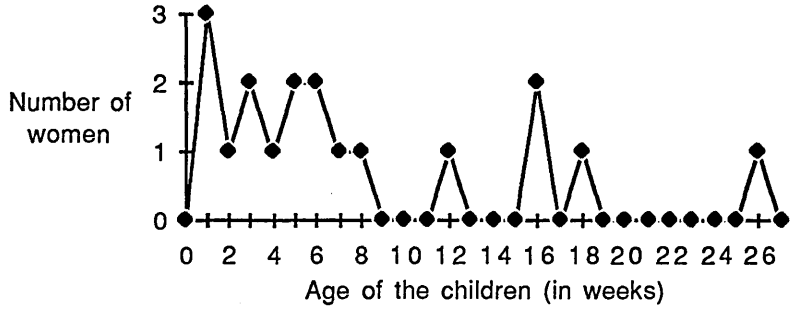
Of the 38 women, 10 were breast-feeding and 28 were giving bottle-feeding.

Of the 18 women who were not feeding in the same way, 13(76%) had changed to bottle-feeding, 3 to both (breast- and bottle-feeding) and one had changed to fresh cow-milk. One woman did not respond.

3-When did you change the type of feeding?

The 18 women who had stopped giving the same type of feeding as they had started after birth gave the time of changing the feeding method in relation to their babies' age. The responses ranged from 1 to 26 weeks with a mean of 7.8 weeks; standard deviation was 7.0; median was 5.5 [Figure-107].

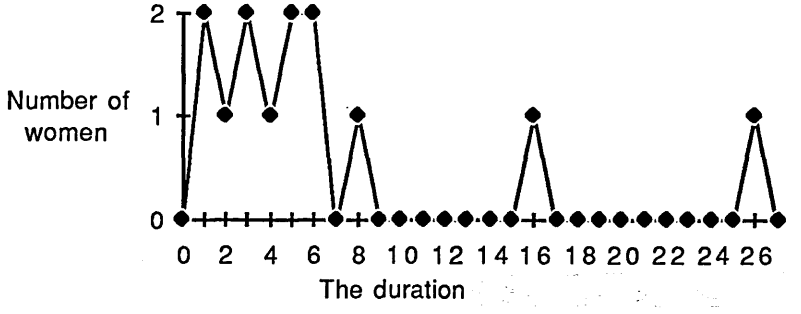
Figure-107 Age of the babies when the 18 women changed the given feeding method



4-For how long did you breast-feed?

Out of 26 women who breast-fed their babies (either entirely or mixed with bottle-feeding), 13(50%) were still doing so by six months post-delivery while the remaining 13 women breast-fed for a period ranging from 1 to 26 weeks with a mean duration of 6.6 weeks; standard deviation 7.0; mode was 1; median 5.0 [figure-108].

Figure-108 Duration of breast-feeding given by 13 women



5-If breast-feeding was discontinued for other than medical reasons, do you think you needed support or advice so you could continue it? If so, what advice and from whom?

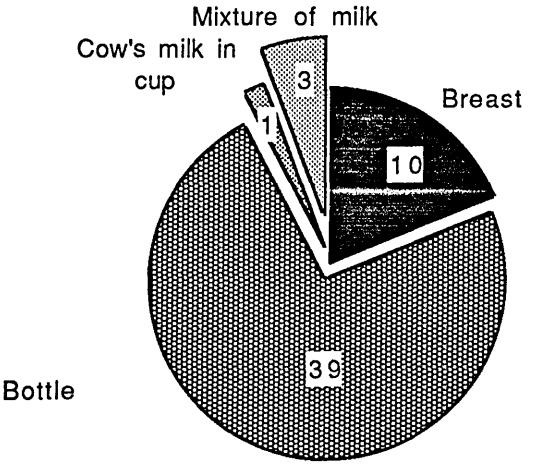
Out of 13 women who had started but later discontinued breast-feeding; one did not respond and only 3 thought that they should have been supported or encouraged by husband, relatives or health visitor so they could have continued to breast-feed. For instance 2 said 'I needed support and encouragement' and one said 'I should have been given privacy in order to breast-feed'.

6-What kind of milk do you mainly give now to your child?

4 women did not respond.

The majority, 39(74%) women, gave artificial formula, 10(19%) said 'Breast-milk', one gave fresh cow-milk in a cup and 3 said a mixture of milks without specifying the type[Figure-109].

Figure-109 The main type of milk given to the babies



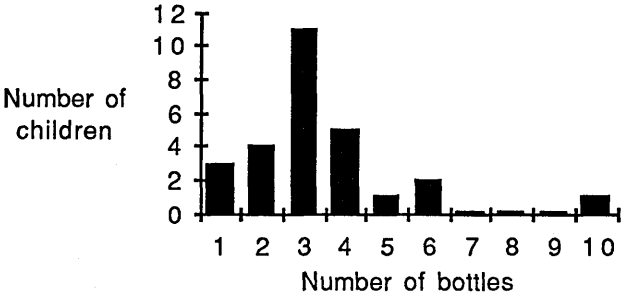
7-Does your child get a bottle at every feed? If not, then how often?

Of the 57 women; one did not respond and only 8(14%) did not give a bottle to their children by six months post-delivery.

Out of the remaining 48 women, 20(42%) gave one bottle at every feed to their children while 28(58%) women gave a bottle at some of the day's feeds.

The number of bottles given by the 28 women to their babies ranged from 1 to 10 bottles a day with an average of 3 bottles per day; one woman could not remember how often she gave her baby a bottle so said 'Do not know' [Figure-110].

Figure-110 Number of bottle-feeds per day



III-Knowledge and information of infant feeding:

1-The advantages and the disadvantages or difficulties of the feeding method used.

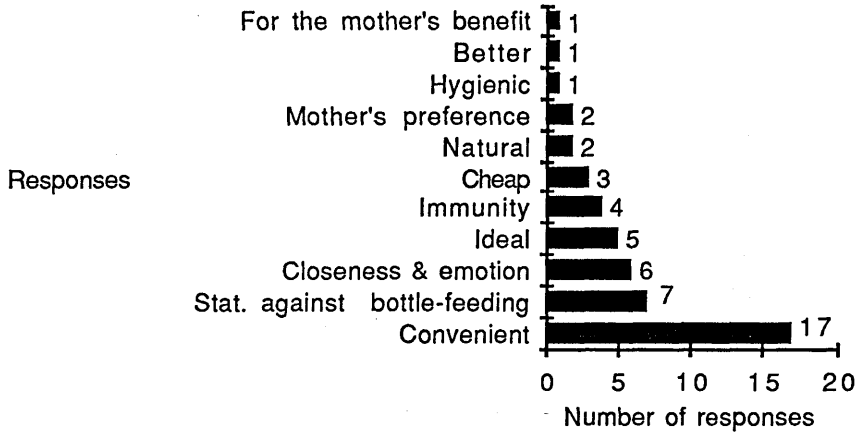
Most women gave 2 responses to this question which were considered in the results.

(i)-Breast-feeding:

* Advantages;

Out of 33 women who breast-fed the majority, 17(51%), thought that the advantage of breast-feeding was that it was convenient [Figure-111].

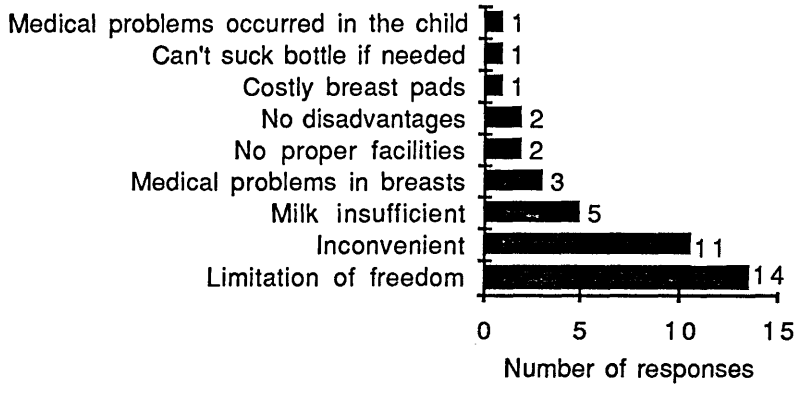
Figure-111 Advantages of breast-feeding



* Disadvantages or difficulties;

Out of 33 women who breast-fed, 2 did not respond and the majority, 14(45%), said 'Limitation of freedom with breast-feeding' [Figure-112].

Figure-112 Difficulties and disadvantages of breast-feeding

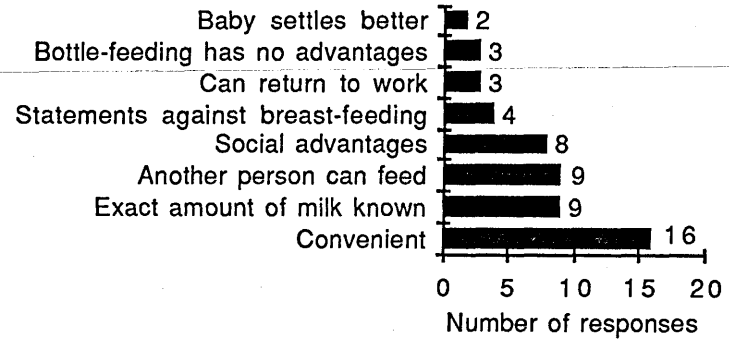


(ii)-Bottle-feeding;

* Advantages;

Out of 40 women who bottle-fed, 11 did not respond. The majority, 14(48%), said 'Bottle-feeding is convenient' [Figure-113].

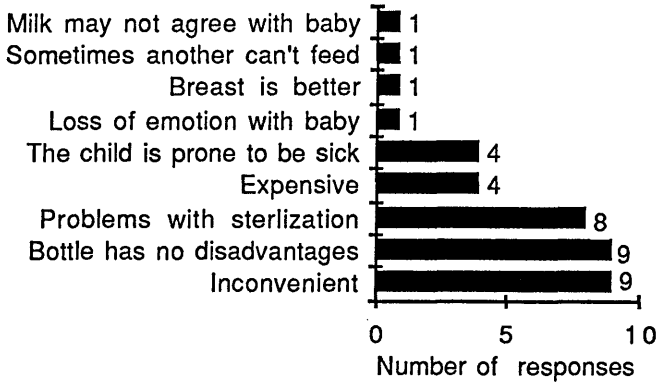
Figure-113 Advantages of bottle-feeding



* Disadvantages or difficulties;

Out of 40 women who bottle-fed, 21 did not respond, 9(47%) said 'Bottle-feeding was not convenient' and 9 women said that they had found no difficulties or disadvantages with bottle-feeding [Figure-114].

Figure-114 Difficulties and disadvantages of bottle-feeding



2-If you had the choice now would you still like to feed in the same way as you began? If not, then why?

One woman did not respond; 6 women were not certain so said 'Do not know'.

The majority, 61(85%) women, said 'I would choose the same method'.

The reasons mentioned by the remaining 5 women for not choosing the same type of feeding were; 4 women said 'I would like to breast-feed' and one said 'Do not know'.

3-Have you obtained, since your child's birth, any further information about infant feeding? If so, from where?

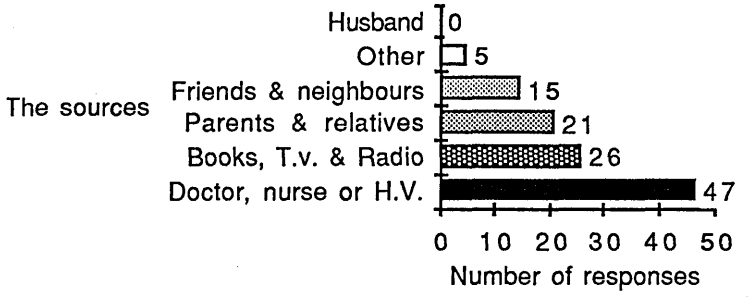
3 women did not respond.

60(86%) women had obtained more information while 10(14%) said 'No'.

The majority, 47(77%) women, said that their doctor, nurse or health visitor was the source of information about infant feeding.

Of the 5 women who said 'Other', 2 said 'Baby food makers', one said 'Nursery's books' and one said 'From the clinic' [Figure-115].

Figure-115 Sources of information



Please note that the total number of responses in the above figuredoes not add up to 61 (no. of women who gave an answer) because it was a multi-response question.

4-Is there any information that you were not told that you think is important?

20 women did not respond.

9 women said they had been told everything and 17 said 'Do not know'.

Out of the remaining 27 women 10(37%) said 'I was not given information about solid feeding', 7(26%) said 'Information about weaning', 6 wanted general knowledge such as 'Local stores that have feeding and changing facilities'; 2 women thought they were not given any medical advice such as 'What to do if they developed a sore-nipple' and 'Information about breast-milk, how long does it take to be formed and how long is it for milk to be emptied from the breasts?'; two mothers said that they had not been given information about areas related to psychosocial and technical aspects such as 'Problems of breast-feeding and how to overcome them' and 'Techniques of bottle sterlization'.

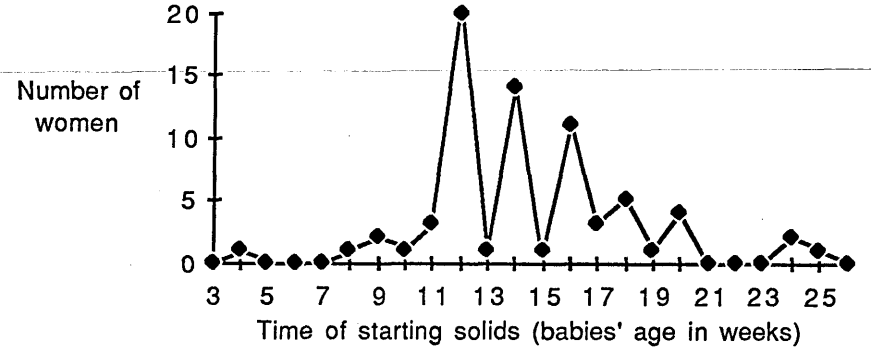
IV-Information about solid feeding:

1-When did you start giving solid feeding to your child?

One woman did not respond and one had not yet started giving her child solids .

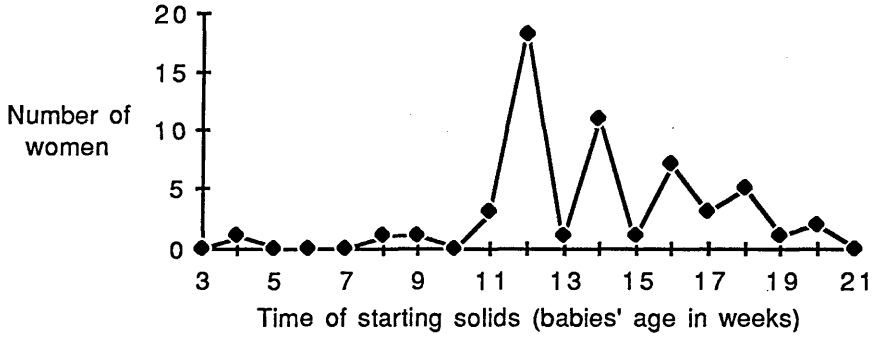
The responses given by the mothers ranged from 4 to 25 weeks; the majority weaned their babies at 14 weeks with a mean of 14.4 weeks; standard deviation was 3.7; mode 12; median 14 [Figure-116].

Figure-116 Time when solid foods was started to all babies



The time of starting solid feeding given by the 57 women whose children were about 6 months of age ranged from 4 to 20 weeks with a mean of 13.9 weeks. Of the 57 women; one did not respond and one woman had not yet started solid feeding to her child [Figure-117].

Figure-117 Time when solid foods was started to the 6 months old babies (55)



The following 8 questions were related to those children (total 57) who were 26 ± 2 weeks of age.

2-What kind of foods do you give your child?

One woman did not respond and one had not yet started giving her child solids.

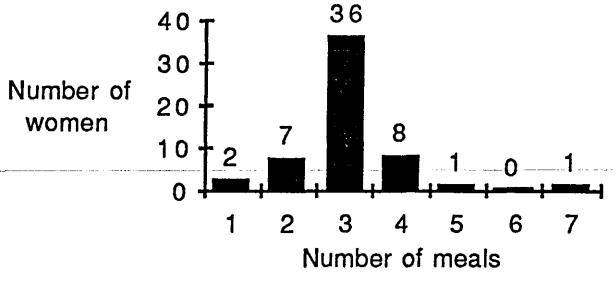
35(64%) women gave a special baby food, 10(18%) gave normal family food and 10(18%) gave a mixture of family and baby foods.

3-How many meals a day do you give your child?

One woman did not respond and one had not yet started giving her child solids.

The responses given by the remaining 55 women ranged from 1 to 7 meals per day; the majority, 36(65%), gave 3 meals per day [Figure-118].

Figure-118 Number of main meals given to the 55 children a day

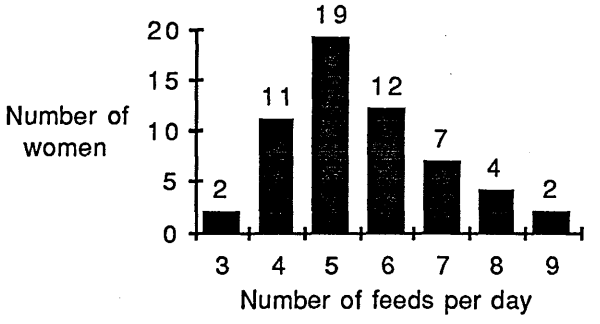


V-Description of a one day meal:

1-Number of feeds per day: of this how many solid , liquid or mixed feed given?

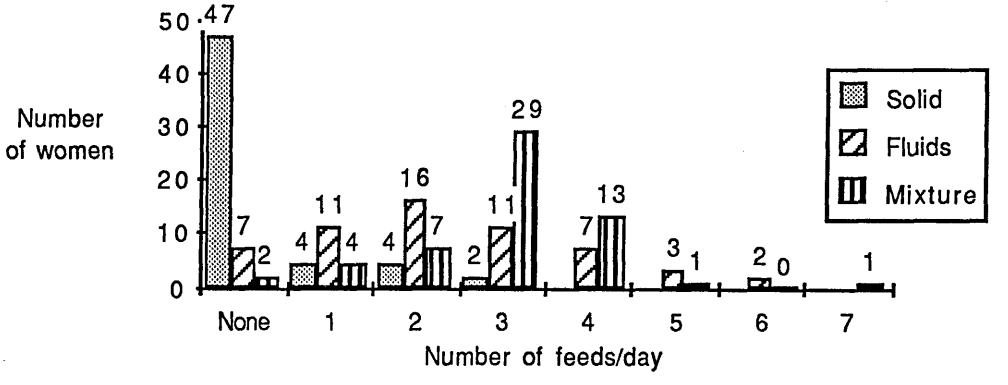
The number of feeds ranged from 3 to 9 feeds per day with a mean of 5 feeds per child per day [Figure-119].

Figure-119 Number of feeds given each day (to 57 babies)



The number of solid feeds ranged from 1 to 3 feeds per day; liquid feeds were 1 to 6 and mixed solid and liquid feeds ranged from 1 to 7 feeds per day [Figure-120].

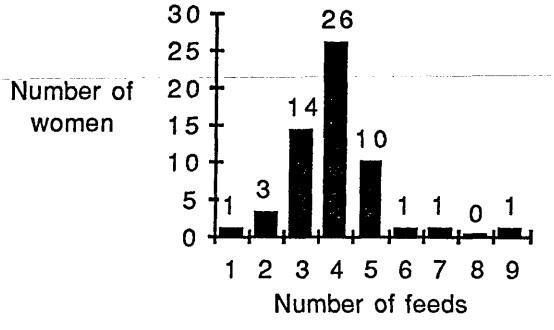
Figure-120 Number of various type of feeds given each day (to 57 babies)



2-How many milk feeds or juice drinks given per day?

The number of milk feeds ranged from 1 to 9 feeds per day with a mean of 4 feeds while that of the juice drinks ranged from either no juice given to 3 drinks per day [Figure-121].

Figure-121 Number of milk feeds given each day (to 57 children)



When the women were asked how many juice drinks they gave their children, 19 said 'I do not give any juices', 20 gave one drink a day, 13 gave 2 and 5 gave 3 drinks of juice every day.

3-The breakfast meal.

(i) Type of solid foods given in breakfast.

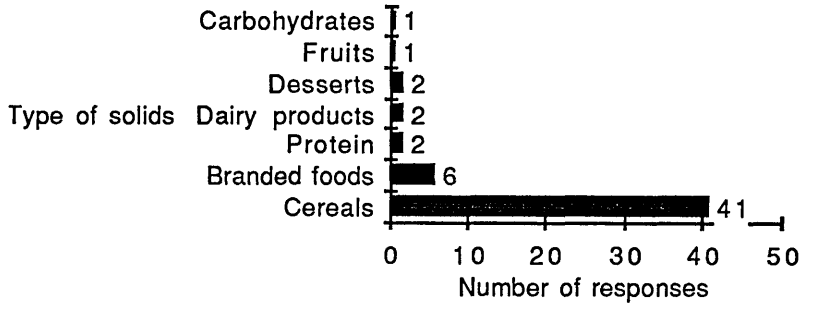
Six women did not give their children any solid foods in the morning.

All the responses of the women with regard to the kinds of solids were gathered into 10 groups as follow;

branded foods such as baby dinner, robinson foods and heinz savoury; protein such as steak, minced, beef, beef and chicken casserole and eggs; cereals, porrage, rusk and biscuits; dairy products such as cheese and yogurt; vegetables such as potato, carrots etc.; desserts such as sweets, delights, pudding and custard; carbohydrates such as rice, macaroni and bread; fruits; soup and family foods.

The majority, 41(80%) women, gave breakfast cereals [Figure-122].

Figure-122 Type of solid foods given at breakfast (to 51 babies)



The total number of responses in the above figure does not add up to 51 (no. of women who gave an answer) because it was an open-ended question.

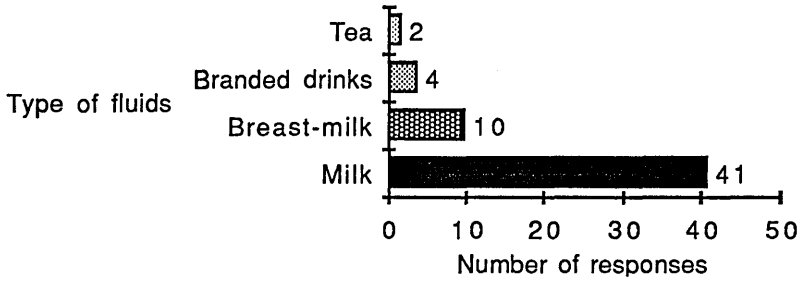
(ii)-Type of fluids given with the breakfast meal:

2 women did not add any fluids to the breakfast.

All the responses of the women rgarding the type of fluids were put into 6 groups; water; fresh juices; milk; breast-milk; tea and branded drinks such as delrosa, fennel and infant drinks and ribena.

The majority, 41(74%) women, gave milk in a bottle or a cup [Figure-123].

Figure-123 Type of fluids given at breakfast (to 55 babies)



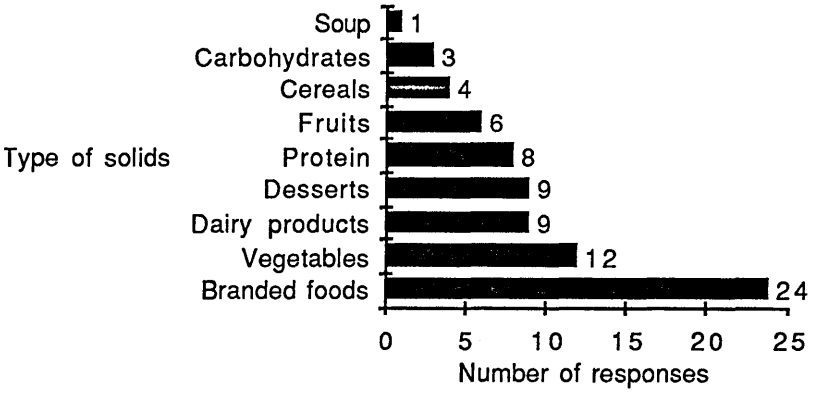
The total number of responses in the above figure does not add up to 55 (no. of women who gave an answer) because it was an open-ended question.

4-The mid-day meal.

(i)-Type of solids given in the mid-day meal:

One woman did not add solid foods in her child's mid-day meal while the majority, 24(43%) women, gave branded foods [Figure-124].

Figure-124 Type of solid foods given in mid-day meal (to 56 babies)



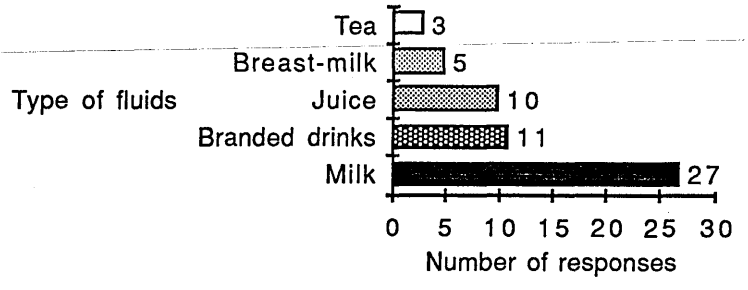
The total number of responses in the above figure does not add up to 56 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the mid-day meal:

4 women did not give any fluids with the mid-day meal.

Figure-125 shows the various type of fluids given.

Figure-125 Type of fluids given in mid-day meal (to 53 babies)



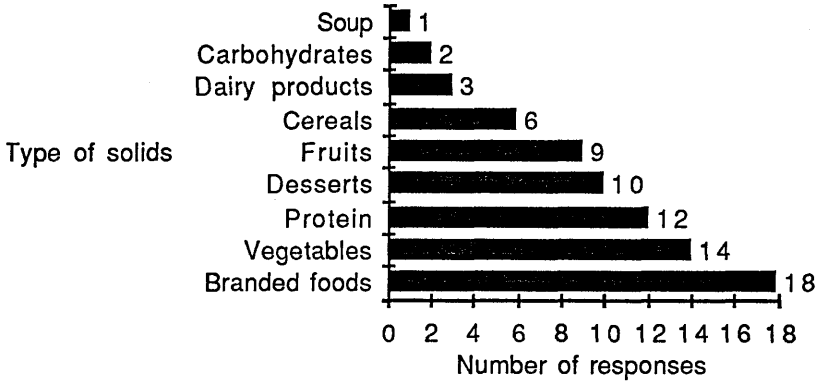
The total number of responses does not add up to 53 because it was an open-ended question.

5-The evening meals.

(i)-Type of solids given in the evening meal:

3 women did not add solid foods in their children's evening meals while the remainder gave solids as shown in figure-126.

Figure-126 Type of solid foods given at evening meal (to 54 babies)

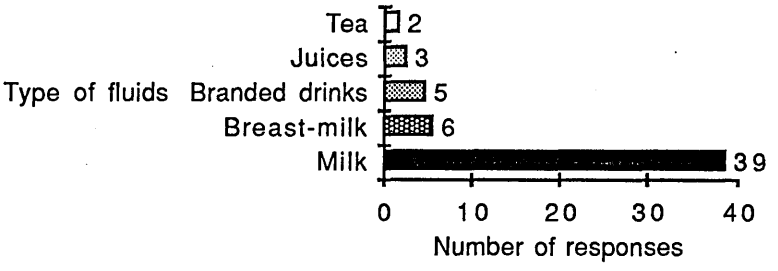


The total number of responses in the above figure does not add up to 54 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the evening meals:

Three women did not give fluids with the evening meal while the majority, 39(72%) women, gave milk in a cup or in a bottle [Figure-127].

Figure-127 Type of fluids given with evening meals (to 54 babies)



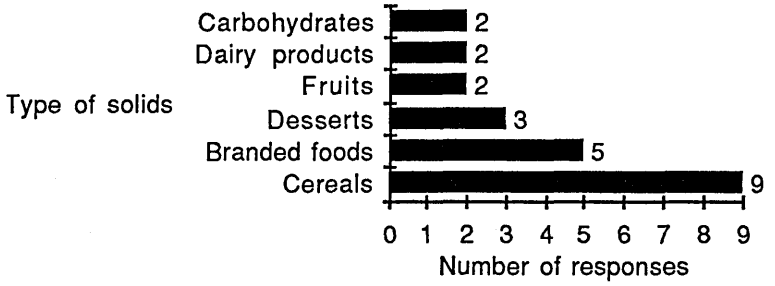
The total number of responses in the above figure does not add up to 54 (no. of women who gave an answer) because it was an open-ended question.

6-The additional meals.

(i)-Types of solids given in the additional meals:

2 women did not give any additional meals and 35 added no solids to their children's additional meals [Figure-128].

Figure-128 Type of solid foods given at additional meal (to 20 babies)



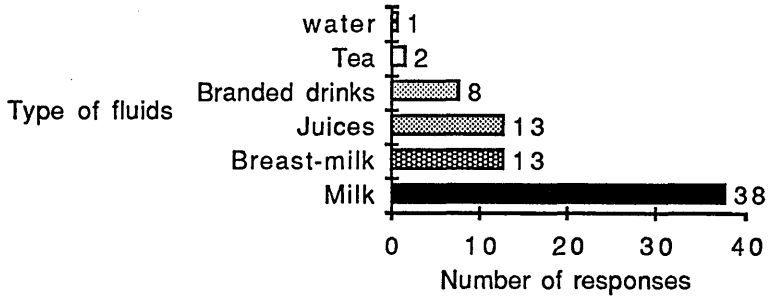
The total number of responses in the above figure does not add up to 20 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the additional meals:

2 women gave no fluids.

Of the 55 women the majority, 38(69%), gave their children milk at an additional meal [Figure-129].

Figure-129 Type of fluids given with additional meals (to 55 babies)



The total number of responses in the above figure does not add up to 55 (no. of women who gave an answer) because it was an open-ended question.

VI-Questions related to intentions:

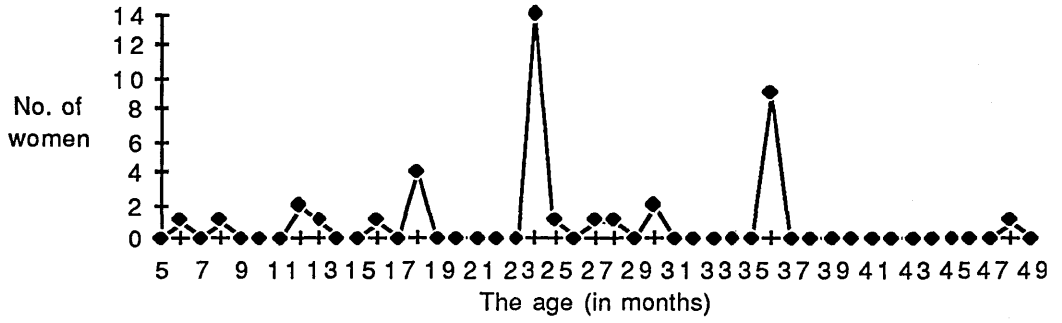
1-Do you intend to have another child? If yes, then when?

The majority, 45(62%) women, wanted to have another child while 12(16%) did not want to and 16(22%) were not certain.

When the women were asked when would they like the next pregnancy, 46 women responded of whom 7 said 'Do not know' while the remainder gave their response in relation to their existing children's age. This ranged from 6 to 48 months; the commonest was 24 months (14 '30%' women).

The mean child's age when the next baby was wanted was 25.3 months [Figure-130].

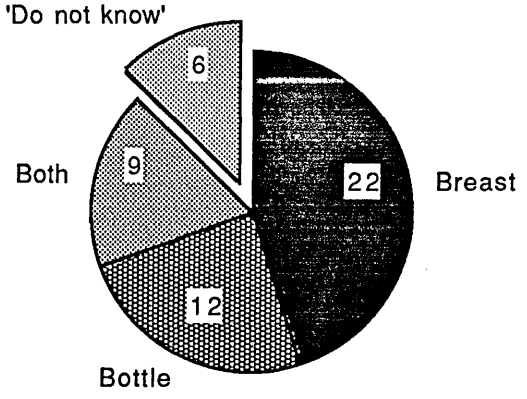
Figure-130 The age of the present child when next baby wanted



2-What type of feeding do you intend to give your next baby?

Out of the 49 women who responded to this question, 22(45%) wanted to breast-feed, 12(24%) would bottle-feed and 6 women said 'Do not know' [Figure-131].

Figure-131 Type of feeding to be given to the next baby

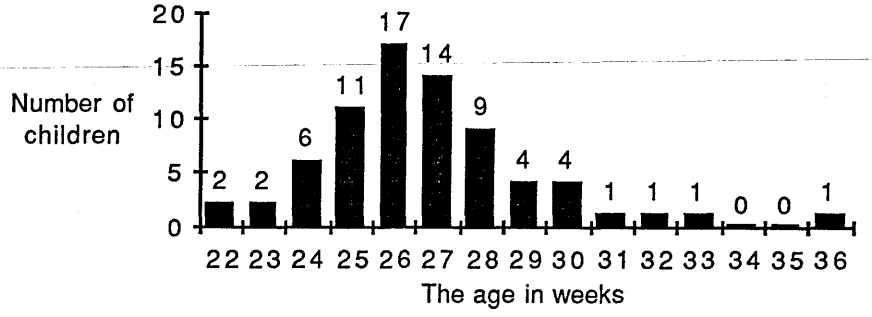


VII-Information about the child:

1-Age of the child.

The age of the children at the time the questionnaires were completed ranged from 22 to 36 weeks; the age of the majority, 57(78%), ranged from 24 to 28 weeks. The mean age was 26.7 weeks; mode was 26 and standard deviation was 2.38 [Figure-132].

Figure-132 Age of the babies



2-How often has your baby been unwell?

2 women did not respond.

The majority, 36(51%) children, had been very occasionally unwell, 31(44%) had never been sick and 4 children had had frequent attacks of illness.

3-Does your child suffer from any chronic illness?

Two women did not respond.

69 children did not have any medical problems while one had milk allergy and enlarged spleen and one had a hiatus hernia.

4-How and where does your child sleep at night?

Two women did not respond to the first part of this question.

63(89%) children slept well while 8 did not.

Out of 73 mothers, 42(58%) said their children slept in a separate room while the beds of 30(42%) children were in same bedroom as the mothers. One woman did not respond.

5-Have you found any difficulties in looking after your child?

One woman did not respond. All of the remainder did not have any difficulties.

6-How is your baby?

One woman did not respond.

All of the women, except 3, said that their children were healthy.

Summary:

Three-quarters of the originally selected women responded to this final stage of the study. By six months post-natally about 60% of women were not working but were either house-wives or unemployed. The mean age of the babies when the remainder of women returned to their work was 18 weeks; most of them left their children in the care of their parents or relatives during their absence.

Of the two-thirds of women who were still feeding their babies in the same way as they had started post-delivery the majority were giving bottle-feeding. The majority of those who had stopped feeding their babies in the same way as they had started changed to bottle-feeding. 7 weeks was the mean duration of breast-feeding given by those women who had discontinued it.

Although by this time the majority of children were bottle-fed, about 20% of the mothers were still breast-feeding.

Three was the commonest number of bottle-feeds per day that the bottle-fed children received.
Although 'Convenient' was the commonest advantage of breast-feeding given by women who chose to breast-feed, the majority, when asked about its disadvantages, thought that it was not convenient and it tended to limit their freedom.
Of those women who gave bottle-feeding the majority thought that its advantage was that it was convenient and handy while the main drawback of bottle-feeding stated by the majority was that it was not easy and the methods of bottle sterlization were complicated and difficult.

Most women, if they had the choice, insisted on choosing the same method of feeding as they had started after their child's birth.
Post-delivery there were only a few women who had not obtained any further information about infant feeding and of those who had received such information the majority said that their doctors or nurses were the main source of information. But a few women thought that there were areas of information they were not told during pregnancy which they thought were important.

The mean age of babies when weaning was started was 14 weeks. The majority of children at six months of age were still given special baby foods. Babies were given an average of 5 feeds per day (which could either be solid, liquid or a mixture of solid and liquid feeds).

Cereals were the main solid food and milk was the main fluid served at breakfast by the majority of women while in the mid-day meal the most common solid food was the branded ready-made commercially available foods. Milk remained the main fluid given at lunch. Although the majority of women gave branded ready-made foods to their children in the evening meal, vegetables were the next choice of solid.

About one-third of women gave their babies an additional 4th meal during the day of which cereals constituted the main solid food and milk was the main fluid.
Although most of the children slept well at night the majority slept in a separate room. Almost all women thought that their children were healthy.
Of the three-fifths of the women who wanted to have another child most wanted it after two years. Breast-feeding was the commonest method of feeding chosen by the majority of mothers for their next child.

II-Fifth stage - Phase 2 in Bahrain:

Response rate.

Out of 94 women who responded to the previous stage of the study and to whom questionnaires were posted, 91(97%) replied and despite several reminders the remaining 3 women failed to respond.

Of the 91 respondents; 52(57%) replied immediately after receiving the questionnaire, 30(33%) responded after being reminded once. 9(10%) women had to be reminded twice.

I-Social and personal data:

1-Do you work?

One woman did not respond.

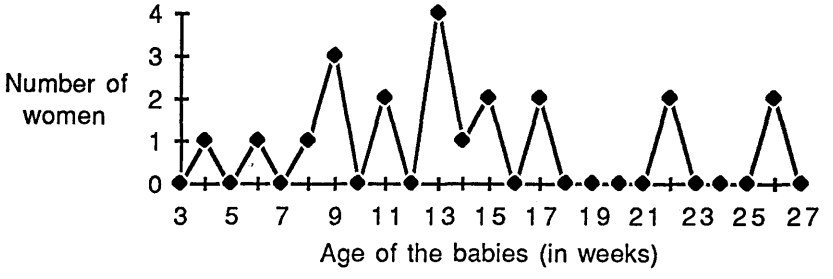
The majority, 68(77%) women, were house-wives; 3 were students; 11(12%) had full-time jobs and 8 had part-time jobs.

2-Age of baby when women returned to work.

Out of the 22 women who were working or were students, one did not respond.

The baby's age at the time when mothers returned to their jobs or to their educational institute ranged from 4 to 26 weeks with a mean of 13.9 weeks. The standard deviation was 6.05 [Figure-133].

Figure-133 Age of the babies when the 21women returned to work



3-Who looks after your baby while at work?

Out of the 22 women who were working or were students, one did not respond.

The children of 15 women were looked after by husbands, parents or relatives; 4 by baby-sitters; one by a neighbour and one child was in a nursery.

II-Questions related to feeding:

1-If you had to return to work while you were breast-feeding, what type of feeding did you wish to choose while you were at work?

Of the 22 women who had done so, 7 did not respond.

10 wanted to continue breast-feeding while at work, 4 liked to give bottle-feeding and one said 'Do not know'.

The following 6 questions were related only to those children (total 65) who were 26 ± 2 weeks of age.

2-Do you still feed in the same way as you began? If not, what did you change to?

Of the 65 women, 35(55%) were still feeding in the same way as they had begun while 29(45%) were not; one woman did not respond.

Out of the 35 women who were still feeding in the same way as they had started, 22 were breast-feeding, 5 were bottle-feeding and 8 were giving both (breast- and bottle-feeding).

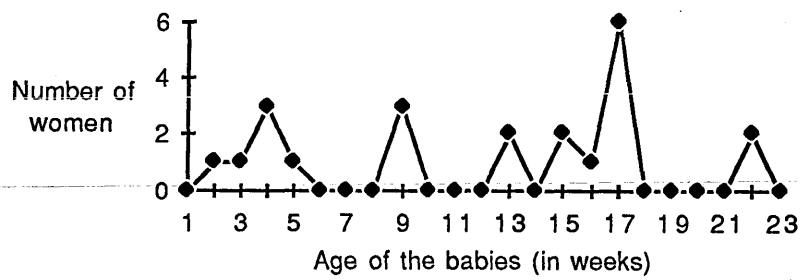
Of the 29 women who were not feeding in the same way as they had begun the majority, 21(72%), had changed to bottle-feeding while 8(27%) had changed to both breast- and bottle-feeding.

3-When did you change the type of feeding?

The child's age when the feeding method was changed by the 29 women ranged from 2 to 22 weeks with a mean of 12.1 weeks; standard deviation 6.3; median 14; mode 17.

4 women could not remmember and said 'Do not know'; 3 women did not respond [Figure-134].

Figure-134 Age of the babies when the 22 women changed the given feeding method



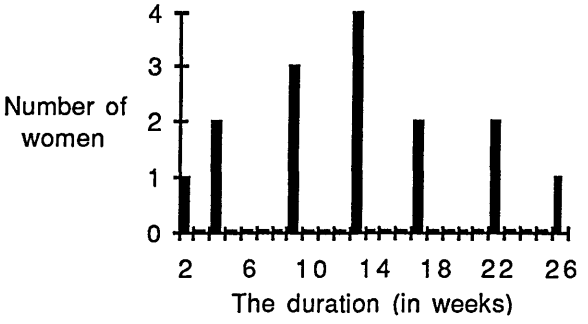
4-For how long did you breast-feed?

Out of 59 women who breast-fed their babies (either entirely or mixed with

bottle-feeding), 11 women did not respond; 33(69%) women had not yet stopped breast-feeding while 15 women had discontinued it.

The duration of breast-feeding given by the 15 women ranged from 2 to 26 weeks with a mean duration of 13 weeks [Figure-135].

Figure-135 Duration of breast-feeding given by 15 women



5-<u>If breast-feeding was discontinued for other than medical reasons, did you think you needed support or advice so that you could have continued it? If so, what advice and from whom?</u>

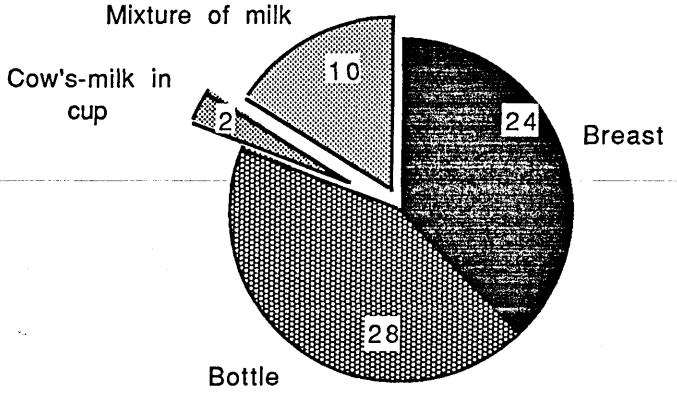
Out of 26 women who discontinued breast-feeding, 12 did not respond and one stopped breast-feeding because of a medical problem (had breast surgery).

Of the remaining 13 women, the majority (8 women) said 'No', 2 said 'Do not know' and 3 thought that they should have been given advice, or encouraged to continue to breast-feed. For instance one said 'I needed general advice from the hospital' but 2 could not specify what sort of encouragement they needed.

6-<u>What kind of milk do you mainly give now to your child?</u>

Out of 65 women, one did not respond; the commonest was bottle milk (28 '44%' women), 24(37%) women gave breast-feeding, 2 said cows-milk in a cup and 10 children drank a mixture of most types of milk [Figure-136].

Figure-136 The main type of milk given to the child



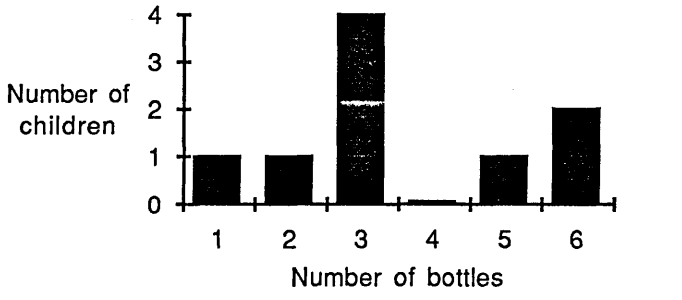
7-Does your child get a bottle at every feed? If no, then how often?

Of the 65 women, 22 did not give any bottle-feeding to their children but were breast-feeding.

Of the remaining 43 women who were bottle-feeding; two wom en did not respond; 27(66%) gave a bottle at each feed while 14 (34%)gave a bottle at some feeds.

When the 14 women were asked about the number of bottles per day that they gave their children one woman gave a bottle on demand and four could not remember the number of bottles given to their children. The remaining 9 women gave responses ranging from 1 to 6 bottles a day [Figure-137].

Figure-137 Number of bottle-feeds per day



III-Knowledge on and Information of infant feeding:

1-The advantages and disadvantages or difficulties of the feeding method used.

Most women gave 2 responses to this question and both were considered in the results.

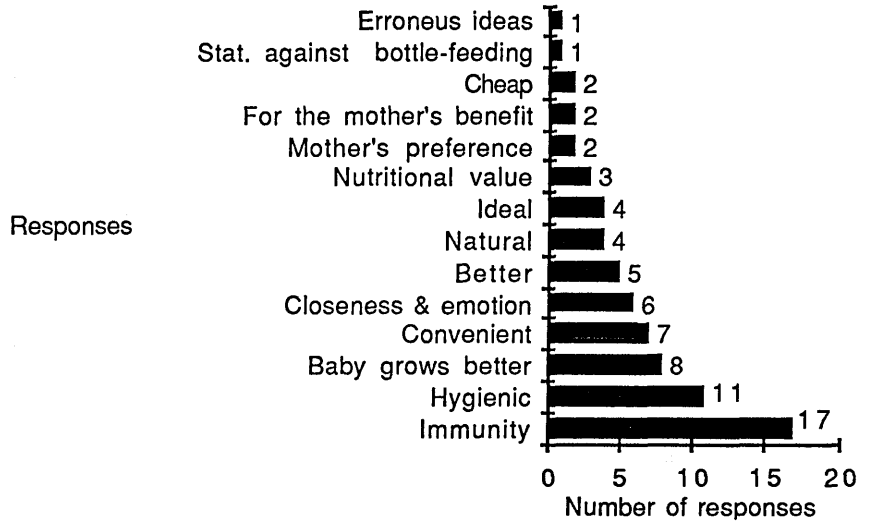
(i)-Breast-feeding:

84 women gave breast-feeding either entirely or combined with bottle-feeding. The fact that a large number of women did not respond to this question is because some gave their babies both feeds (breast and bottle) and preferred to tell the advantages and the disadvantages in relation to the artificial formula that they had offered their children, rather than the ones related to breast-feeding.

* Advantages;

Out of the 39 women who responded to this question, one said 'Do not know' while 17(44%) thought that the advantage of breast-feeding was that it provided immunity to their children [Figure-138].

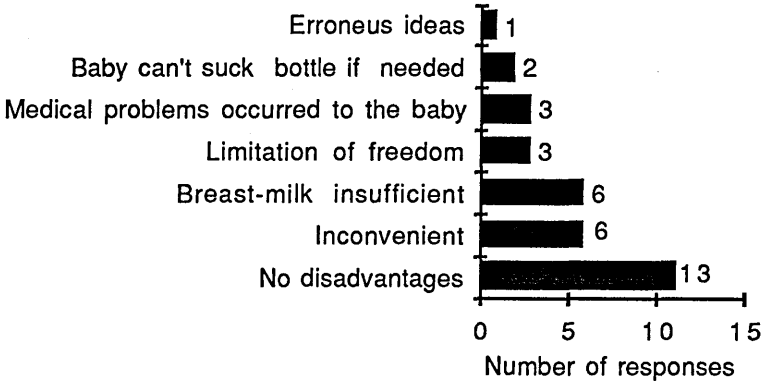
Figure-138 Advantages of breast-feeding



* Disadvantages or difficulties;

31 women responded to this question of whom one said 'Do not know' while the majority, 13(42%), found no difficulties with breast-feeding and thought that it had no disadvantages [Figure-139].

Figure-139 Difficulties and disadvantages of breast-feeding



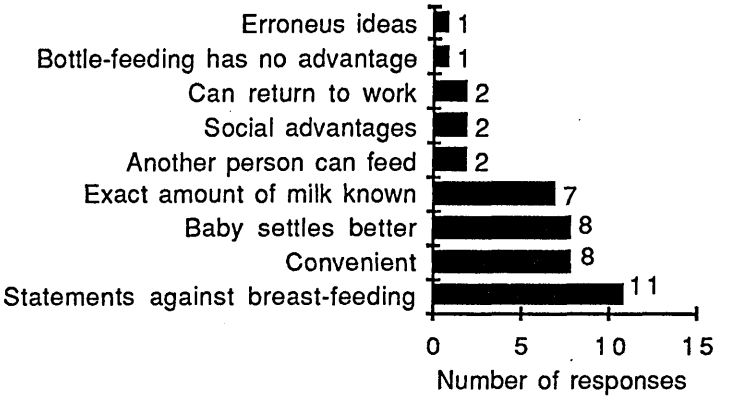
(ii)-Bottle-feeding;

56 women gave bottle-feeding either alone or combined with breast-feeding.

* Advantages;

31 women responded of whom 11(35%) expressed the advantages of bottle-feeding in terms of certain perceived disadvantages to breast-feeding rather than a positive commitment to the bottle, for example one said 'Breast-milk is insufficient' [Figure-140].

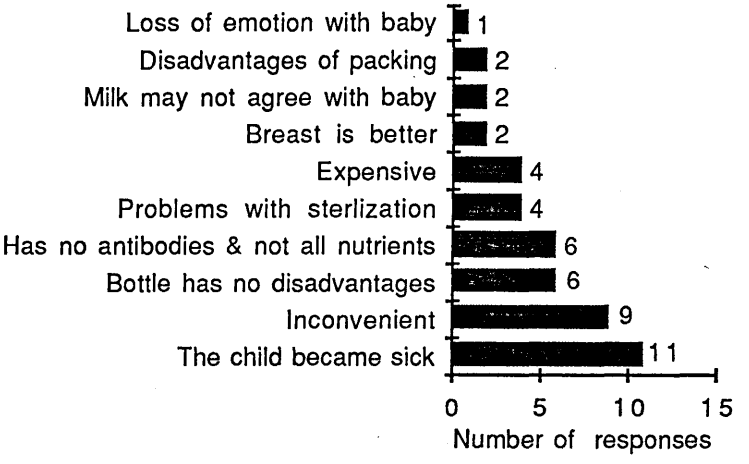
Figure-140 Advantages of bottle-feeding



* Disadvantages or difficulties;

Of the 34 women who responded, 11(32%) said 'The child was becoming frequently ill because of artificial feeding'; 6 women faced no difficulties and thought that bottle-feeding had no disadvantages [Figure-141].

Figure-141 Difficulties and disadvantages of bottle-feeding



2-If you had the choice now would you still like to feed in the same way as you began? If not, then why?

Two women did not respond and 5 were not certain so said 'Do not know'. The majority, 61(68%), would choose the same feeding methods as they had started.

The reasons given by the remaining 23 women who did not like to feed their children in the same way as they had started were various. 10 said 'I would like to give only breast-feeding because my child will be healthy'; 6 women disliked breast-feeding and said 'I would like to bottle-feed because breast milk is not sufficient' and surprisingly one woman said 'I would like to give solid feeding'; 6 women could not give a reason for not choosing to feed their children in the same way as they had done post-delivery.

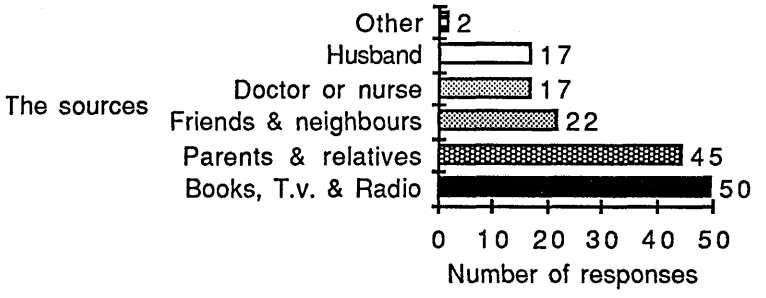
3-Have you obtained, since your child's birth, any further information about infant feeding? If so, from where?

One woman did not respond.

Most of the women (80 '89%') had obtained further information about infant feeding while 10 had not.

The majority, 49(61%), had obtained information from books, television or radio; 2 women said 'Other' for instance one said 'School' and one said 'Your questionnaires were very helpful' [Figure-142].

Figure-142 Sources of information



The total number of responses in the above figure does not add up to 80 (no. of women who gave an answer) because it was a multi-response question.

4-Is there any information that you were not given and which you think would have been important?

8 women did not respond. 35 were not certain and said 'Do not know' and 36(43%) women thought that they had been told everything they needed to know.

Of the remaining 12 women; 6 said 'I had not been told about solid feeding'; one wanted information about when and how to start weaning; 2 women said 'Areas related to medical knowledge such as information about contraceptive pills and information about G6PD deficiency disease'; one said that she had not been informed about the advantages of breast-feeding; one said 'I was told nothing at all about infant feeding' and one woman said 'I was not told about the methods of bottle sterlization and when and what solid foods to start'.

IV-Information about solid feeding:

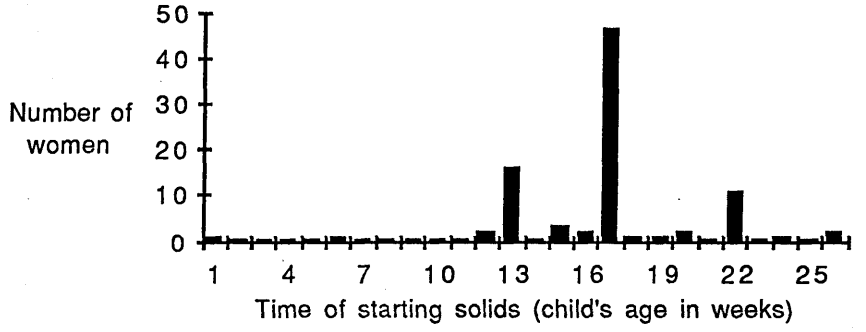
1-When did you start giving solid feeding to your child?

One woman had not yet started giving solids to her baby and one could not remember when she started.

The age of the babies when solid foods were started ranged from 1 to 26 weeks.

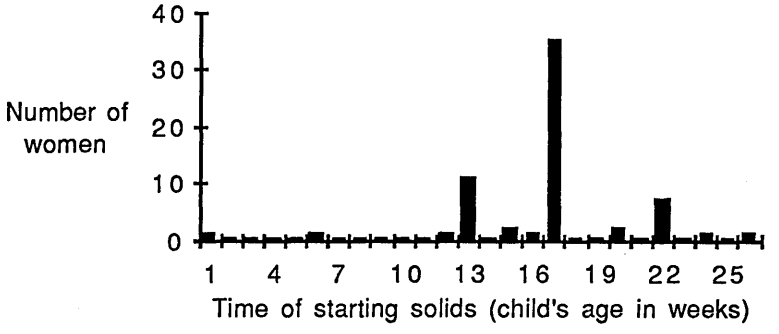
The majority, 46(52%) women, gave solids when their babies were 17 weeks of age; the mean age was 16.8 and standard deviation was 3.7 [Figure-143].

Figure-143 Time when solid foods was started to all children



The time when solid foods were first given to the 65 children who were 6 months of age ranged from 1 to 26 weeks with a mean of 16.6 weeks; one woman had not yet started giving any solids to her baby and one could not remember when she started [Figure-144].

Figure-144 Time when solid foods was started to the 6 months old children (63)



The following 8 questions were related only to those children (total 65) who were 26 ± 2 weeks of age.

2-<u>What kind of foods do you give your child?</u>

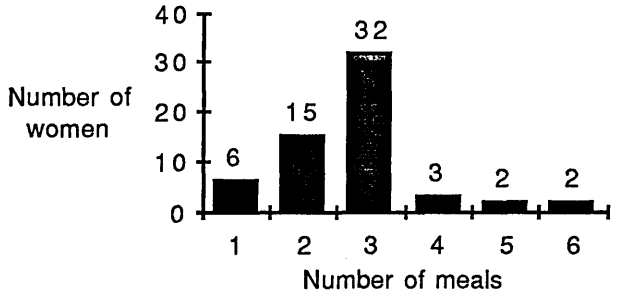
Out of 65 women, one had not yet started giving any solid food to her child. 13(20%) children were fed from the normal family foods, 34(53%) were fed a special baby diet and 17(27%) children were fed a mixture of family and baby's special food.

3-<u>How many meals a day do you give your child?</u>

Out of 65 women, one had not yet started giving any solid food to her child; one did not respond and one was not certain about the number of meals given to her child.

2 women said 'Meals are given to the baby as often as required' while the number of main meals given by the remaining 60 women ranged from 1 to 6 meals. The majority, 32(53%) women, gave 3 meals a day [Figure-145].

Figure-145 Number of meals given to the 60 children a day

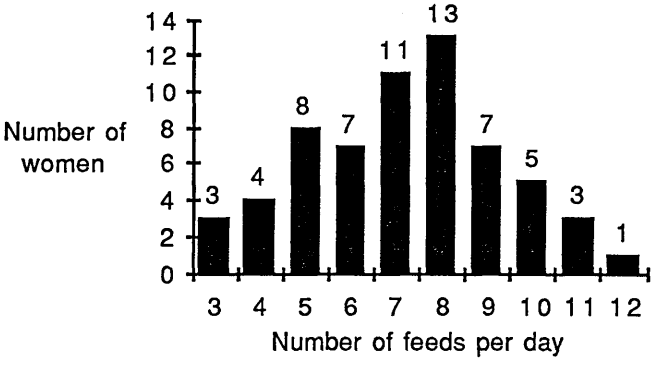


V-Description of a one day meal:

1-Number of feeds per day: of this how many solids, liquid or mixed feeds given?

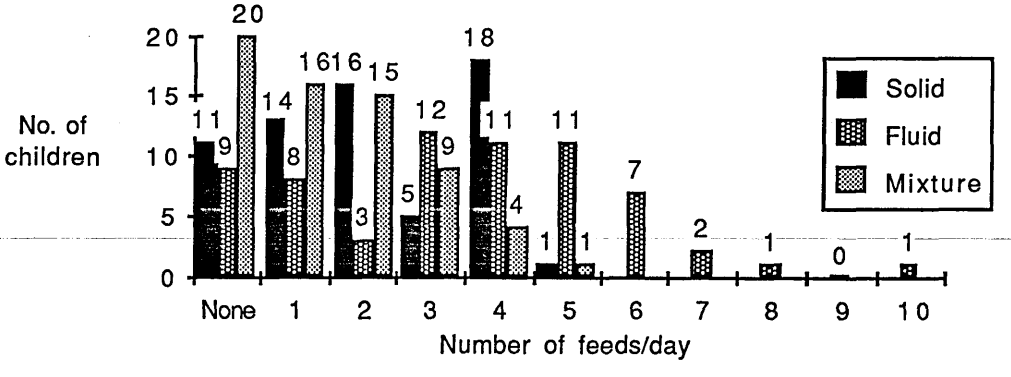
2 women did not respond and one had not started giving any solid food to her child. The number of feeds ranged from 3 to 12 feeds per day with an average of 7 feeds per child per day [Figure-146].

Figure-146 Number of feeds given each day (to 62 children)



The following figure no.147 shows the number of solid, liquid or mixed feeds given per day to the children.

Figure-147 Number of various type of feeds given each day (to 62 children)



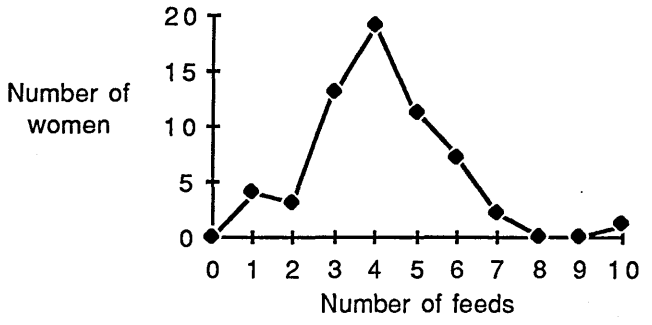
2-How many juice drinks or milk feeds given to the child per day?

35 women did not give any juice drinks to their children; 20 gave one drink per day and 7

gave 2 drinks. 3 women did not respond to the first part of the question .

When the women were asked how many milk feeds per day they gave their children 5 did not respond while the response of the remaining 60 women ranged from 1 to 10 milk feeds per day with an average of 4 milk feeds per child per day [Figure-148].

Figure-148 Number of milk feeds given each day (to 60 children)



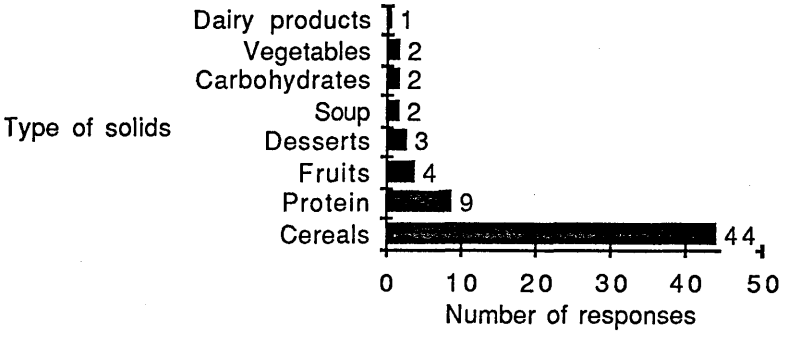
3-<u>The breakfast meal.</u>

(i)-<u>Type of solid foods given in breakfast.</u>

2 women did not respond and one had not started giving any solid food to her child.

7 women did not give their children any solid foods in the morning only and the responses given by the remaining 55 women are shown in figure-149.

Figure-149 Type of solid foods given at breakfast (to 55 children)



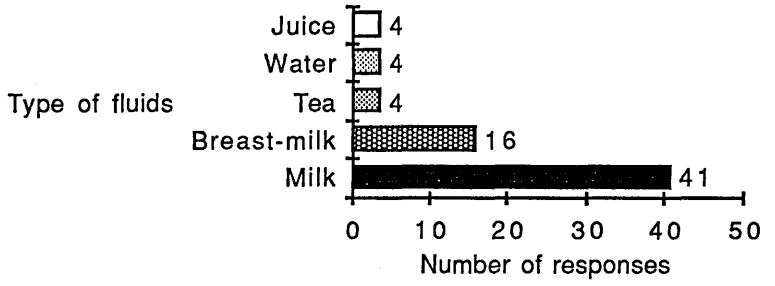
The total number in the above figure does not add up to 55 (no. of women who gave an answer) because it was an open-ended question.

(ii)-<u>Type of fluids given with the breakfast meal:</u>

3 women did not respond and 5 did not add any fluids to their children's breakfast.

The majority, 41(72%) women, gave their children milk either in a bottle or in a cup [Figure-150].

Figure-150 Type of fluids given at breakfast (to 57 children)



The total no. in figure-150 does not add up to 57 because it was an open-ended question.

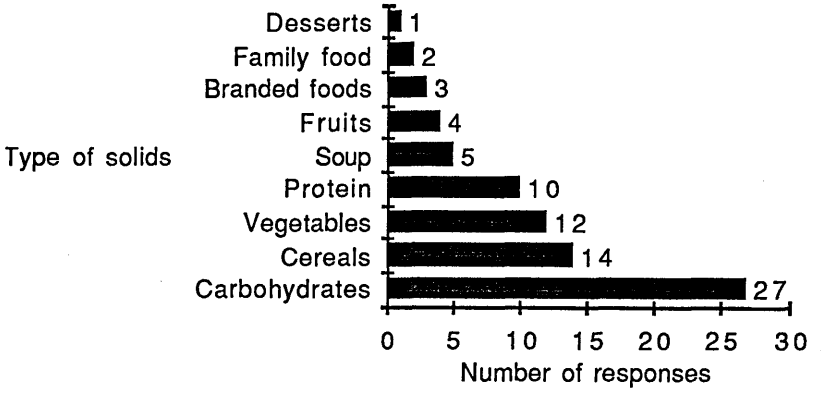
4-The mid-day meal.

(i)-Type of solids given in the mid-day meal:

2 women did not respond, one had not yet started giving any solid food to her child and 5 did not give solid foods in their children's mid-day meal.

The responses of the remaining 57 women are shown in figure-151.

Figure-151 Type of solid foods given in mid-day meal (to 57 children)



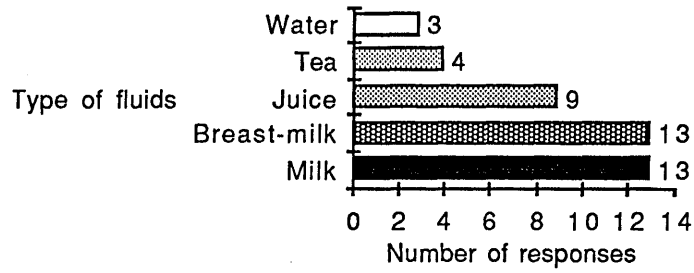
The total number in the above figure does not add up to 57 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the mid-day meal:

2 women did not respond and one had not started giving any solid food to her child.

23 women did not add any fluids to the mid-day meals of their children while the responses of the remainder are shown in figure-152.

Figure-152 Type of fluids given in mid-day meal (to 39 children)



The total number in the above figure does not add up to 39 (no. of women who gave an answer) because it was an open-ended question.

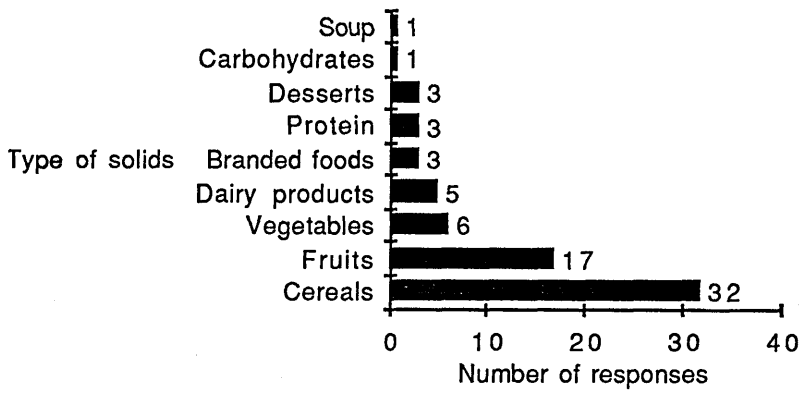
5-The evening meal.

(i)-Type of solids given in the evening meal:

2 women did not respond and one had not started giving any solid food to her child.

9 women did not offer solid foods to their children in the evening meal while the majority, 32(60%), gave cereals [Figure-153].

Figure-153 Type of solid foods given at evening meal (to 53 children)



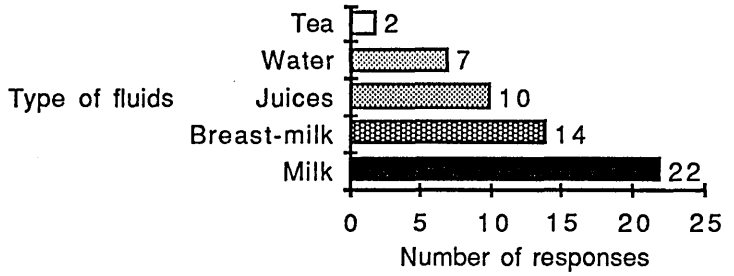
The total number in the above figure does not add up to 53 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the evening meal:

2 women did not respond and one had not started giving any solid food to her child.

16 women did not give fluids with the evening meals while the responses of the remaining 46 are shown in figure-154.

Figure-154 Type of fluids given with evening meals (to 46 children)



The total number in the above figure does not add up to 46 (no. of women who gave an answer) because it was an open-ended question.

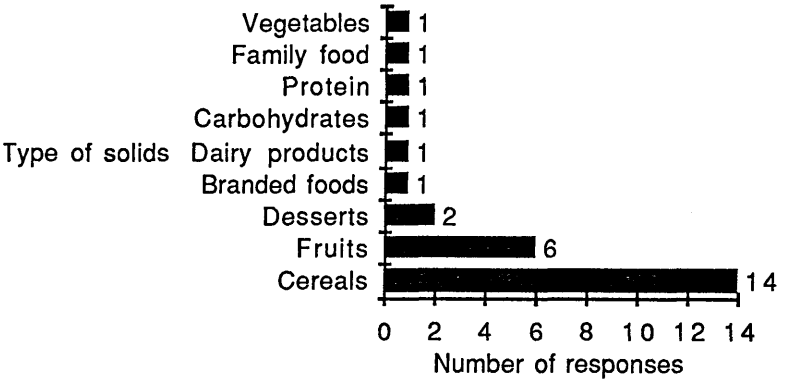
6-The additional meals.

(i)-Type of solids given in the additional meal:

2 women did not respond and one had not started giving any solid food to her child.

38 women did not give any solid foods as an additional meal. The responses of the remaining 24 women are shown in figure-155.

Figure-155 Type of solid foods given at additional meal (to 24 children)



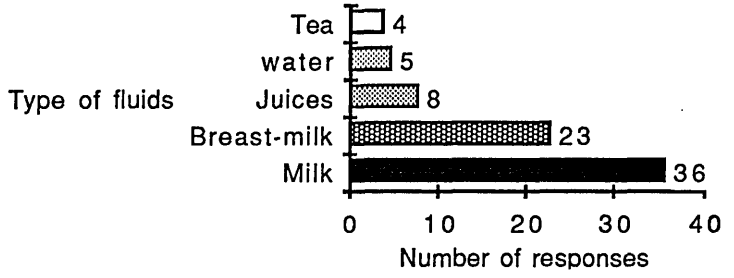
The total number in the above figure does not add up to 24 (no. of women who gave an answer) because it was an open-ended question.

(ii)-Type of fluids given with the additional meals:

2 women did not respond and one had not started giving any solid food to her child.

6 women did not give any fluids as an additional meal. Of the remaining 56 women the majority, 36(64%), gave milk feeds either in bottles or in cups [Figure-156].

Figure-156 Type of fluids given with additional meals (to 56 children)



The total number in the above figure does not add up to 56 (no. of women who gave an answer) because it was an open-ended question.

VI-Questions related to intentions:

1-Do you intend to have another child? If yes, then when?

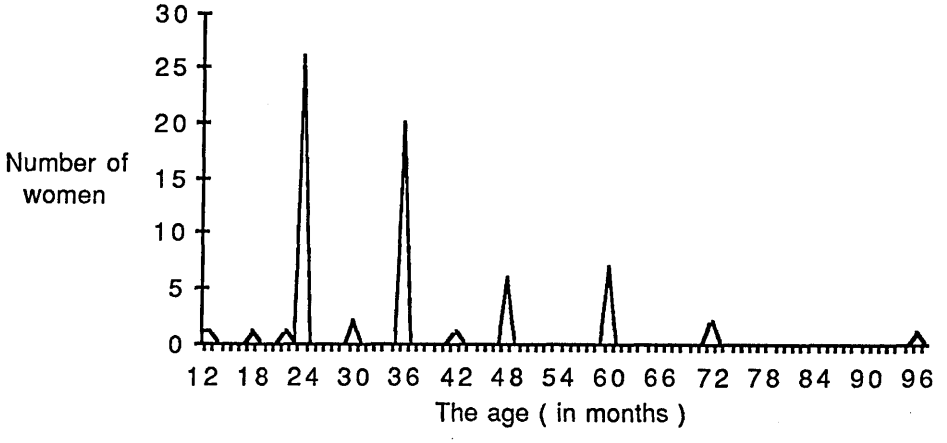
The majority, 77(85%) women, wanted to have another child, 11 were not certain but 3 had decided not to have any more children.

When the women were asked when they would like to have the other child, 86 replied, of whom one said 'Do not know'. The remaining 85 women gave the time in relation to the age of their existing child.

The responses ranged from 12 to 96 months with a mean of 35.6 months; mode was 24; median 36 and standard deviation was 15.6 .

26(30%) women wanted to have another baby when their present child was 2 years of age [figure-157].

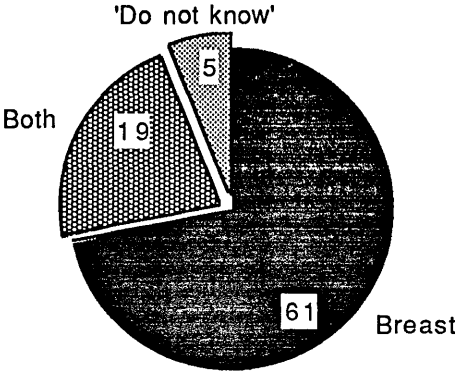
Figure-157 The age of the present child when next baby wanted



2-What type of feeding do you intend to give your next baby?

Out of the 85 women who responded to this question, the majority, 61(72%), wanted to breast-feed, 19(22%) said 'Both' and 5 had not decided and said 'Do not know' [Figure-158].

Figure-158 Type of feeding to be given to the next baby



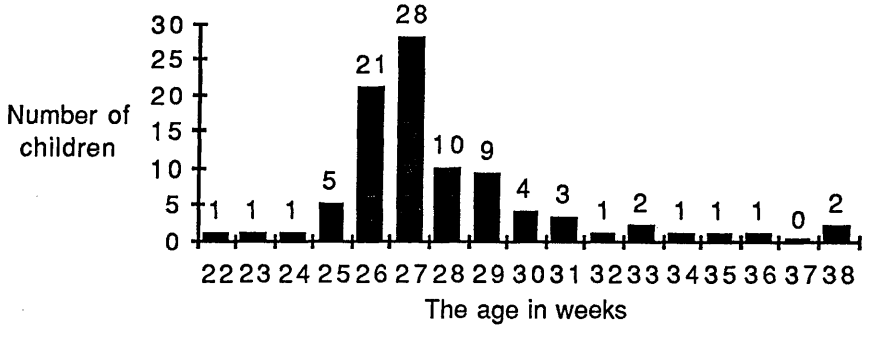
VII-Information about the child:

1-Age of the child.

The children's ages at the time of completing the questionnaires ranged from 22 to 38 weeks with a mean of 22.8 weeks; standard deviation 2.8; mode 27; median 27.

The majority, 65(71%), were between 24 and 28 weeks of age [Figure-159].

Figure-159 Age of the children



2-How often has your baby been unwell?

73(80%) children were occasionally unwell, 9 were frequently sick and 9 had never been unwell.

3-Does your child suffer from any chronic illness?

Out of 91 women; three did not respond; 79 children were not suffering from any illnesses. 9 children had various problems such as 3 had ear problems and infection; one suffered from shortness of breath; one had lymphadenopathy, adenoids and shortness of breath; one had G6PD deficiency; one complained of bronchitis; one suffered from chronic cough and one woman did not specify what the illness was.

4-How and where does your child sleep at night?

All children, except 22, slept well at night.

88 children slept in parents' bedroom and only 3 were kept in a separate room.

5-Have you found any difficulties in looking after your child?

One woman did not respond.

Only 11 out of 90 women found difficulties in looking after their children.

6-How is your child?

78 women thought their children were healthy while 5 did not think so. 8 were not certain.

Summary:

More than 80% of the originally selected group of women had responded to this final stage of the study.

Less than one-third were working mothers and the mean age of the babies when the women returned to work was 14 weeks. The majority of babies were looked after by husbands or close relatives during the mothers' absence.

More than half of the women were still feeding in the same way as they had begun post-delivery and the majority were breast-feeding; of those who had discontinued giving the same feeding method as they had started, the majority had changed to bottle-feeding.

13 weeks was the mean duration of breast-feeding by those mothers who stopped breast-feeding.

Although the main type of milk which was given by 44% of the mothers at six months was artificial formula, more than one-third were still breast-feeding.

When the women were asked to give their opinions about the advantages and disadvantages of the chosen feeding methods, 'Provide the baby with immunity' was the commonest advantage of breast-feeding given by those who breast-fed of whom most thought that breast-feeding had no disadvantages or difficulties. The commonest advantage of bottle-feeding given by those mothers who did so was 'Not like breast-milk, the amount of bottle formula was sufficient and kept my baby satisfied' and the majority said that the main disadvantage of bottle-feeding was that it was not technically convenient and it caused various medical problems in their babies.

Two-thirds of women would choose again, if they had the choice, to give the same type of feeding as they had given. Of those who would not like to feed in the same way as they had started, the majority would prefer to give breast-feeding.

Although most women after their deliveries had obtained information about infant feeding the majority achieved such information from books, radio or television programmes but parents remained the next most valuable source of information.

17 weeks was the mean age of the babies when weaning was started. At 6 months the majority of mothers were still giving special baby foods to their children. Most of the children were receiving 3 main meals per day. The average number of feeds, whether it was solid, liquid or a mixture of solid and liquid feeds, was 7 feeds per child per day. On an average 4 milk feeds was given to each child every day.

The main solid foods given by the majority of women in the breakfast meal to the children was cereals while milk was the main fluid given. In the mid-day meal most women gave carbohydrate foods as the main solid while breast milk and cow or bottle milk were the main fluids given at lunch time.

The majority of mothers served cereals as the main solid foods in the evening meal and milk was the main fluid.

Only one-third of women gave their children an additional 4th meal during the day in which cereal was the main solid food and cow milk was the main fluid. Breast-milk was the next choice of fluid given as an additional meal.

Although the majority of children did not suffer from any illnesses, 10% had various medical problems.

Almost all children slept in their parents' room. One-quarter of women thought that their children did not sleep well at night.

More than four-fifths of mothers wanted to have another child in the future and 3 years was the mean interval when next child wanted. Almost two-thirds of them wanted to breast-feed their next child.

Chapter V

Discussion:

1-The response rate:

Of the 187 Glaswegian girls to whom questionnaires were posted, 13% did not receive their copies, which were incorrectly addressed; 2 girls had left their homes for higher studies and one was a case of Down's syndrome. After these 27 girls from the total number of the sample population had been excluded, the response rate was 48%. 18 completed questionnaires from the pilot study were added, making the total number of girls included in the study 95.
There were various reasons for the low response rate among the Glaswegian girls: first, the fact that the information required had to be collected by a postal questionnaire rather than a personal interview carried with it the risk of a high non-response rate, especially in this age group (15 to 17 years); secondly, as mentioned earlier, some mothers had objected to their daughters being included in such a study and had reported their objections while others who also objected did not bother to reply; the third reason for the low response was probably that some girls found it difficult to talk about such a delicate subject as infant feeding and their attitudes to it.

In Bahrain, because a personal interview was conducted, the target number of one hundred girls was attained.

The purpose of the next part of the study was to interview primigravid women, both in Glasgow and Bahrain, on their first visit to the antenatal clinic. 107 women were seen in Glasgow, of whom 83% responded to the questionnaires posted to them a few weeks before their expected dates of delivery; 77% and 68% responded at 3 and six months post-delivery respectively. Although the response rate obtained was low, it is better than that obtained by Hall et al., (1984) when they did a more or less similar study. They reported response rates from a group of primigravidas of 71% and 61% at 3 and 6 months post-delivery respectively.
In contrast, the figures for the 110 selected Bahraini women, in this study, were however much better than the response rates of the Glaswegian women and that reported by Hall et al.: They were 96%, 85% and 83% at a few weeks before child-birth, at three months and six months after parturition respectively. The reason behind the high response rates in Bahrain is probably that this was the first time such a study had been implemented in Bahrain and so women were enthusiastic to participate in it.

Please note:

The following discussion is based on the number of patients, both in Glasgow and Bahrain, who responded on each occasion up to the last stage of the study (73 in Glasgow and 91 in Bahrain) while those who had not were excluded so that there would be no bias in the results. Having said that, comparison was made between the results obtained from the total number of respondents, at each stage of the study, with the results of those who only remained till the last stage. It was found that the results in both groups were similar.

I-Personal and social data:

2-The sample population's age:

37% of the Glaswegian girls were 15 years old, representing 0.4% of the total list size; 27% were 16, representing 0.3% of the total list size and 36% were 17 years, representing 0.4%. The percentage of young girls among the Scottish population in 1985 was higher than the above quoted figures and were 0.78%, 0.81% and 0.84% for females of 15, 16 and 17 years of age respectively (HMSO, 1985). A comparison between the figures from this study and the Scottish figures shows a marked difference which, probably, has resulted from the wastage of a large number of the originally selected sample (59%) either by exclusion or by failing to return the questionnaires.

There was a nearly equal distribution of the numbers of girls in each of the three age-groups among the Bahraini girls. Comparison with national figures could not be done because the breakdown of the Bahraini population in different ages could not be obtained.

Although the age ranges among the Glaswegian and the Bahraini primigravidas were similar, the mean age of the Bahraini women (22 years) was lower than that of the Glaswegians (25 years).

In Glasgow the range was between 16 and 36 years compared to 15 to 46 years of all women delivered in the Royal Maternity Hospital during 1984 (GGHB, 1984). After the ages were grouped into 4-yearly intervals, it was found that the percentage of women in each age-group was similar to those from the Royal Maternity Hospital in 1984, except for women who were 19 years or under. They represented a higher percentage in this study than the figures from the hospital (16% versus 12%). This difference could be attributed to the fact that the figures from the hospital represented both the primi and multigravid women while this study was only concerned with primigravid patients, who are usually younger. However, Martin and Monk in their survey in 1980 reported 17% of the studied Scottish women to be 19 years or less of age.

The age of the Bahraini women ranged from 16 to 37 years compared to 15 to 45 years of all

primigravid women delivered in Bahrain in 1984 (Central Statistics Organisation, 1985). Again a higher percentage of women in this study were under 19 years of age than the national figure in 1984 (25% versus 20%). The percentage of women who were between 20 and 24 years of age was lower than the national figure (47% versus 52%).

3-Social class;

As was expected the majority, 86%, of the Glaswegian girls belonged to the lower social classes because most of the population served by Govan Health Centre came from such social classes.

Among the Glaswegian women it was found that 9% came from social class 1, 23% from social class 2, 35% from social class 3, 7% from social class 4; 7% from social class 5; 18% were unclassified. Table-21 compares these figures with those of all women who gave birth in the Royal Maternity Hospital in 1982 (GGHB,1984) and the figure reported by Martin and Monk in their survey of 1980.

Social Class	This study	Martin & Monk	R.M.H
1	9%	7%	3%
2	23%	15%	8%
3	35%	47%	36%
4	7%	14%	13%
5	7%	4%	8%
unclassified	18%	13%	31%

Table-21 Social class of the Glaswegian women.

Although most of the women in all of the above three groups came from social class 3, the percentage of women who belonged to the upper social classes was higher in this study. The reputation of the hospital and excellent medical staff might have resulted in more women of the higher social classes making use of the hospital facilities.

Because there is no official social classification in Bahrain the Bahraini sample population could not be categorized in the same way. Although some authors have used various methods to group people in Bahrain in social classes, the majority have used family income as a criterion. This method is a biased one and may not actually represent the population because a considerable number of uneducated families have high incomes. Therefore, no efforts have been made in this study to group the selected sample population.

4-Marital status;

64% of the Glaswegian women were married when first interviewed. This increased to 76% and 78% at a few weeks before delivery and at 3 months post-natally respectively.

It was not unusual to find at every stage of the study that all the Bahraini women were married.

5-Duration of marriage:

Due to the increased involvement of women of the industrialized countries in the process of the development of the society and the high level of male unemployment which can require that females earn the family income, it may not be odd for such women to delay the process of having a family. This may explain the fact that 54% of the married Glaswegian women became pregnant only after the second year of marriage while the mean duration of marriage for the total sample was 4 years. In Bahrain, on the other hand, the traditional culture, the strong belief in the extended family and the domination of religious beliefs, mean that most couples prefer to have their first child during the first year of marriage. Hence it was found that 83% of the women studied became pregnant within a few months of marriage. Only 8% were pregnant after their third wedding anniversary; the most likely explanation of that is temporary infertility.

6-Planning of pregnancy:

68% of the Glaswegian women at the first interview said that they had planned the pregnancy while 73% at the late stages of pregnancy admitted to having planned their pregnancies. There was also an increasing trend in the response to this question among the Bahraini women from early to late pregnancy (27% versus 47%) but the overall response was very low probably due to the strong belief among the Bahraini women that every woman should normally become pregnant shortly after marriage.

7-Number of siblings:

The majority of the Glaswegian girls and women came from families consisting of one to three children: The average number of siblings of the schoolgirl's sample was 2 and 3 for the pregnant women. This may be a normal size of family in a European country but certainly it is not the case in Bahrain where the majority of the girls (80%) and women (68%) in the study had 4 to 9 siblings with an average of 7 and 6 for the girls and women respectively. This is almost similar to the national figure in 1981 which showed that the average number of births per Bahraini mother was 5 (Central Statistics Organisation, 1985).

8-Smoking habits:

38% of the studied Glaswegian women were found to be cigarette-smokers in early pregnancy. This is even higher than the national figure reported in 1984, which showed that 32% of all British women were smokers (Office of Population Censuses and Survey, 1985). Despite the fact that these women were pregnant and were advised against cigarette smoking in the parent-craft classes, 32% were still smoking by the final stage of their

pregnancies. Either the message was not delivered appropriately to them, they were ignorant about the ill consequences of smoking during pregnancy or they could not change their habits for the benefit of their foetus.

Smoking among women is not common in Bahrain, although some of the old women are used to smoke hubble-bubble. This fact was confirmed in this study when it was found that only 2% of the Bahraini women were smokers at early pregnancy.

9-Education:

Despite free education, some of the Bahraini population are still illiterate. However, the proportion of uneducated people is very small; the majority being old. 7% of the women studied were either totally illiterate or could only read and write and 20% as against 33% of the Glaswegian women had reached a higher level of education. All of the remaining women in Glasgow had reached the secondary level of education.

10-Type of delivery:

20% of the Glaswegian women had had a caesarean section and 14% had a forceps delivery. This high figure reflects the attitude in the Royal Maternity Hospital which has always had high rates of interfered deliveries. A report from the Greater Glasgow Health Board (1984) states that 16% of women (primi and multiparous) delivered in that hospital had caesarean sections and 17% had a forceps delivery. The higher caesarean section rates found in this study is probably due to the fact that all the women included were primigravidas who are more prone to instrumental deliveries than are multiparous women. Martin and Monk in 1980 reported a higher figure for caesarean sections in Scotland (13%) than in England and Wales (9%).
More women in Bahrain were allowed to deliver normally and fewer had caesarean sections (16%). According to the Maternity Hospital report in Bahrain, 11% of all women in 1985 were delivered by caesarean section (S.M.C. North Block statistics, 1985).

11-The average length of stay of mothers in hospital:

Although the Bahraini mothers were kept for a shorter period in hospital during and after delivery than the Glaswegian mothers (the range was 3 to 35 days in Glasgow and 2 to 25 days in Bahrain), the mean duration were similar in both countries (6 days). In their survey, Martin and Monk (1980) reported the same finding among the Scottish women studied .

12-Source of help to the women:

The expectation of the Glaswegian women that they would receive help in looking after their babies from their husbands or partners was higher (67%) than those of the Bahraini (21%). Whereas after delivery 51% of husbands and partners of the Glaswegian women were

offering actual assistance to them, in Bahrain the figure was 38%.

Although more Bahraini women, during pregnancy, anticipated help from their parents and close relatives than the Glasgow women (67% versus 30%), the source of help after the child-birth was almost similar in both groups. This is a surprising finding, especially in Bahrain, when it is also known that 12% of the Bahraini women said that they had nobody to support them, because it reflects a prominent change in the cultural attitude and behaviour of a traditional society like Bahrain where a higher rate of support and help was expected from parents and relatives. This change could be attributed to the fact that there are increasing numbers of young couples who prefer to live alone and away from the large family house and are thus becoming more self-dependent.

II-Knowledge and attitudes:

1-Attitudes of close contacts to infant feeding:

Bryant, C.A. in her study in 1982 found that relatives, friends and neighbour networks have a significant impact on the decision regarding breast- and bottle-feeding and on the mother's success with lactation. She thinks that beliefs about specific practices are transmitted by such networks to the mother. With this background the influence of close contacts on the choice of infant feeding was investigated and is discussed.

A-Influence on the choice of breast-feeding:

The overall percentage of close contacts such as husbands, mothers, friends and medical advisers who encouraged breast-feeding increased during pregnancy and throughout the post-delivery period among the Bahraini population. In Glagow the medical advisers had an increasingly favourable attitude towards breast-feeding while husbands or partners and friends were becoming less influential. The influence of the patients' own mother however did not change.

During pregnancy 57% of the Glaswegian and 81% of the Bahraini women thought that their husbands supported the idea of breast-feeding while after child-birth 51% and 93% of the Glaswegian and the Bahraini husbands respectively encouraged their wives to breast-feed [Table-22].

Contacts	Early in pregnancy		Late in pregnancy		Post-delivery	
	Glas.	Bah.	Glas.	Bah.	Glas.	Bah.
Husband	57%	81%	55%	90%	51%	93%
Mother	43%	67%	47%	93%	43%	91%
Friend	48%	48%	46%	79%	37%	79%
Med.advi.	18%	7%	54%	73%	56%	79%

Table-22 Close contacts' influence on breast-feeding.

B-Influence on the choice of bottle-feeding:

Although the influence of husbands or partners and medical advisers over the choice of artificial feeding in both populations increased from early pregnancy to post-delivery, the overall percentage of all contacts actively encouraging bottle-feeding was low [Table-23].

Contacts	Early in pregnancy		Late in pregnancy		Post-delivery	
	Glas.	Bah.	Glas.	Bah.	Glas.	Bah.
Husband	12%	4%	20%	9%	16%	8%
Mother	14%	5%	24%	15%	30%	9%
Friend	15%	6%	15%	10%	12%	22%
Med.advi.	0%	0%	5%	18%	11%	6%

Table-23 Close contacts' influence on bottle-feeding.

2-Sources of information:

The majority of the Glaswegian girls thought that their doctors would be the major source of information about infant feeding. Despite that 44% of the Glaswegian women in early pregnancy expressed this view; surprisingly only 3% said they had obtained such information from their doctor when they were asked a few weeks before delivery. Clinics such as antenatal and parent-craft classes were the principal source of this valuable information. Although this finding contradicts that obtained by MacIntosh in 1985 when he said that the patients' mothers formed the major source (91%) of information for the pregnant Glaswegian women that he studied, a similar figure to that obtained in this study was quoted by him regarding the doctor. Experienced people such as parents, neighbours and friends of the Glaswegian women in this study were found to play only a minor role in providing this information.

Most of the Bahraini girls and women liked to depend on themselves to find out more about infant feeding by reading books and by watching and listening to special programmes on television and radio. Parents were the second most common source of information for both the girls and the women in their early and late pregnancies. Again the doctor, as a source of information, played little part with the Bahraini women.

3-Type of feeding given to nephews and nieces:

It seems that the Glaswegian girls and women are more familiar with artificial than natural feeding, as the majority of the girls' and 59% of the women's nephews and nieces were bottle-fed. An opposite trend was found among the Bahraini population where 74% of the girls had a breast-fed nephew or niece and the majority of the women had nephews or nieces who were either exclusively breast-fed or given combined breast- and bottle-feeding.

4-Choice of feeding method:

A-Choice of feeding among the girls:

The number of the Glaswegian girls who contemplated breast-feeding was small when compared to other studies done in industrialized countries. Only 19% of the Glaswegian girls wanted to breast-feed, while 34% considered using artificial feeding and 36% were not certain. Cusson, R. (1985) reported that 46% of the high schoolgirls studied in Baltimore wished to breast-feed while Pascoe and Berger (1985) found that among high schoolgirls in the U.S.A., 42% planned to breast-feed their future babies. The low figure obtained from the Glaswegian girls is part of a generalized low incidence of breast-feeding in the West of Scotland. This may be due to the fact that the girls had had fewer opportunities of experiencing breast-feeding either during their own childhood - the majority were bottle-fed - or by observing relatives breast-feeding. There was a significant relationship between the choice of infant feeding and the type of feeding that the girls themselves had had during infancy ($P<0.001$). 81% of those girls to whom artificial feeding had been given chose to bottle-feed their infants. Only 10% of the girls were breast-fed during infancy and of those 57% planned to breast-feed a future baby.

Because breast-feeding is widely accepted as normal behaviour in Bahrain and because the majority of the girls reported that they themselves had been breast-fed during infancy, 88% of the studied girls wished to breast-feed and none considered exclusive bottle-feeding. The results also show the extent of breast-feeding in Bahrain, at least a generation ago; it was found that 89% of schoolgirls had been breast-fed during infancy and similar findings were reported by Berger and Winter (1980).

B-Choice of feeding among the primiparous;

The trend among the Glaswegian women from early pregnancy to post-delivery increased in favour of artificial feeding. When asked during early pregnancy 67% of the women said they would choose to breast-feed and 27% considered bottle-feeding; these figures changed to 45% and 42% towards the end of the pregnancy for breast-feeding and bottle-feeding respectively. After the child's birth 34% of women started breast-feeding, 52% bottle-fed and 14% gave both types of feeding. The figures for breast-feeding were similar at 3 and 6 months post-delivery at 20% and 19%, and that for bottle-feeding equally were similar at 70% and 71%. Although at 6 months 19% of the women were exclusively breast-feeding, it was found that 22% of the women were giving breast milk to their babies either exclusively or mixed with other kinds of milk.

In most published studies about infant feeding, the incidence of breast-feeding is defined as the proportion of all babies being breast-fed even if they were put on breast only once or are given a bottle as well as breast milk. In this study three groups were described - the wholly breast-fed, those given only the bottle and those given both types of feeding. At first glance the various incidences and prevalences in this study seem to be lower than the figures quoted in the other reports. Hence, for the purpose of comparison, the definitions had to be adjusted to bring them close to those reported in other studies. The numbers of women who opted for breast-feeding and those who said both (breast- and bottle-feeding) were thus added together: Therefore the percentage of women who wanted to breast-feed when asked in early pregnancy was 61%, later in pregnancy 57%; after delivery 48% breast-fed while at 3 months and at six months the figures were 30% and 23%.

A national survey done in England, Wales and Scotland in 1980 (Martin and Monk, 1980) showed that the incidence of breast-feeding among Scottish primiparous patients was lower than that found in England and Wales. The authors reported that 50% of the Scottish mothers breast-fed after delivery, 21% at 4 months and 18% were still breast-feeding at 6 months. Although the percentage of those who had started their babies on breast-feeding, in this study, was lower than those from the national survey, more women in this study were still breast-feeding at 6 months post-delivery.

A study by Chin, Golea and Goel in 1981 of a group of Glaswegian pregnant women (primi and multigravidas) showed a higher incidence of breast-feeding. They reported that 69% of the women planned during pregnancy to breast-feed, 61% did so after delivery and 12% continued the same method till the baby was 6 months old.

Although the cause of the lower incidences of breast-feeding found in this study is unknown, it could be attributed to the fact that both the other studies mentioned were completed during a period when considerable publicity was being given in favour of breast-feeding, especially after the publication of the working party's report on infant feeding from the Department of Health and Social Security in 1974 and 1980 (DHHS, 1974; DHHS, 1980 a). Strong recommendations were made in this report encouraging mothers to breast-feed and to prolong the duration of such feeding. In another report from London it was found that 64% of women (primi and multiparous) started breast-feeding and 35% continued for 2 months (Lyon et al., 1981).

Feelings of shame and awkwardness may develop among some women if they perceived their breasts as a sexual organ and breast-feeding as a forbidden sexual activity. Such feelings may occur in a society where breasts are not viewed as feeding organs which leads to anxiety which in part affects the hormonal mechanism of lactation leading to a decrease in the amount of produced milk. Another reason which may contribute in the low incidence of

breast-feeding in the Western countries is the fact that there are a few generations of women who had not been themselves breast-fed. These women would be more familiar with artificial feeding rather than with breast-feeding, making the situation difficult if some wished to breast-feed.

In Bahrain the infant feeding picture was totally different from that in Glasgow. Despite the fact that the percentage of women who chose to exclusively breast-feed their babies decreased gradually from early pregnancy to the post-delivery periods, very few wanted or gave bottle-feeding entirely. 91% wanted to breast-feed and 8% considered both (breast- and bottle-feeding) at early pregnancy. These figures changed at a few weeks pre-delivery to 69% wishing to breast-feed and 30% planning both types of feeding. After birth 41% of the babies were breast-fed and 56% were given both feeds but when the babies were three months old more women changed from combined breast- and bottle-feeding to bottle-feeding alone. So at three months 40% were breast-feeding, 20% gave artificial feeding and 39% gave both types of feeding. At the age of six months 41% of the babies were still being exclusively breast-fed, 44% bottle-fed while 14% were given either both feeding or fresh cow milk. The percentage of women who were putting their babies to the breast by six months post-delivery, whether giving wholly breast-feeding or mixed with other milk, was found to be 50%.
These figures are much more in favour of breast-feeding than those quoted by Amine in 1980 when he reported that 16% of the Bahraini women breast-fed after child-birth while 76% gave both feeding and 8% bottle-fed.

Although the overall percentage of breast-feeding women is higher in Bahrain than that in Glasgow, the figures for Bahrain reflect a marked change in the attitude towards infant feeding at a time when a higher incidence of breast-feeding was expected.
During the past few years the Ministry of Health in Bahrain has adopted a new policy of advocating the importance of returning to natural feeding. The effectiveness of this policy is seen when the results from this study are compared with that of Amine, E.K. in 1980.

5-Changes in the choice of breast-feeding over the passage of time:

Of the 49(67%) Glaswegian women who wanted to breast-feed at early pregnancy, 67% had the same desire a few weeks before delivery, 51% did so at birth and 31% and 27% were still breast-feeding at 3 and 6 months post-natally.
Of the 83(91%) Bahraini women who planned to breast-feed at their first visit to the antenatal clinic, 73% wished to do so before their deliveries but 42% breast-fed exclusively after child-birth. 41% of the women were still breast-feeding at 3 and 6 months post-delivery. Although the number of Bahraini women who had exclusively bottle-fed their babies was

very small, the above figures showing the number of women who exclusively breast-fed are important; because they reflect a change in the attitudes of people from the old to the new generation: If nothing is done about the situation now the number of women who choose to breast-feed will gradually decline till it reaches the stage when intervention and correction of the trend would be a difficult task to achieve.

The results had shown that 51% of the Glaswegian women who wished to breast-feed, when asked at the first interview, had followed their initial decision after child-birth and 29% changed their choice to bottle-feeding, while all women who chose to bottle-fed at early pregnancy had done so post-delivery.
42% of the Bahraini women who expressed their wish to breast-feed their babies, at early pregnancy, had done so after child-birth. While of the remainder the majority, 54%, changed their decision to both breast- and bottle-feeding. 71% of the women who said at early pregnancy that they would give both feeding did so after delivery.
By comparing the figures from both populations it was found that although more of the Glaswegian women had followed their breast-feeding decision than the Bahraini, only a very few of the Bahraini changed their choice to exclusive bottle-feeding in contrast to the Glaswegian women.

The results from both the Glaswegian and the Bahraini population may suggest that there is a failure in the educational programmes given to women during their pregnancy in antenatal sessions or in parent-craft classes. It may also indicate an insufficiency in the amount of support and advice being offered to these women by their close contacts. Adding to these the fact that only a minority of patients had been provided with information about infant feeding by their doctors means that a crisis in the attitudes towards breast-feeding is inevitable if the situation is not remedied.

No significant characteristics were found for both the Glaswegian and Bahraini women who had changed their choice of feeding method from what they had stated at early pregnancy.

6-Reasons given for the choice of method of feeding:

A-Reasons given for choosing to breast-feed:

I-Reasons given by the girls:

While all the Bahraini girls thought that breast-feeding is good practice only 64% of the Glaswegian said so. The commonest reason given by the Bahraini girls for choosing to breast-feed was that breast-milk was sterile and it would provide immunity to the child.

It seems that the responses of schoolgirls to the reasons for choosing to breast-feed are identical to those found in many Western countries. This is confirmed by the finding that the majority of the Glaswegian girls in this study and of the American schoolgirls, as reported by Pascoe and Berger (1985), liked to breast-feed because breast-feeding is natural.
The second most common reason mentioned by both the Glaswegian and the Bahraini girls was related to the close bonding and emotional contact that would develop between the mother and her baby through breast-feeding.
The results show that both the Glaswegian and the Bahraini girls have a good knowledge of the beneficial effect of breast-feeding. This could be due either to lessons taught in school or more probably to knowledge and experience passed over from mothers or a close relatives to young girls, as is the case in a traditional society like Bahrain.

II-Reasons given by the women:

Mothers who reported their wish to breast-feed, during pregnancy, and those who had definitely decided on breast-feeding after the baby's birth were asked for their reasons for choosing breast-feeding.
Almost 56% of the Glaswegian women in early pregnancy chose to breast-feed because they said, breast milk provides immunity to the baby and because breast milk is clean and sterile - that baby would be healthier. However, towards the end of the pregnancy and after the delivery the majority chose breast-feeding because it is best for the baby and because breast milk is ideal in its contituents. Martin and Monk (1980) reported a similar finding when they said that 87% of the Scottish women studied preferred breast-feeding because they thought that it was best for the baby. Other studies, as well, have shown comparable responses (Chin, Galea & Goel, 1981; Hally, et al.,1984).

Not only did the majority of the Bahraini women give identical responses to those of the Bahraini girls but also did not change their view from early pregnancy to post-delivery. The commonest reason given for choosing to breast-feed was that breast-milk provided immunity to the baby. The second most common reason given, at late pregnancy and after child-birth, was that breast-feeding was best for the baby.

Comparing the responses given for the choice of breast-feeding in Glasgow and Bahrain shows some differences: first, the commonest reason given by the Bahraini girls and women throughout pregnancy and after delivery did not change while among the Glaswegian population the responses varied between the girls and women at different stages of pregnancy and after delivery. This would suggest that more of the Bahraini women decide on the method of infant feeding very early in pregnancy or even before conception and remain strongly convinced of the advantages of the method chosen. This assumption is

made on the basis that the responses given by the Bahraini population were stable at all the stages of the study; secondly, responses related to the mother such as 'convenient', 'best for the mother' and 'cheap' were mentioned more frequently by the Glaswegian population than by the Bahraini. This could be explained by the fact that, in Bahrain, the concepts of pregnancy, child-birth and breast-feeding are not only considered natural processes in the cycle of a human life but also they are looked on as religious recommendations which every women has to follow. The holy Kouran provides its followers with special instructions regarding the necessity of having a family, advocates breast-feeding to those who can and advises about the duration of suckling. It also gives guidance about infant weaning and child rearing.

The findings among the Bahraini population would also suggest that information regarding breast-feeding is either passed on from close contacts such as mothers and relatives to the women or that most of the knowledge is obtained by self-effort which starts early in pregnancy or even before marriage.
Since the views in the Glasgow population changed over the pregnancy period it could be suggested that more were influenced by information provided to them during pregnancy.

B-Reasons given for the choice of bottle-feeding:

The most frequent reasons given by the Glaswegian women for choosing to bottle-feed varied from one stage to the other. 52% of the women at early pregnancy gave an amalgam of psycho-social, cultural and practical reasons expressed in terms of certain disadvantages to breast-feeding rather than a positive commitment to bottle-feeding. The most popular reasons given at late pregnancy were either that artificial feeding was a more convenient method of feeding or that it had to be given because the women wished to return to work early after child-birth. After delivery the two most commonly stated reasons for bottle-feeding were convenience and that bottle-feeding was thought to be better. MacIntosh, J. (1985) reported a different result from a group of Glaswegian women of first babies who were asked, after the child-birth, for their reasons for choosing to bottle-feed. The majority gave statements against breast-feeding as a reason for their choice to bottle-feed, while in another study it was reported that the most common reason given by a group of Scottish women was that somebody other than the mother could feed the baby with a bottle (Martin & Monk, 1980).

The number of Bahraini women who chose to bottle-feed exclusively was low and those who chose to give both breast- and bottle-feeding were asked to state their reasons for choosing to give artificial formula. The majority gave reasons against breast-feeding rather than reasons in favour of bottle-feeding. It was again found that the most common reason stated

by them did not change from early pregnancy to after child-birth.

The results from both the Glaswegian and the Bahraini women probably suggest that those women who chose to bottle-feed and those who gave reasons against breast-feeding might have some guilt feelings for not breast-feeding and hence they were trying to defend their choice by expressing their dissatisfaction with breast-feeding. Among those Glaswegian women who had already started bottle-feeding the commonest reason given again showed that it was mother-centred rather than a baby-concerned statement, such as convenience and the mother's preference. This finding is identical to that reported by Switzky, Vietze & Switzky (1979).
Although this suggestion cannot be proven, it could be said that some of the women who chose to bottle-feed were in fact indulging in a self-satisfaction act rather than choosing what is best for their babies.

7-Duration of breast-feeding:

I-Among the girls:

The majority, 52%, of the Glaswegian girls were not certain about the duration of breast-feeding while the mean duration of intended breast-feeding among the remainder, 48%, was 6 months.

Almost all of the Bahraini girls gave a response except for 10% who did not know. The range of responses was very wide to the extent that some girls wanted to breast-feed until the child was 3 years. Although 54% of the girls said 2 years, the mean duration of intended breast-feeding for the total sample was 19 months.

Although there is a marked difference between the results from Glasgow and those from Bahrain, it will not be seen as an abnormal finding. The majority of the Glaswegian girls belong to a society where bottle-feeding is almost the normal practice and most have rarely been faced with the actual experience of observing a mother breast-feeding her baby. It was thus surprising to find that 16% of them wanted to breast-feed for a period of more than 7 months.
The responses of the Bahraini girls was expected to be high because of the culture that they are bound to and because of the religion which instructs them to breast-feed for a long period. Therefore it was astonishing to find a number of girls wanting to breast-feed for a short duration (less than 5 months). Although they constituted a small percentage, the picture indicates a change in the beliefs among the Bahraini schoolgirls which if not remedied soon will mean that the number of such girls will increase and their intended breast-feeding duration would decrease by the time they are married and become mothers.

II-Women's response to the duration of breast-feeding:

Some of the women in all the stages of the study and in both of the population groups gave open-answers when asked about the duration of breast-feeding. These responses were put into two groups; the first included "Mother-related statements" such as 'As long as I could' and the other was the "Baby-related statements" such as 'As long as the baby requires or wants it'.

At early pregnancy 16% of the Glaswegian women gave baby-related statements and 10% did not know for how long they would breast-feed. The average duration of intended breast-feeding stated by the remainder was 5 months.

Although the range of the duration mentioned by the Bahraini women, at early pregnancy, was less than that mentioned by the Bahraini schoolgirls, the mean duration was similar (19 months). 48% of the Bahraini women wanted to breast-feed for two years, 8% gave open-answers and 20% were not certain.

A few weeks before delivery 45% of the Glaswegian women gave mother-related statements and 5% gave baby-related responses when asked about the duration of breast-feeding. Although the average duration of breast-feeding of the remaining mothers was similar to that quoted at early pregnancy (5 months), the range of responses had decreased from 2 to 12 to 1 to 10 months.

More of the Bahraini women, at late pregnancy, gave open-answers than those at early pregnancy. 42% and 33% gave baby- and mother-related statements respectively. The average duration of breast-feeding for those who gave a fixed duration was 20 months.

The average duration of intended breast-feeding, that was mentioned by the Glaswegian and Bahraini population, stayed the same from schoolgirls to women at early and late stages of pregnancy.

Of the Glaswegian mothers who had started giving exclusive breast-feeding or combined breast- and bottle-feeding to their babies at birth, 41% had stopped breast-feeding at three months post-delivery. The average duration of breast-feeding given to these babies was one month (4.5 weeks). Of the remaining 49% of women who were still giving the breast at 3 months, 47% and 21% gave mother- and baby-related statements respectively, when asked for how long they would continue breast-feeding. For the remainder the average duration of breast-feeding was 6 months.

Of the 97% of the Bahraini mothers who wholly breast-fed or gave breast- and bottle-feeding to their babies at birth, 17% discontinued doing so at 3 months post-delivery and the

average duration of breast-feeding given, by these women, was about 2 months (8 weeks). When the 83% of the Bahraini women who were still breast-feeding (wholly or mixed with bottle) at 3 months post-delivery were asked for how long they would continue, 43% and 20% gave baby- and mother-related statements respectively. The average duration of intended breast-feeding mentioned by the remainder was 20 months.

Marked differences were found when the responses of the Glaswegian population were compared with those of the Bahraini. First, the average duration of intended breast-feeding among the girls and during pregnancy was much higher in Bahrain than in Glasgow. Again this was expected because it would reflect the cultural beliefs in both these societies, where a longer breast-feeding duration was more likely to be found in Bahrain.
Second, of those who gave open-answers to the question of how long breast-feeding should continue, more women in Bahrain than in Glasgow gave baby-centred statements and more Glaswegian women gave mother-related statments. One explanation for this difference is that almost all the Bahraini women view breast-feeding as an act which involves one of the baby's rights in life and as a religious urge to which she has to abide. There is a possibility that the Glaswegian mothers look on breast-feeding as simply an option which, if taken, would have beneficial effect for the baby.

When asked at six months post-delivery the average duration of given breast-feeding, by women who had started post-delivery but discontinued later on, was 7 and 13 weeks in Glasgow and Bahrain respectively. 22% and 50% of the total sample of the Glaswegian mothers and of the Bahraini mothers respectively were still breast-feeding either entirely or combined with other milks at six months post-delivery.
Although the percentage of Glaswegian women breast-feeding at 6 months was low, it is seen as an improvement when compared with the results of other studies (Martin & Monk, 1980). The figures from Bahrain are disappointing because they show the pattern of a gradual decline in breast-feeding habits in Bahrain.
Figure-160 and figure-161 show the percentage of women breast-feeding at different durations in Glasgow and Bahrain when measured at 6 months post-delivery.

Figure-160 Percentage of women stopping breast-feeding at various durations in Glasgow
(Total 35 women who started, at birth, either
exclusive breast-feeding or combined breast- and bottle-feeding)

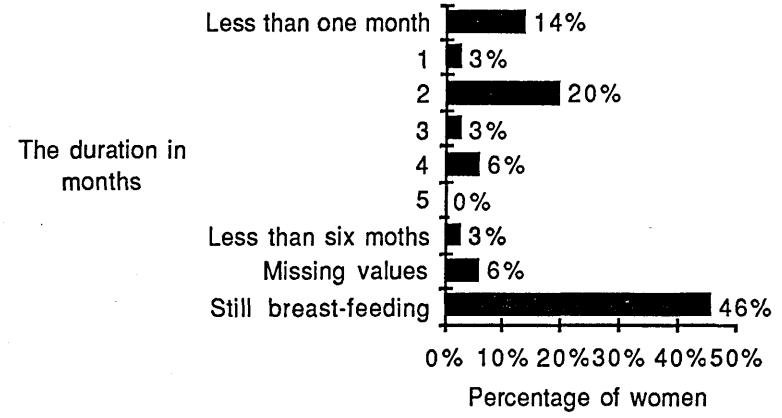


Figure-161 Percentage of women stopping breast-feeding at various durations in Bahrain.
(Total 88 women who started, at birth, either
exclusive breast-feeding or combined breast- and bottle-feeding)

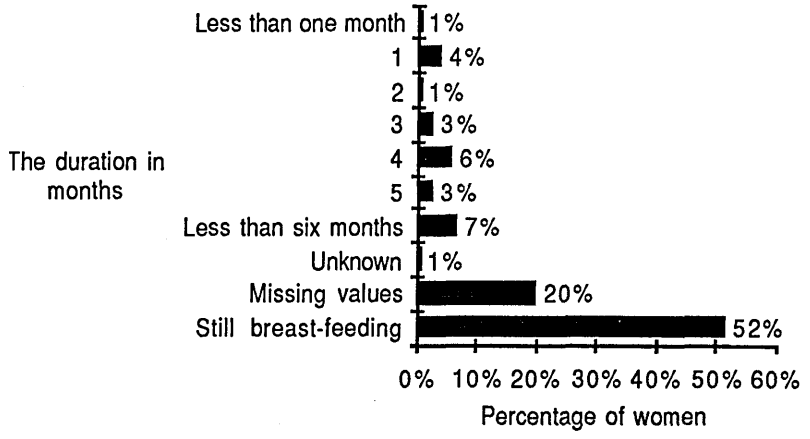


Table-24 shows the duration of breast-feeding for those women, both in Glasgow and in Bahrain, who started breast-feeding after child-birth either exclusively or combined with bottle-feeding, compared with figures reported by Martin and Monk in 1980.

The duration	Bahrain	Glasgow	Martin and Monk
Birth	100%	100%	100%
1 week	100%	94%	87%
2 weeks	99%	91%	77%
6 weeks	93%	69%	58%
4 months	84%	54%	32%
6 months	52%	46%	27%

Table-24 Duration of breast-feeding for those who
breast-fed initially after child-birth

A comparison of the results of the Glaswegian women with those quoted by Martin and Monk (1980) shows that both have the same pattern of a decrease in the prevalence of breast-feeding. Although the prevalence of breast-feeding among the Glaswegian women is better than those reported by Martin and Monk, interpretations should be made with care owing to the fact that the numbers are small.
Although Martin and Monk (1980) reported a lower figure for the prevalence of breast-feeding they viewed this as an improvement on previous years.

Despite the figures for the Bahraini population being better than the Glasgow figures and those quoted by Martin and Monk, the prevalence of breast-feeding at 6 months was low when measured against the cultural criteria of Bahrain. It is disappointing because, despite a strong belief among the schoolgirls, the women in early pregnancy and at late pregnancy that breast-feeding should be given for a prolonged period, about half discontinued nursing by six months post-natally. This phenomenon could be attributed to various reasons all of which indicate a change in attitudes: Firstly, various social, economical and cultural factors have played a part in this change such as women's employment and fragmentation of the extended family which means a decrease in the amount of support that women may receive: Secondly, the number of young women in Bahrain who are becoming mothers is large and at this age most women wish to have freedom to enjoy life which they may think that breast-feeding will not allow: Lastly there is the influence of western ideas on young women.

8-Characteristics of women who chose to breast- or bottle-feed:

I-The Glaswegian women:

Please note that for the purpose of statistical comparisons between the type of feeding and other variables only two groups of women have been used - those who stated their desire to breast-feed and those who opted for bottle-feeding. Because the number of women who wanted to give both (breast- and bottle-feeding) was small, at different stages of the study, they were excluded from such comparisons.

A-At early pregnancy:

There was a significant relationship between the level of education and the choice of infant feeding method ($P<0.001$). Among women who had received tertiary education the majority, 96%, chose to breast-feed and it seems that as a woman becomes better educated her knowledge of infant feeding and especially about the advantages of natural nursing, becomes more up-to-date. Her fear as well as her anxiety about breast-feeding would tend to diminish. Women with higher educational attainment are probably more influenced by the idea that their infants will benefit from breast-feeding. Lyon et al., (1981) explained the effect

of educational attainment on the peoples' attitude by saying "Since education introduces people to new ideas, the more educated person may be encouraged to become more a breast-feeder".

The type of feeding chosen was significantly related to the women's marital status ($P<0.003$) and to smoking habits ($P<0.001$). More married (88%) women and fewer smokers (15%) chose to breast-feed rather than to give artificial formula. More of these women tended to live with their husbands or partners and most attended the antenatal clinic at an early stage of pregnancy. However this finding was not statistically significant.

The study shows a strong relationship between the choice of breast-feeding and social class ($P<0.011$). If the unemployed are taken to be in social class 5, it was found that 51% of women who chose to breast-feed belonged to social classes 1 and 2 and 29% to social class 3. While none of the social class 1 women wanted to bottle-feed their babies 50% of women who belonged to social class 4 and 5 had considered this method of feeding.
Women who chose to breast-feed had a higher number of married siblings and a higher number of breast-fed nephews and nieces. These women tended to have more close contacts such as husbands ($P<0.001$), mothers ($P<0.001$) and friends ($P<0.006$) who encouraged them to breast-feed. Moreover, there was a significant relationship ($P<0.001$) between the woman's choice to breast-feed and the parents' attitude favourable towards breast-feeding.

Although very few women (5%) who chose to bottle-feed said that they would have nobody to help them in looking after their babies, none of those who breast-fed reported this. However no significant association was found.

Although there was no significant relationship between the choice of infant feeding and the women's age, the mean age of women who chose to breast-feed (26.5 years) was higher than the mean age of those who wanted to bottle-feed (24.7 years).

B-At late stage of pregnancy:
More women who still wanted to breast-feed at a late stage of pregnancy were married ($P<0.006$) and lived with a husband or partner ($P<0.016$). More wanted to have a larger family with an average of 3 children and fewer smoked cigarettes ($P<0.001$).

For both those who wanted to breast-feed and those who chose to bottle-feed the clinic ($P<0.018$) was the major source of information, while the doctor's role was a minor one. This is in contrast to Lyon et al., (1981) who found no link between the information obtained from

the clinic and the type of feeding chosen while Albers, R.M. (1981) reported that among the population he studied health professionals were found to be least supportive to the mothers in their choice of feeding method.

Once again more of the women who chose to breast-feed were encouraged by husbands ($P<0.001$), mothers ($P<0.001$) and friends ($P<0.003$) than in the bottle-feeding group, who had fewer such contacts who encouraged them to breast-feed. The mothers perception of their medical adviser's view regarding breast-feeding was significantly associated with the choice of feeding method ($P<0.002$). The number of women who chose to breast-feed was higher among mothers who during pregnancy perceived that their medical adviser favoured breast-feeding compared with those who perceived them to be neutral or having conflicting views.

Albers R.M. (1981) has also found that the most supportive person to the breast-feeding women were husbands, mothers, parents and friends.

Again social class was significantly related ($P<0.001$) to the choice of infant feeding at this stage of pregnany, since more women in the upper social class and more of the lower social classes wanted to breast-feed and to bottle-feed respectively.

Although the room where the baby's cot would be was significantly related to the type of feeding ($P<0.028$), surprisingly more women who chose to bottle-feed wanted their baby to sleep with them in the same room. This phenomenon can not be explained unless the idea of keeping the baby in a separate room, which is common in Western society, is accepted as a modern and normal practice. The sex of the baby did not affect the choice of feeding practice. A similar finding was reported by Lyon et al., (1981).

C-After delivery:

The majority of women who breast-fed had tertiary education ($P<0.001$). 64% of those who breast-fed came from social class 1 and 2 while 71% of those who bottle-fed belonged to social classes 4 and 5 ($P<0.002$). Identical findings were reported by Wright, Walker and Webster (1983).

The type of delivery that the women had and the method of feeding after delivery were significantly associated ($P<0.009$). Of those who breast-fed, the majority, 84%, had normal deliveries. Although 50% of women who had had a normal delivery bottle-fed their babies, the majority, 65%, of those who had a caesarean section or forceps delivery chose to bottle-feed. Martin and Monk (1980) have also reported a higher percentage of caesarean sections in women who chose to bottle-feed than women who breast-fed. Tiredness after such an operation may deter some women from breast-feeding. Also the separation of the

baby from the mother by the hospital staff, after such a delivery, may affect lactation.

To examine the effect of the mode of delivery on the choice of infant feeding it was found that 27% of women who chose to breast-feed their babies when asked at a late stage of pregnancy had in fact, after birth, given other methods of feeding to their babies. These women had had an instrumental delivery. However no significant relationship was found.

Although the majority, 88%, of mothers who breast-fed were married, no significant relationship was found between the method of feeding given to the baby and the marital status of the women after the child-birth.

There was also a significant relation between the duration of stay of the mother ($P<0.032$) and the baby ($P<0.021$) in hospital and the method of infant feeding. The mother who spent less time and whose baby was kept in hospital for a shorter period of time tended to breast-feed, as compared with women and babies who were kept for a longer period. Patients who are kept longer in hospital are usually those who develop post-delivery complications and therefore such women would be more inclined to bottle-feed their baby rather than breast-feed. This could be due to the inability of the mother to breast-feed because of the process of the illness. Failure of lactations may also occur if the baby is kept in the nursery or the special care unit and is separated from his mother for a long time.

A greater number of husbands ($P<0.001$), mothers ($P<0.001$), friends ($P<0.004$) and medical advisers ($P<0.001$) encouraged those mothers who breast-fed their babies to breast-feed than to bottle-feed.
Although more bottle-feeding women introduced solid foods early (before 3 months) than did those who breast-fed ($P<0.035$), both groups thought that the best type of solid to wean the child with was cereal.

D-At six months post-delivery:
Although none of the women who were still breast-feeding at six months post-delivery said that they did not want to have another child, surprisingly the majority of those who stated this were bottle-feeders ($P<0.035$). This is probably due to the fact that the number of women who were still breast-feeding at six months was small (16 women). The majority of women, 81%, who continued breast-feeding up till 6 months came from social class 1 and 2 ($P<0.001$). No significant relationship was found between the age of the women and breast-feeding at six months.

A significant relationship ($P<0.011$) was found between the feeding method which would be

given to the next child and the type of feeding given to the existing baby. The majority of women who chose to breast-feed the next child came from the group of women who were still breast-feeding their present child at 6 months. This finding was inconsistent with that reported by Hewat and Ellis (1985) and is probably a reflection on the mother's success and confidence in breast-feeding.

Characteristics of the Glaswegian breast-fed babies:

While none of the breast-feeding women thought that their babies were unhealthy, the number of babies who had one or more illnesses was higher among those who had been bottle-fed ($P<0.034$). The same finding was found at six months post-natally ($P<0.011$). Again, it was found that more of the babies who slept in a separate room had been breast-fed ($P<0.006$).

The mean body weight, at birth, of the breast-fed babies was higher (3.34 Kg) than those who were bottle-fed (3.28 Kg) and those who were given combined breast- and bottle-feeding (3.29 Kg). However no significant relationship was found between the method of feeding and the body weight of the baby at birth. Palmer, Avery and Taylor in 1979 had reported a similar finding.

2-The characteristics of the Bahraini women:

Since the number of women who chose to bottle-feed exclusively was small, comparisons were made only between those who wanted to exclusively breast-feed and those who wanted to give combined breast- and bottle-feeding. These comparisons were not made on the results from women at early pregnancy because the number who chose at that time to give both types of feeding was small (8%). Therefore, only the characteristics of women at late pregnancy and post-delivery will be discussed.

A-At late pregnancy:

Despite the fact that all women were married the majority, 62%, who wanted to breast-feed were living with their husbands ($P<0.015$). As mentioned earlier some Bahraini pregnant women move to stay with their parents towards the end of their pregnancy and for a few weeks after child-birth.

Although there was no significant relationship between the method of feeding and the mother's age or level of education, it was found that among all educational levels the majority chose to exclusively breast-feed their coming babies.

The attitude of husbands and parents to infant feeding was found to be significantly related ($P<0.001$) to the chosen feeding methods. 95% of husbands and 97% of parents of the women who chose to breast-feed were already encouraging them to do so. Those women also had more female friends who expressed favourable attitudes towards breast-feeding

($P<0.001$).

The majority of women who chose to breast-feed had not only had husbands ($P<0.001$) and mothers ($P<0.002$) who opposed artificial feeding but they also discouraged the women from bottle-feeding their babies, while most of the women who chose to give both types of feeding had husbands and mothers with a neutral attitude towards bottle-feeding.

More women who chose to breast-feed anticipated that their parents and relatives would help them in looking after their babies ($P<0.045$). This finding would confirm the idea that women who have near relatives who can support them are more prone to breast-feed.

B-After child-birth:

No significant differences were found between the mean ages of women in the three types of feeding method and there was no significant relationship between the method of feeding and the age of the women.

The type of delivery however was significantly related to the method of feeding given to the baby ($P<0.036$). As with the Glaswegian cohort, 74% of the Bahraini women who breast-fed their babies had had normal child-births. Although most of the women who had had an instrumental delivery gave both breast and bottle, none of them had exclusively bottle-fed.

To examine the effect of the mode of delivery on the choice of infant feeding, it was found that 49% of the Bahraini women who chose to breast-feed their babies when asked at late stage of pregnancy had in fact given both types of feeding to their babies after birth. However no significant relationship was found and these women had had a normal delivery. It was also found that all of the women who stated their wish, at late pregnancy, to breast-feed their babies and who in fact were delivered by a caesarean section, did not change their choice of feeding method. These results suggest that women who had made a firm desicion either to breast-feed or to give both types of feeding prior to delivery were not inclined to change their decisions as a result of the type of delivery that they had.

Although the majority, 66%, of women who breast-fed or gave both types of feeding to their babies had said that the choice of feeding was by their own decision, 79% of those women who had been advised by other people about the method of feeding gave combined breast- and bottle-feeding ($P<0.010$).

A significant relation was found between the attitudes of the patient's mother ($P<0.047$) and friends ($P<0.017$) to artificial feeding and type of feeding given to the baby. It was found that when mothers and friends encouraged bottle-feeding more women tended to give both types of feeding than exclusive breast-feeding. It was also noted that the majority of women who started breast-feeding had friends and mothers discouraging them from artificial

feeding.
59% of women who introduced solid foods early were among those who gave both breast- and bottle-feeding, but no significant relationship was found.

C-At six months post-delivery;
When the women were asked, at this stage of the study, whether, if they had the choice, they wanted to give the same type of feeding as they had started post-delivery, it was found that the majority of women who said 'Yes' were among those who had breast-fed ($P<0.001$). There was a significant relationship between the method of feeding given to the babies at 6 months and the type of feeding that the women would offer their next child ($P<0.038$). Although none considered exclusive bottle-feeding, the majority of women who were bottle-feeding their existing child, at six months, chose to give combined feeding to their next baby.

Characteristics of the Bahraini baby:
The mean body weight at birth of the babies who had been given both breast- and bottle-feeding was higher (3.05 Kg) than those who were breast-fed (3.0 Kg) and those who had been given bottle-feeding (2.5 Kg). However, surprisingly no significant relationship was found between the mode of feeding and the body weight of the baby at birth or how long the baby was kept in hospital.

Factors associated with discontinuation of breast-feeding early after child-birth:
Of the 35 Glaswegian women who had put their babies on the breast (either exclusively or in combination with bottle-feeding) 44% discontinued by 3 months post-delivery.
As in Martin and Monk's survey (1980) the commonest reason for stopping breast-feeding, given by 47% 0f the Glaswegian women, was that breast-milk was insufficient. 27% said that they had medical problems, such as a painful breast or a sore nipple, which forced them to discontinue breast-feeding. 20% stopped nursing in order to return to their work or because they had no privacy to breast-feed while at home.

Although the number of Bahraini women who had stopped breast-feeding by three months post-natally was small (15%), a lack of milk was again the commonest reason (38%) given, while another 38% thought that their baby had rejected the breast rather than the mother wishing to discontinue.

Although firm conclusion can not be drawn because the number of women (from Glasgow and Bahrain) who had discontinued breast-feeding was small, the results obtained in this study are in accordance with other published work, for instance, McIntosh (1985).

Although a lack of breast-milk has always been blamed for stopping breast-feeding, it may be right to state that the failure of a mother to nurse her baby and so as to avoid guilt feelings, she would rather blame other factors rather than herself for that failure. Often the mother who develops a failure of lactation may establish a defence mechanism to ameliorate her failure; she may explain her failure to outsiders so that no doubts are cast on her qualities as a mother, or she may underline the negative aspects of breast-feeding to protect herself. This was clear among the Bahraini women who not only blamed scarcity of milk but also the baby for not taking the breast. There might be some truth in their responses but certainly some women may misinterpret some incidents. For some women the baby's cry may indicate a sign of hunger reflecting an insufficiency of milk: so they would stop exclusive breast-feeding or add artificial formula or introduce solid foods early . For others any temporary rejection by the baby of the breast owing to any factors such as the baby not being comfortable at that moment may lead the mother to misunderstand the condition and so totally stop breast-feeding.

Cutting and Ludlam (1984) thought that some mothers whose babies cry often may assume that their milk is insufficient for their baby especially when the look of breast-milk, which is watery, is compared to cow's milk, which is to a certain extent thick. Such mothers are more prone to discontinue breast-feeding or to start artificial formula.

Women who decide to breast-feed need adequate emotional support prior to and following delivery in order to start and continue breast-feeding successfully. Since the mechanism of breast-feeding is related very closely to the psychological and emotional well-being of the women, failure of milk ejection and let down reflexes might occur if breast-feeding is tried while the woman is upset. The end result would be a hungry crying baby putting more stress on the mother who would probably give up breast-feeding.

*The following are some of the characteristics of the women who stopped breast-feeding early;

The Glaswegian women had a mean age of 25 years, which was similar to the mean age of women who chose to bottle-feed their babies soon after birth, and were younger than the mean age of all the population. However no significant relationship was found. The discontinuation of breast-feeding and the level of maternal education were significantly related ($P<0.017$). 69% of women who stopped breast-feeding early had had a secondary education while 31% continued on to tertiary education. These mothers had had the same trend of deliveries as the rest of the women but a higher percentage of them belonged to the social classes 4 and 5 than in the total sample population (33% versus 29%), however no significant relationship was found.

The mean age of the Bahraini women who discontinued breast-feeding was similar to that of the rest of the population and the majority had had a secondary education, however no significant relationship was found. Although no significant relation was found, a higher percentage of these women had had an instrumental delivery. Although the mean body weight of their babies at birth (2.8 Kg) was greater than those who gave bottle-feeding, it was lower than those who continued breast-feeding. However it was not statistically significant.

In conclusion the Glaswegian women who stopped breast-feeding tended to be younger, to come from lower social classes and to have had a lower education attainment. While among the Bahraini women no specific criteria were found except that they were less likely to have had a normal child-birth than the rest of the population.

Knowledge of weaning:

1-Time of weaning:

The mean time of weaning mentioned by the Glaswegian girls was at 5.5 months. The Bahraini schoolgirls wanted to wean their babies at a later time (7 months), which is explained by the fact that these girls were considering a longer duration of breast-feeding. While the Glaswegian women, at early pregnancy, thought that the mean time for the introduction of solid food to the baby was 5 months, this became 4 months when they were asked a few weeks before delivery. After child-birth, in compliance with lay advice rather than the official recommendation of health personnel, the majority, 51%, of the Glaswegian women had introduced solids early (before three months). The remaining 49% wanted to wean their babies at a mean time of four months. A significant relationship was found between early weaning and the method of feeding given to the baby ($P<0.035$). 73% of women who had started early weaning had in fact bottle-fed their babies. A similar finding was reported by Martin and Monk (1980).

The mean time of weaning stated by the Bahraini women was 4.5 and 4 months at early and late pregnancy respectively; however 61% had introduced solid food to the baby by three months after delivery. The mean time of weaning stated by the remaining 39% of women, after child-birth, was 5 months. The number of Bahraini women who had started early weaning is not only surprising but it is an alarming sign of change in the attitudes and shows ignorance in the mothers. Although it may reflect as well the false belief that fat babies are healthy ones, it would indicate the influence of western ideas where more women adopt the western pattern of behaviour. The impact and the blandishments of the baby-food manufacturers' advertising campaigns play their part as well. Although such advertising has been banned in Bahrain, it seems that its influence is still finding its way among the people.

To be fair, it has to be stated that some mothers, even against their will, are usually under continuous pressure from close relatives and friends advising them to introduce solid foods to the baby early so that they and the baby could have a good night's sleep.

Although no significant relationship was found between the early introduction of solids among the Bahraini women and the feeding method, 57% of the women who introduced solid foods early to their babies had given combined breast- and bottle-feeding.

The time of weaning is a controversial subject and although there is a disagreement among health professionals over the precise stage at which weaning should take place, most agree that infants before the age of 3 to 4 months should not be introduced to solid food. Cutting and Ludlam (1984) suggested four factors to be considered when deciding about the best time for weaning: 'The adequacy of lactation for growth, the risk of giving contaminated food supplements in poor circumstances, the maturity of the infant's digestive enzymes and the critical period when infants learn to chew solid foods'. The authors believed that a baby on a well established breast-feed on demand would rarely need additional nutrient before the age of three months.

A national survey in England and Wales in 1975 (Martin, 1975) showed that 85% of mothers had introduced solid foods to their babies before the age of three months and 97% had done so by the age of four months. In view of the recommendation by the Department of Health and Social Security's working party in 1974 and 1980 (DHHS, 1974, 1980) - that mothers should not give solid foods before three months - Martin and Monk described the findings of their 1980's study as a marked improvement because of the trend to the later introduction of solids. Although they reported that 55% of the total population had started solids before the age of three months, their figure for the Scottish women was higher (62%). Goel, House and Shanks (1978) found that 60% of a group of Scottish women introduced solid foods to their baby before the age of 3 months. Comparing the figure (62%) quoted by Martin and Monk with that from the Glaswegian women in this study (51%), it could be said that continuous improvement in the mother's attitude towards solid feeding is taking place. The reason could be that the antenatal clinics and parent-craft sessions are playing a major role in advising pregnant women about weaning.

2-Type of solid food introduced at weaning:

The transition to solid food is not a clear cut one. There are a number of intermediate stages between a wholly liquid diet and a mixed feed. Some women tend to add rusk or cereals to the milk feeds, introduce pieces of fruit or give the baby a taste of the normal family diet. For the purpose of this study the introduction of solids was considered if any feeds other than

fluids were given to the baby.

Branded ready-made baby food was by far the most common solid chosen by the Glaswegian girls and women at early pregnancy. The next most common was cereal. The ready-made baby food which is packed in a jar or tin is usually easy to use, needs no special preparation and is not time-consuming. The reasons behind the girls' and women's choice of this type of feeding are many. They may have chosen this type of solid because they think that it is easier to use or that this food is ideal in its constituents and healthier for the baby.
Although at the end of their pregnancy and at post-delivery the Glaswegian women's favourite solid food was cereal, including rusks, the next most commonly mentioned solids were the branded ready-made baby foods. Martin and Monk (1980) found similar findings when they reported that cereals and rusks were the commonest type of solids that women first gave to their babies.
Surprisingly, very few women gave their babies fresh-cooked home-made food.

The picture in Bahrain is slightly different than in Glasgow and the most common type of solid foods mentioned were fruits and cereals. The commonest choice of schoolgirls and women in early pregnancy was cereals with fruit the second. In late pregnancy fruit was on top of the list followed by cereals. At post-delivery the order was again reversed.
The pattern of solid feeding was similar in both Glasgow and Bahrain with the exception that fewer Bahraini women decided to start weaning with branded ready-made foods.

Additional drinks:

When women at three months post-delivery were asked whether they had given their babies water, fruit juices or other drinks, it was found that almost a similar number of the Glaswegian and Bahraini babies had not received any additional drinks (18% versus 15%).

Chapter VI

Conclusion:

The main aim of this study was to explore the attitudes and knowledge of people towards infant feeding at a time when there is a widespread campaign in the developed and some of the developing countries towards a return to the natural way of living, which includes breast-feeding.

The study was implemented in both Glasgow and Bahrain. Two cohorts were selected: schoolgirls and a group of primigravid women who were interviewed in early pregnancy and were followed up through pregnancy to six months after delivery. The following paragraphs contains some of the findings of the study.

Although more Bahraini girls and women during their pregnancy considered nursing their infants, surprisingly a substantial number of them had changed their minds after child-birth. The same trend was found among the Glaswegian population; however the number of the Glaswegian women who followed their choice was higher than in Bahrain. Amazingly however, almost all the women from both areas who chose to bottle-feed exclusively did so post-delivery.

By six months after delivery, more of the Bahraini mothers continued to breast-feed their babies than in Glasgow. Nevertheless, the incidence and prevalence of breast-feeding in both countries showed an increase from previous years when compared with other studies.

Although trends towards breast-feeding showed a gradual decline from the wishes of schoolgirls to those of women during pregnancy, there was a marked drop in the number of women who breast-fed their babies at birth from the total number of women who early in pregnancy said they wished to do so.

The critical period when change in the method of feeding occurred among the women who had started their babies on the breast was one month for the Glaswegians and after the fourth month for the Bahraini women.

Mothers at early pregnancy has anticipated that their doctor would be their major source of information about infant feeding. On the contrary, the doctor's role to provide such information during pregnancy was almost non-existent. While clinics represented the main place for education and knowledge in Glasgow, the mother's own enquiries and parents played the major part in providing information and experience to the Bahraini women.

Close contacts such as husbands, mothers, friends and medical advisers were found to have a great impact on the women's decision about her choice of infant feeding. In both countries women who had such contacts who were favourable towards breast-feeding were more inclined to breast-feed. However, a significant relationship was found between the choice of bottle-feeding and close contacts encouraging that attitude.

Among the Glaswegians married women with higher educational attainments and who were non-smokers were more prone to breast-feed their infants. More breast-feeding women belonged to the upper social classes. It was also found that such women had more experience of observing breast-feeding, due to the fact that they had a higher number of breast-fed nephews and nieces. The majority of women who breast-fed their infants had in fact had normal deliveries and they and their babies were kept in hospital for a shorter duration than women who bottle-fed.

Because very few women in Bahrain had chosen to bottle-feed their babies it was difficult to make any distinguishable characteristics between the breast- or bottle-feeding mothers.

Differences in the attitude of both populations were found when they were asked to state the reasons for their choice of infant feeding. While higher numbers of women in Glasgow than in Bahrain gave mother-centred statements, more of the Bahraini's reasons were related to the baby. This trend is probably due to the fact that the Bahraini women have a different view of breast-feeding. They see it as a religious recommendation and as a practice which every women should perform so that their femininity is not diminished.

The breast-fed Glaswegian infant had fewer attacks of illnesses. The same finding occured in Bahrain, although no significant relationship was found between the mode of feeding and the frequency of illness.

If the success of feeding education given to the mothers during the antenatal and parent-craft sessions had to be measured on the basis of the number of women who had kept to their earlier decisions about the choice of infant feeding and the number of undecided women who were not persuaded to breast-feed at birth, it could be said that such programmes did not have a major influence on the mother's decision. Failure of such teaching sessions can be assumed if the number of women who wished to breast-feed early in pregnancy was not sustained till after delivery. A high number of women, both in Glasgow and Bahrain, who opted for breast-feeding at the first interview had changed their minds after child-birth. It was also found that most women who had not decided during pregnancy about the method of feeding had bottle-fed their babies after delivery. This is the group of

women who, if enough education and support had been given to them, could have been motivated to breast-feed.

Educational programmes should be constructed in such a way that they persuade women to breast-feed; they should be given not only during pregnancy but also before conception. There is also a need for a greater involvement of other agencies such as women's groups and more people such as husbands or very close relatives or friends so that the idea of breast-feeding could be appreciated by the mothers and supported by others. Changes in hospital routines and professionals' attitudes should be made so that a positive environment in favour of breast-feeding is established and maintained. There is an urgent need for the patient's family practitioner to take part in the patient's education. The family doctor is the mother's closest health professional and could affect attitudes towards a return to natural child feeding.

Recommendations.

More women now are attempting to breast-feed their babies. However, without support, guidance and encouragement many of them either feel anxious about starting breast-feeding or they often stop it a short time after delivery.

On the information obtained from this study and from other reports, it seems that several systematic steps should be considered to remove obstacles that block a return to the trend of natural feeding. For instance, a first step could be to identify reasons which make mothers choose to breast- or to bottle-feed; such reasons include factors related to the personality of the women, the structure of society, the common beliefs of women and factors related to hospital habits and health care providers' attitudes. Secondly, attempts should be made to find solutions for what are to be seen as wrong attitudes.

The factors which affect the mother's attitude to the choice of infant feeding are various. Ignorance and a decrease in the amount of support that these women receive can directly affect the choice of infant feeding. Events occurring during pregnancy, labour and post-delivery can contribute to the decision that the mother takes about the type of infant feeding.

The societal factors are firstly, those which reflect the changes in the stucture of society such as the fragmentation of the extended family, the absence of useful and healthy traditional customs and a change in the cultural attitudes; second, the effect of urbanization which affects the way by which knowledge and expertise are being passed from mother to daughter and from sister to sister; third, the complexity of society and the economic pressures which have led to changes in the woman's role in life; fourth, the impact of western influences and the generalized negative attitude to breast-feeding; fifth, the common trend away from the natural ways of living, which include breast-feeding; last, a relaxation in some government policies which allow baby-food manufacturers free rein in influencing the attitudes of ordinary people towards infant feeding.

Certain hospital routines and professionals' attitudes have also affected infant feeding habits. These include factors such as first, strict hospital routines in obstetrical units which lead to a negative atmosphere towards breast-feeding; second, a lack of professional enthusiasm about, and certain knowledge of, breast-feeding; finally, the infiltration of the baby-food industry's ideas within hospitals atmosphere and among the medical staff. Patients' attitude are as well influenced by free information booklets carrying manufacturers advertisements, which are usually given to pregnant women .

Attempts to reverse the trend of feeding can succeed only if communities are convinced of

the beneficial effects of natural feeding and the disadvantages of artificial feeding and are prepared to make changes in their life-style so they can understand the desirability of breast-feeding. To achieve such a goal three integrated approaches should be considered: first, education; then, changes in hospital routines and in the health professionals' attitudes; finally, legislative decisions by the policy-makers in favour of breast-feeding which will in effect help to change the attitudes of the society.

1-Education:

The promotion of successful breast-feeding, its art and science should be conveyed not only to women of child-bearing age but to all members of society, schoolgirls as well as boys, fathers, professionals, community and religious leaders and lay people, so that adequate support and an environment conducive to nursing may be fostered. Any educational package should not be delivered without due and paramount consideration of the cultural backgrounds of the society concerned. It should also utilize cultural methods of communication. It should contain both modernizing and traditional cultures that are supportive of breast-feeding. Hence, females and males, young and adult, socially advantaged and people of lower social classes need all to be involved in such education if the idea of breast-feeding is to find its way throughout the community.

Since the home is the primary locus of education for pre-school children, education should start from there, as children can be manipulated so that they grow up with positive attitudes towards breast-feeding. In addition to the opportunity that these children will have in observing their mothers and close relatives breast-feeding, they will be reared in a positive environment all aspects of which will have a favourable attitude to breast-feeding.

Thereafter, the educational process should continue through school to under-graduate studies ending with post-graduate studies and courses. The process of breast-feeding, its physiology and mechanism should be part of the curriculum of secondary schools, since many girls have apprehensions about breast-feeding and most women choose the method of infant feeding long before they become pregnant. Therefore, an adequate knowledge and understanding of the advantages of breast-feeding, theoretical as well as practical, with observation of the breast-feeding act, will not only modify the young girls' attitudes but will probably ensure more successful breast-feeding. More information on breast-feeding should be made available, especially to adolescent girls. Because the father has usually an important role on the decision-making about infant feeding, young boys should also be included in such educational programmes.

To ensure successful education the teachers should be well-trained and have an understanding of natural nursing.

The art, physiology and ways of solving problems related to breast-feeding should be included in the curriculum of undergraduate medical and nursing students because these are the people who can influence the population's decisions about infant feeding.
Due emphasis must be given to the subject of postgraduate medical education if professionals are to be more effective in promoting the practice of breast-feeding. Various organizations such as the World Health Organization, UNICEF and the Department of Child Health at the London School of Hygiene have been involved in arranging courses and seminars for the orientation, continuing education and training of medical personnel in all aspects of breast-feeding. All health professionals, especially paediatricians, gynaecologists, family practitioners, health visitors and midwives should be encouraged to attend such refresh courses since several authors claim that even some professionals are ignorant of some aspects of breast-feeding (Winikoff et al., 1986).
Midwives and obstetric nurses, because of their opportunity for patient-teaching, can play a major role in encouraging and supporting breast-feeding.

Fostering a positive attitude towards breast-feeding needs the art of persuasion: The approach adopted by some nurses and clinicians should be much less dictatorial; instead it should involve more negotiation and mutual discussion. It has been reported that mothers who received adequate supportive programmes from the health visitors, post-delivery, would breast-feed for a longer period than do other women (Kelly, 1983).

The health professionals responsible for nutrition and counselling should have adequate knowledge of the mother's background, find out what information the mother has and how they can encourage a favourable attitude in the mother. They should be able to allay the woman's anxiety and fears about breast-feeding and assist her to select the best weaning time and the best solid food.

Harfouch (1982), in a trial to persuade health professionals to change their attitudes in favour of breast-feeding, said "If this magnificent encyclopedia type of compilation and genuine interpretation, based on some forty years of personal experience in developing and developed countries, does not give an impetus to health professionals to update their knowledge on the subject, to modify their attitudes and practices and to restructure and reorganize health service patterns and routines so as to make them more conducive to the natural, unique, simple, cheap, available, safe, anti-infective and child spacing method of infant feeding, I do not know what else would."

2-Hospital Routines and health services:

The environment of the hospital and health service facilities such as antenatal clinics, should be biased in favour of breast-feeding by such means as positive attitudes on the part of the personnel and a promotive atmosphere to breast-feeding via the availablity of audio-visual aids and posters fostering natural nursing.

-During pregnancy attempts should be made to present information about infant feeding in a simple way easy that is to understand and to implement. Such information should include areas related to breast- and bottle-feeding and areas related to weaning. Pre-natal instructions should include both theoretical and practical advice. Voluntary organizations, such as the La Leche League, which have the task of promoting breast-feeding should also be involved in the educational programmes. These groups usually consist of breast-feeding mothers who can pass on their experience and knowledge to the newly-pregnant women. The father should also be helped to understand the symbiotic nature of lactation so that he will support the activity through encouragement and through assisting with domestic chores or the care of other children.

-During delivery and the post-natal period, the hospital routine should be adjusted to the needs of the patient. Therefore, strict routines in the obstetrical units are undesirable if successful breast-feeding is to be achieved. Obstetrical procedures and practices should be consistent with the policy of promoting and supporting breast-feeding. Women should be allowed as far as is possible to have a normal delivery and less sedation should be used. Early skin-to-skin contact and immediate post-delivery breast-feeding with minimal separation of the baby from its mother are factors which help successful lactation. Rooming-in facilities should be provided and the unnecessary supplementation of glucose water should be prevented. Since the appearance of bottles or powdered milk could give the impression to the mothers that these are better ways of infant feeding, all such items should be out of sight and provided only if needed on prescription rather than at the nurse's discretion.

If the baby has to be hospitalised, facilities for the mother to be able to nurse her infant frequently should be provided.

Health staff should be able to identify the mother's perception of the infant's hunger so that this form of social support directly addresses the mother's need.

If the mother desires a contraceptive she should be advised on the methods which have a minimal effects on lactation and milk production, such as the Intrauterine Contraceptive Device or the progestron-containing pills.

Doluas in the form of the patient's mother, sister or close relative should be allowed to spend

more time with the patient as they are the ones who will provide support and help when the patient returns home.

3-Policy:

Since breast-feeding is a deeply-rooted traditional practice and in addition a religious prerequisite which was practiced by almost all of the people at least a generation ago, it should be preserved and protected from the infiltration of influences promoting artificial feeding.

All channels of communication such as policy makers, religious and community leaders, health personnel and governmental bodies responsible for nutrition, agriculture, finance and information should all be involved in the goal of encouragement and promotion of breast-feeding. Therefore, it is important to persuade such people to change their policies in order to preserve the healthy traditional methods of infant feeding and the prevention of some of the unhealthy imported ideas.

The government of each country should adopt legislation to promote breast-feeding. there should be appropriate control of the marketing and advertising of baby foods as well as more control over the free availability of bottles and milk powders in the drug shops; facilities of the health care system should never be used for the promotion of baby foods and artificial formula and no person paid by the baby-food manufacturers should be allowed to work in the health care system; third, mass campaigns utilising all the media - television, radio, magazines, newspapers and posters - in favour of breast-feeding; fourth, working mothers should be given long maternity leave, paid break-hours during the day for nursing and creches at work should be provided; finally, reorganization of the health services in order to make it more adaptable for the promotion of breast-feeding.

Although some of the recommendations mentioned seem undemocratic, it is necessary to take strong action to prevent a further decline in the incidence of breast-feeding and to promote a return to a more natural life-style.

Most of the recommendations mentioned can easily be implemented in a developing country like Bahrain however, some could easily, as well, be adopted in to the developed countries.

REFERENCES

Addy, D.P. (1976)

Infant feeding, a current view.

British Medical Journal, 1, 1268-1271.

Albers, R.M. (1981)

Emotional support for the breast-feeding mother.

Pediatric Nursing, 5, 109-124.

Allen, L.H. & Pelto, C.H. (1985)

Research on determinants of breast-feeding duration suggestion for biocultural studies.

Medical Anthropolgy, 98-105.

Alnasir, F.A.L. (1987)

Infant feeding in Bahrain

Bahrain Medical Bulletin (Accepted for Publication 1987).

American Academy of Pediatrics (1978)

Breast-feeding.

Pediatrics, 62, 4, 591-601.

American Academy of Pediatrics Committee on Nutrition.(1980)

Feeding of Supplemental Foods to infants.

Pediatrics, 65, 6, 1178-81.

Amine, E.K. (1980)

Bahrain Nutritional status Survey.

UNICEF, Gulf Area Office, Abudhabi, 43-45.

Andrew, E.M., Clancy, K.L. & Katz, M.G. (1980)

Infant feeding practice of families belonging to a prepaid group practice health care plan.

Pediatrics, 65, 5, 978-988.

Apple, R.D. (1986)

Advertised by our loving friends: The infant formula industry and the creation of new pharmaceutical markets 1870-1910.

Journal of The History of Medicine, 41.1, 3-23.

Arneil, G.C. (1967)

Dietary study of 4365 scottish infants 1965.

Scottish Health Services Study, Scottish Home and Health Department, No. 6.

Article (1982)

Traditional feeding of the infant.

Central African Journal of Medicine, 28, 6, 147-148.

Article (1984)

Racial and educational factors associated with breast-feeding. U.S.A. 1969-1980.

Morbidity and Mortality Weekly Report, 33, 11, 153-154.

Auricchio, S., Follo, D., Ritis, G., Giunta, A., Mazrati, D., Parampolini, L., Ausaldi, N., Levi, P., Dallolio, D., Bossi, A., Cortinovis, I. & Marubini, E. (1983)

Does breast-feeding protect against the development of clinical symptoms of coeliac disease in children.

Journal of Pediatric Gastroenterology and Nutrition., 2, 3, 428-433.

Axelson, M.L., Kurinij, N., Sahlroot, J.T. & Forman,M.R. (1985)

Primiparas beliefs about breast-feeding.

Journal of American Dietetic Association, 85, 1, 77-79.

Bacon, C.J. & Wylie, J.M. (1976)

Mother's attitude to infant feeding at Newcastle General Hospital in summer 1975.

British Medical Journal, 1, 308-309.

Barnes, D. & Barnes, P. (1976)

Infant feedings: Survey of mothers practice and attitude.

Nursing Times, 72, 32, 1250-1253.

Barrie, H.(1985)

The breast addicted baby.

Faculty News: Faculty of the Royal College of General Practitioners, Vol 5, No. 1, 1-2.

Beckerleg, S.(1984)

Socio-religious factors affecting the breast-feeding.

Human Nutrition. Applied Nutrition, 38, 5, 368-376.

Behairy, F.E., Mougi, M.E., Mostafa, S. & Osman, N.H. (1976)
The nutritionally at risk child. Part 1-study of some socioeconomic and cultural factors.
Gazette of Egyptian Pediatric Association, 24, 1-2, 23-29.

Bentovim, A.(1976)
Shame and other anxieties associated with breast-feeding: A system theory and psychodynamic approach.
Ciba-Foundation Symposium, 45, 159-78.

Berger, A. & Winter, S.T. (1980)
Attitude and Knowledge of Secondary school girls concerning breast-feeding.
Clinical Pediatrics (Philadelphia), 19, 12, 825-826.

Bergevin, Y., Dougherty, C. & Karmer, S.M. (1983)
Do infant formula samples shorten the duration of breast-feeding.
Lancet, May, 1148-1151.

Berkelhamer, J.E., Whitham, R.H. & North, J.J. (1977)
Distorted conceptions of infant nutrirtion among urban mothers.
Clininal Pediatrics (Philadelphia), 16, 11, 986-987.

Beske, E.J. & Gravis, M.S. (1982)
Important factors in breast-feeding success.
Maternal Child Nursing, 7, 174-179.

Biddulph, J.(1983)
Legislation to protect breast-feeding
Pupa New Guinea Medical Journal, 26, 1, 9-12.

Bloom, K., Goldbloom, R.B., Robinson, S.C. & Stevens, F.E.(1982)
II-Factors affecting the continuance of breast-feeding.
Acta Pediatric Scandnavica Supplement, 300, 9-15.

Bloom, K., Goldbloom, R.B. & Stevens, F.E. (1982)
I-Factors affecting the mother's choice of infant feeding methods.
Acta Pediatric Scandnavica Supplement, 300, 3-8.

Boulton, T.J.C. & Coote, L.M. (1979)
Nutritional studies during early childhood. II- Feeding practices during infancy and their relationship to socioeconomic and cultural factors.
Australian Pediatric Journal, 15, 2, 81-86.

Broussard, A.B. (1984)
Anticipatory guidance adding solids to the infant's diet.
Jogn Nursing, 13, 4, 239-41.

Brown, F., Chase, J. & Winson, J. (1961)
Studies in infant feeding choice of primipara.
Journal of Proj Technol, 25, 412-421.

Bryant, A.C.(1982)
The impact of kin, friend and neighbour networks on infant feeding practices.
Social Science and Medicine, 16, 1757-1765.

Bullen, J.J., Rogers, H.J. & Griffiths, E. (1972)
Iron-binding proteins and infections.
British Journal of Haematology, 23, 389-392

Businco, L., Marchetti, F., Pellegrivi, G.,Cantani, A. & Perlini, R. (1983)
Prevention of atopic disease in at risk newborns' by prolonged breast-feeding.
Annals of Allergy, 51, 2, 2, 296-299.

Cable, T.A. & Rothenberger, L.A. (1984)
Breast-feeding behavioral patterns among La Leche League mothers: A descriptive survey.
Pediatrics, 73, 6, 830-835.

Call, J.D. & Calif, L.A. (1959)
Emotional factors favoring successful breast-feeding of infants.
The Journal of Pediatrics, 55, 485-496.

Carvalho, M.D., Robetson, S., Friedman, A. & Klaus, M. (1983)
Effect of frequent breast-feeding on early milk production and infant weight gain.
Pediatrics, 72, 307-311.

Casey, C.E., Neifert, M.R., Seacat, J.M. & Neville, M.C. (1986)
Nutrient intake by breast-fed infants during the first five days after birth.
American Journal of Disease of Children, 140, 933-936.

Central Statistics Organisation (1985)
Statistical abstracts 1984.
Council of ministries, State of Bahrain.

Chin, K.C., Galea, P. & Goel, K.M.(1981)
Changing pattern in infant feeding practices
Health Bulletin, 39, 1, 51-57.

Churchill, C.W. & Kanawati, A. (1971)
Cultural factors in nutrition in Lebanon.
Proceeding of the 6th symposium on nutrition and health in the Near-East.
American University of Beruit, 282-288.

Collins, T.R., Leeper, J.D., Milo, T. & Demellier, S. (1984)
Perceptions and knowledge of breast-feeding among WIC and non WIC pregnant women in Alabama.
The Alabama Journal of Medical Science, 21, 2, 145-148.

Connolly, J.A., MacDonald, D. & Cullen, J.H. (1981)
Breast-feeding practices and factors related to choice of feeding method.
Irish Medical Journal, 74, 6, 166-168.

Counsilman, J.J., Mackay, E.V. & Copeland, R.M. (1983)
Bivariate analysis of attitudes towards breast-feeding.
Australian and New Zealand Journal of Obestetrics and Gynaecology, 23, 4, 208-215.

Crummette, B.D. & Munton, M.T. (1980)
Mother's decision about infant nutrition.
Pediatric Nursing, 6, 6, 16-19.

Cunningham, A.S. (1979)
Morbidity in breast-fed and artificially fed infants.
Journal of Pediatrics, 95 (5pt 1), 685-689.

Cusson, R.M. (1985)
Attitude towards breast-feeding among female high school students.
Pediatric Nursing, 11, 3, 189-191.

Cutting, W.A.M. & Ludlam, M. (1984)
Making the best of breast-feeding.
Family Practice, 1, 2, 69-78.

Dagan, R. & Pridan, H. (1982)
Relationship of breast-feeding versus bottle-feeding with emergency room visit and hospitalization for infectious diseases.
European Journal of Pediatrics, 139, 3, 192-194.

Davies, D.F. (1971)
Milk protein and other food antigen in atheroma and coronary heart disease.
American Heart Journal, 81, 289-291.

Department of Health and Social Security (1974)
Present day Practice in infant feeding.
DHHS report on health and social subjects, 9, London: HMSO.

Department of Health and Social Security (1980)
Artificial feeding for young infants.
DHHS report on health and social subjects, 18, London: HMSO.

Department of Health and Social Security (1980 a)
Present day Practice in infant feeding.
DHHS report on health and social subjects, 20, HMSO.

Dow, D.A. (1984)
The Rottenrow: The history of the Glasgow Royal Maternity Hospital 1834-1984.
England: Casterton Hall. Parthenon press ltd.

Duncan, B., Schifman, R.B., Corrigan, J.J. & Schaefer, C. (1985)
Iron and exclusively breast-fed infant from birth to 6 months.
Journal of Pediatric Gastroenterology and Nutrition, 4, 3, 421-425.

Duncan, B., Schaefer, C., Bibley, B. & Fonseca, N. (1984)
Reduced growth velocity in exclusively breast-fed infants.
American Journal of Disease of Children, 138, 309-313.

Dusdieker, L.B., Booth, B.M., Seals, B.F. & Ekwo, E.E. (1985)
Investigation of a model for the initiation of breast-feeding in primigravid women.
Social Science and Medicine, 20, 7, 696-703.

Ebrahim, G.J. (1980)
Cross cultural aspects of pregnancy and breast-feeding.
Proceedings of the Nutrition Society, 39, 13-15.

Editorial (1980)
Code of marketing.
Lancet, 1, 1239.

Ekwo, E.E., Dusdieker, L.B. & Booth, B.M. (1983)
Factor influencing initiation of breast-feeding.
American Journal of Disease of Children, 137, 375-377.

El-Hawary, M., Soliman, A., Nosseir, S. & Kholief, T. (1981)
Biochemical studies on the effect of breast and artificial feeding in newborn Egyptian infants.
Z. Ernaharungowiss, 20, 4, 283-290.

Ellis, D.J. (1981)
Breast-feeding: Cultivating conducive attitude.
Canadian Journal of Public Health, 72, 319-322.

Ellis, D.J. & Hewat, R.J. (1984)
Do we support breast-feeding mothers.
Midwives-Chronical & Nursing Notes, 97, 1153, 45-47.

Ellis, D.J. & Hewat, R.J. (1984 a)
Factors related to breast-feeding duration.
Canadian Family Physician, 30, 1479, 1581-1584.

Entwisle, D.R., Doering, S.G. & Reilly, T.W. (1982)
Sociopsychological determinants of women's breast-feeding behaviour: A replication and extension.
American Orthopsychiatric Association Inc, 52, 2, 244-261.

Fergusson, D.M., Horwood, L.J., Shannon, F.T. & Taylor, B. (1981)
Breast-feeding, gastrointestinal and lower respiratory illness in the first two years.
Australian Paediatric Journal, 17, 3, 186-190.

Fieldsteel, A.H. (1974)
Nonspecific antiviral substances in human milk active against arbovirus and murine leukaemia virus.
Cancer Research, 34, 712-715.

Fishbein, M. (1980)
A theory of reasoned action.
In M.M. page (ed), Nebraska Symposium on Motivation, 1979. Lincoln, Nb: University of Nebraska Press.

Fisher, C. (1985)
How did we go wrong with breast-feeding.
Midwifery, 1, 48-51.

Fisher, P.J. (1983)
Breast or bottle: A personal choice.
Pediatrics, 72, 3, 434-436.

Flint, C. (1984)
Midwives and breast-feeding.
Nursing Times, April, 30-31.

Forsyth, D. (1911)
History of infant feeding from Elizabethan times.
Proceedings of the Royal Society of Medicine, IV, part I, 110-141.

Garrett, N.R. & Ada, V. (1982)
Infant feeding beliefs and practices: a study of Cameroonian health care personnel.
Journal of Tropical Pediatric, 28, 209-215.

Gerrard, J.W. (1975)
Breast milk a neglect asset.
Canadian Medical Association Journal, 112, 1281-1282.

Goldman, A.S. & Smith, C.W. (1973)
Host resistance factors in human milk.
Journal of Pediatrics, 82, 1082-1090.

Greater Glasgow Health Board (1981)
Census 1981. Postcode sector maps GGHB areas.
GGHB, Information Service Unite.

Greater Glasgow Health Board (1984)
Maternity and child health statistics 1984.
GGHB, Information Service Unit.

Greater Glasgow Health Board (1985)
Child health report - 1983 births.
GGHB, Health visitors, March 1985.

Greenberg, M., Rosenberg, I. & Linda, J. (1973)
First mothers rooming in with their newborns its impact upon the mother.
American Journal of Orthopsychiatry, 43(5), 783-788.

Groughs, W. (1984)
The early parent child relationship.
Tijdschrift Voor Kindergenteeskunde (Amsterdam), 52, 2, 39-49.

Gullberg, R. (1974)
Possible influences of Vitamin B12 binding-protein in milk on the intestinal flora in breast-fed infants.
Scandinavian Journal of Gastroenterology, 9, 287-292.

Hall, B. (1975)
Changing composition of human milk and early development of an appetite control.
Lancet, 1, 7910, 779-781

Hally, M.R., Bond, J., Crawley, J., Gergson, B., Philips, P. & Russell, I. (1984)
Factors influencing the feeding of first born infants.
Acta Paediatric Scandinavica, 73, 33-39.

Halper, S.R. (1982)
Breast-feeding vs soya beans.
Annals of Allergy, 48, 4, 246-247.

Hanson, L.A. & Winberg, J. (1972)
Breast milk and defence against infection in the newborn.
Archives of Disease in Childhood, 47, 845-848.

Harfouche, J.K. (1982) In Breast-feeding patterns: A review of studies in the Eastern Mediteranean region, ch. 1, pp 3-50. WHO/EMRO Technical Publication no. 4. WHO Regional Office for Eastern Mediteranean.

Hartge, R. (1976)
The history of breast-feeding.
Fortschritte Der Medizin, 94, 27, 1435-1438.

Hassouna, W.A. (1975)
Beliefs, practices and services affecting the survival, growth and development of young Egyptian children. A comparative study in 2 Egyptian governments. Part 1- The institute of National Planning U.A.R., Memo no. 1115, Salah Salem St., Naser city.

Helsing, E. (1984)
Feeding practices in Europe, beliefs and motivations and possiblities for change.
Journal of Tropical Pediatrics, 30, 5, 244-252.

Hendrickse, R.G. (1983)
Some thoughts about infant feeding.
Annals of Tropical Paediatrics, 3, 4, 163-168.

Her Majesty's Stationery Office (1985)
Annual report.
Registrar General Scotland, HMSO.

Hewat, R.J. & Ellis, D.J. (1986)
Similarities and differences between women who breast-feed for short and long duration.
Midwifery, 2, 37-43.

Hewat, R. & Robert, J. (1985)
More effective education for breast-feeding women.
The Canadian Nurse, Jan., 38-40.

Hitchcock, N. E. (1985)
The growth of breast-fed and artificially-fed infants from birth to twelve months.
Acta Paediatric Scandinavica, 74, 240-245.

Hoefer, C. & Hardy, M.C. (1929)
Later development of breast-fed and artificially-fed infants comparison of physical and mental growth.
Journal of the American Medical Association, 92, 615-619.

Holy Kuran.

Holt, G.M. & Wolkind, S.N. (1983)
Early abandonment of breast-feeding, causes and effects.
Child: Care, Health and Development, 9 , 439-455.

Houston, M.J. (1981)
Breast-feeding, success or failure.
Journal of Advanced Nursing, 6, 6, 447-454.

Houston, M.J. & Howie, P.W. (1981)
Home support for the breast-feeding mothers.
Midwife, Health Visitor and Community Nurse,17, 9, 378-382.

Howie, P.W., Mcneilly, A.S. & Houston, M.J. (1981)
Effect of suplementary food on suckling patterns and ovarian activity during lactation.
British Medical Journal, 283, 757-759.

Hutchinges, N.W. (1958)
4000 years of infant feeding.
Chemist and Druggist, 169, 714-718.

ICM speaks out on breast-feeding (1985).
Midwifery, 1, 47.

Jelliffe, D.B. (1975)
Unique properties of human milk (Remarks on some recent developments).
Journal of Reproductive Medicine, 14, 4, 133-137.

Jelliffe, D.B. & Jelliffe, E.F.P. (1971)
The uniqueness of human milk.
West Indian Medical Journal, 20, 190-195.

Jelliffe, D.B. & Jelliffe, E.F.P. (1974)
Doulas confidence and the science of lactation.
The Journal of Paediatrics, 84, 3, 462-464.

Jelliffe, D.B. & Jelliffe, E.F.P. (1976)
Cultural interaction and child nutrition.
Basic Life Science, 7, 263-273.

Jelliffe, D.B. & Jelliffe, E.F.P. (1977)
Current concepts in nutrition "Breast is best". Modern meaning.
New England Journal of Medicine, 297, 17, 912-915.

Jelliffe, D.B. & Jelliffe, E.F.P. (1983)
Recent scientific knowledge concerning breast-feeding.
Revue Epidemiologie De Sante Publique (Paris), 31, 4, 367-373.

Kajossari, M. & Saarinen, U.M. (1983)
Prophylaxis of atopic disease by six months total solid elimination.
Acta Paediatric Scandinavica, 72, 411-414.

Karrar, Z.A. & Abdulla, M.A. (1981)

Gasteroentritis among children in Riyadh: a prospective analysis of 254 hospital admissions.

Annals of Tropical Paediatrics, 1, 2, 119-122.

Kelly, M. (1983)

Will mothers breast-feed longer if health visitors give them more support.

Health Visitor, 56, 407-408.

Khuri, F.I. (1980)

Tribe and state in Bahrain. The transformation of social and political authority in an Arab state.

The University of Chicago press / Chicago and London.

Kuhr, M. & Paneth, N. (1982)

Feeding practice and early neonatal Jaundice.

Journal of Pediatric Gastroenterology and Nutrition, 1, 4, 485-488.

Kumar, V., Sharma, S., Khanna, P. & Vanaja, K. (1981)

Breast vs bottle-feeding - impact on growth in urban infants.

Indian Journal of Pediatrics, 48, 392, 271-272.

Ladas, A.K. (1970)

How to help mothers breast-feed.

Clinical Pediatrics (Philadelphia), 9, 12, 702-705.

Lahiff, M. (1975)

Infant feeding and health education.

Midwife Health Visit, 11, 1, 12-17.

Lakdawala, D.R. & Widdowson, E.M. (1977)

Vitamin D in human milk.

Lancet, 1, 167-168.

La Leche League Leaflets

Finding out about breast-feeding.

La Leche League Publication, London.

Leeper, J.D., Milo, T. & Collins, T.R. (1983)
Infant feeding and maternal attitudes among mothers of low income.
Psychological Reports, 53, 259-265.

Lozoff, B. & Brittenam, G. (1979)
Infant care; cache or carry.
The Journal of Pediatrics, 95, 3, 478-483.

Lyon, M.L., Chiver, G., White, D.G. & Woollett, A. (1981)
Current maternal attitudes to infant feeding methods.
Child: Care, Health and Development, 7, 145-151.

Mackenzie, M. (1985)
The anthropology of others and ourselves related to weaning.
The American Journal of Clinical Nutrition, 41, 497-501.

Manoff, R.K. & Cooke, T.M. (1980)
Whose milk shall we market.
Journal of Tropical Pediatrics, 26, 2, II-IV.

Martin, J. (1975)
Infant feeding.
Attitude and practice in England and Wales.
Office of Population Censuses and Surveys, Social Survey Division, HMSO, London, 1975.

Martin, J. & monk, J. (1980)
Infant feeding 1980.
A survey carried out on behalf of the Department of Health and Social Security and Scottish Home and Health Department.
Office of Population Censuses and Surveys, Social Survey Division, HMSO, London.

Masson, P.L. & Heremans, J.F. (1971)
Lactoferrin in milk from different species.
Comparative Bicohemistry and Physiology. B:Comparative Biochemistry, 39B, 119.

Mathur, Y.C. (1975)

Feeding Habits and beliefs of practical significance in villages.

Indian Pediatric, 12, 1, 70-71.

Mavis, G. (1976)

The new mother's view of herself. Breast-feeding and the Mothers.

A Ciba Foundation Symposium, 1976.

McCleary, G.F. (1904)

The infant's milk depot: its history and function.

Journal of Hygiene, IV, 329-368.

McIntosh, J. (1985)

Barriers to breast-feeding: choice of feeding method in a sample of working class primiparae.

Midwifery, 1, 213-224.

McIntosh, J. (1986)

Weaning practices in a sample of working class primiparae.

Childcare, Health and Development, 12, 215-226.

McMillan, J.A., Landaw, S.A. & Oski, F.A. (1976)

Iron sufficiency in breast-fed infant and the availability of iron from human milk.

Pediatrics, 58, 686-691.

Menkes, J.H. (1977)

Early feeding history of children with learning disorders.

Developmental Medicine and Child Neurology, 19, 169-171.

Meyer, H.F. (1958)

Breast-feeding in U.S.A.: Extent and possible trend.

Pediatrics, 62, 4, 591-601.

Ministry of Health (1985)

Annual report,1985.

Ministry of Health, Bahrain.

Ministry of Labour and Social Affairs (1984)
Weaning and feeding habits in Bahrain, 1984.
Nutritional Education Programm, Ministry of Labour, Bahrain.

Musaigar, A.O. (1983)
The promotion of breast-feeding in developing countries: Experience in Bahrain.
Bulletin International Pediatric Association, 5, 2, 67-74.

Newton, N. & Newton, M. (1967)
Psychological aspects of lactation.
The New England Journal of Medicine, 272, 22, 1179-1187.

Newton, N. & Newton, M. (1950)
Relationship of the ability to breast-feed and maternal attitude towards breast-feeding.
Pediatrics, 5, 869-875.

Office of population censuses and surveys (1970)
Classification of occupation (1970)
Office of population censuses and surveys, HMSO.

Office of population censuses and surveys (1985)
Cigarette smoking: 1972 to 1984.
Office of Population Censuses and Survey Monitor (GHS/2).

Palmer, S.r., Avery, A. & Taylor, R. (1979)
The influence of obstetric procedures and social and cultural factors on breast-feeding rates at discharge from hospital.
Journal of Epidemiology and Community Health, 33, 248-252.

Parnell, C.P. (1976)
Mothers' attitude to prepacked feeds.
Midwives Chronical and Nursing Notes, 89, 1066, 267-268.

Pascoe, J.M. & Berger, A. (1985)
Attitude of high school girls in Israel and USA towards breast-feeding.
Journal of Adolescent Health Care, 6, 1, 28-30.

Pediatric Society (1977)

Breast-feeding: A statement of infant nutrition subcommittee of the paediatric society of New Zealand.

New Zealand Medical Journal, 86, 593, 144-147.

Philips, V. (1978)

Children in early Victorian England: infant feeding in literature and society 1837-1857.

Tropical Pediatrics and Enviromental Child Health, August, 158-166.

Piu, M., Spano, B., Corcbia, C., Alagna, A., Moro, M., Dore, A., Gallisai, D., Milia, S. & Piras, G. (1984)

Incidence and duration of breast-feeding in a group primiparae after physiological deliveries.

Clinical and Experimental Obstetrics and Gynecology, 11, 1-2, 55-59.

Prince, J. (1976)

Infant feeding through the ages.

Midwives Chronicle, 89, 283-285.

Princeton, J.C. (1986)

Incorporating a deliberative nursing care approach with breast-feeding mothers.

Health Care for Women International, 7, 277-293.

Ragheb, S. & Smith, W. (1979)

Beliefs and customs regarding breast-feeding among Egyptian women in Alexandria.

International Journal of Nursing Studies, 16, 73-83.

Richards, M. (1975)

Early separation. In child alive: New insight into the development of young children.

ed. Lewin, R. London: Temple Smith.

Roberts, A.E. (1975)

Feeding and mortality in the early months of life: changes in medical opinion and popular feeding practices 1850-1900.

A Ph.D. Thesis, Hull University, preface & chapter 5.

Robert, S., John, H., Marshall, K. & Juan, J. (1976)
The effect of early mother infant contact on breast-feeding infection and growth.
Ciba Foundation Symposium, 179-193.

Rohde, J.E. (1982)
Mother milk and Indonesian economy: A major national resource.
Journal of Tropical Pediatrics, 28, 4, 166-174.

Rumondang, Suharyono, Aswitha, B., Mugijo, K., Utomo & Adnan, S.(1979)
Breast milk and bottle milk in relation with gastroentritis.
Paediatrica Indonesiana, 19 (9-10),226-230.

Ruspandji, T., Suharyono, Tumbelaka, A.B., J.W.A.F. & Halimun, E.M. (1979)
The importance of breast milk in acute neonatal enterocolitis and other enteric diseases.
Pediatrica Indonesiana, 19, 243-248.

Rutishauser, I.H., Mckay, H.M. & Wahlqvist, M. (1982)
Does Breast-feeding have nutritional advantages over bottle-feeding.
Australian Family Physician, 11, 4, 249-250, 252-253 & 255-256.

Saarinen, U.M. (1982)
Prolonged breast-feeding as prophylaxis for recurrent Otitis-media.
Act Pediatric Scandinavica, 71, 567-571.

Sabin, A.B. & Fieldsteel, A.H. (1962)
Anti Poliomyelitic activity of human and bovine colostrum and milk.
Pediatrics, 29, 105-115.

Sulmaniya Medical Centre (1985)
North block statistics 1985.
Ministry of Health. Bahrain.

Schaefer, O. (1971)
Otitis-media and bottle-feeding.
Canadian Journal of Public Health, 62, 478-489.

Shand, N. (1981)
The reciprocal impact of breast-feeding and culture form on maternal behaviour and infant development.
Journal of Biosocial Science, 13, 1-17.

Shand, N. & Kosawa, Y. (1984)
Breast-feeding as cultural or personal decision.
Journal of Biosocial Science, 16, 1, 65-80.

Sharma, D.B. & Lahori, U.C. (1977)
Some aspects of infant rearing practice and beliefs.
Indian Pediatrics, 14, 7, 511-518.

Sidu, L.S., Grewal, B. & Bahatnagar, D.P. (1981)
A study of physical growth in breast-fed and bottle-fed male infants.
Indian Journal of Pediatrics, 48, 390, 75-79.

Silverton, L. (1985)
Breast-feeding yesterday and today.
Midwifery, 1, 162-166.

Stuart, A.M. (1982)
Everytime she woke up my heart sank.
Nursing Mirror, 155, 12, 64-65.

Suharyono, Hariarti, Yusniar, Affandi, Syamsuwidayat, Tumbelaka & W.A.F.J. (1979)
Breast-feeding is best.
Paediatrica Indonesiana, 19, 243-248.

Switzky, L.T., Vietze, P. & Switzky, H.N (1979)
Attitudinal and demographic predictors of breast-feeding and bottle-feeding behavior by mothers of six weeks old infants.
Psychological Reports, 45, 3-14.

Taylor, B. (1977)
Breast versus bottle-feeding.
New Zealand Medical Journal, 85, 584, 235-238.

Taylor, B. & Wadsworth, J. (1984)
Breast-feeding and child development at 5 years.
Developmental Medicine and Child Neurology, 26, 1, 73-80.

Taylor, B., Wadsworth, J., Butter, N. & Golding, J. (1982)
Breast-feeding: Bronchitis and admission for lower respiratory illness and gastroenteritis during the first 5 months.
Lancet, 29, 1, 8283, 1227-1229.

Temchareon, P., Temchareon, P. & Sirivunaboot, P. (1980)
Relationship between mother's attitudes towards breast-feeding and types of feeding practices.
Journal of the Medical Association of Thailand, 63, 10,548-552.

Temchareon, P., Temchareon, P. & Sirivunaboot, P. (1978)
Mothers attitude towards breast-feeding.
Journal of the Medical Association of Thailand, 62, 2, 70-73.

Thornton, L. (1984)
Breast-feeding in South Africa.
Curationis, 7, 3, 33-41.

Tylden, E. (1976)
Psychological and social considerations in breast-feeding.
Journal of Human Nutrition, 30, 4, 239-244.

Victora, C.G., Vaughan, J.P., Martines, J.C. & Barcelos, L.B.(1984)
Is prolonged breast-feeding associated with malnutrition ?
The American Journal of Clinical Nutrition, 39, 307-314.

Walker, A.R.P. (1978)
Infant feeding practices in South Africa.
South African Medical Journal, 54, 20, 820-822.

Wenderlein, J.M. (1975)
Breast-feeding and relationship between mother and infant.
Geburtshilfe - Frauuenheilkd, 35, 16, 779-782.

Williams, H.E., Howard, E. & Carmichall, A. (1983)

Nutrition in the first year of life in a multi-ethnic poor socioeconomic municipality in Melbourne.

Australian Pediatric Journal, 19, 73-77.

William, P.S., Sandra, G.W. & Sally, P.M. (1976)

Pituitary-adrenal responsiveness of rat mother to noxious stimuli and stimuli produced by Pups: Breast-feeding and the mother.

A Ciba Foundation Symposium.

Winikoff, B., Laukaran, V., Myers, D. & Stone, R. (1986)

Dynamics of infant feeding: Mothers, Professionals and institutional context in a large urban hospital.

Pediatrics, 77, 3, 357-365.

Winkelstein, M.L. (1984)

Overfeeding in infancy. The early introduction of solids.

Pediatric Nursing, 10, 3, 205-208.

World Health Organization (1979)

Joint WHO/UNICEF meeting on infant and young child feeding: Statement and recommendation.

WHO, Geneva.

World Health Organization (1981)

Contemporary patterns of breast-feeding. Report on the WHO collaborative study on Breast-feeding.

WHO, Geneva.

World Health Organization (1981 a)

International code of marketing of Breast milk substitutes.

WHO, 34 World health assembly.

World Health Organization (1982)

The prevalence and duration of breast-feeding: A critical review of available information.

WHO Quarterly, 2.

Wright, H.J., Walker, P.C. & Webster, J. (1983)
The prediction of choice in infant feeding. A study of primipara.
Journal of the Royal College of General Practitioners, 33, 493-497.

Yoshioka, H., Iseki, K. & Fujita, K. (1983)
Development and differences of intestinal flora in the neonatal period in breast-fed and bottle-fed infants.
Pediatrics, 72, 3, 317-320.

Young, H.B., Buckley, A.E., Hamza, B. & Mandarano, C. (1982)
Milk and lactation. Some social and developmental correlates among 1000 infants.
Pediatrics, 69, 2, 169-175.

Zurayk, H.C. & Shedid, H.E. (1981)
The trends away from breast-feeding in a developing country.
Journal Trop Pediatrics, 27, 5, 237-244.

ATTITUDE AND KNOWLEDGE OF PEOPLE TO INFANT FEEDING

(Questionnaire for Nulliparous Girls)

Card No. [2]

1. SERIAL NUMBER [ ] [ ] [ ] 1-3

2. DATE / /

3. AGE (Years) ____ [ ] [ ] 4-5

4. LEVEL OF EDUCATION

1. Primary School
2. Secondary School
3. College/University/Other Further Education
4. Other - Specify

[ ] 6

5. ARE YOU WORKING?
1 = Yes; 2 = No [ ] 7

6. ARE YOU LIVING WITH YOUR PARENTS?
1 = Yes; 2 = No [ ] 8

7. FATHER'S OCCUPATION
Specify _____
NOT APPLICABLE = 99 [ ] [ ] 9-10

8. MOTHER'S OCCUPATION
Specify _____
NOT APPLICABLE = 99 [ ] [ ] 11-12

9. HOW MANY BROTHERS AND SISTERS DO YOU HAVE? _____
NO BROTHERS OR SISTERS = 77 [ ] [ ] 13-14

10. ARE ANY OF YOUR BROTHERS OR SISTERS MARRIED?
1 = Yes; 2 = No; 8 = Don't know [ ] 15

11. IF YES, DO THEY HAVE ANY CHILDREN?
1 = Yes; 2 = No [ ] 16

12. IF YES, HOW MANY OF YOUR NEPHEWS/NIECES HAVE BEEN

Breast fed _____ [ ] [ ] 17-18

Bottle Fed _____ [ ] [ ] 19-20

Mixed Fed (Breast and Bottle) _____ [ ] [ ] 21-22

Dont' know = 88; Not applicable = 99

13. HOW OFTEN HAVE YOU SEEN A PARENT FEEDING A BABY?
1 = Frequently; 2 = Not often; 3 = Never [ ] 23

14. HAVE YOU EVER TAKEN RESPONSIBILITY FOR FEEDING OR LOOKING AFTER A BABY
1 = Yes; 2 = No; 8 = Dont' know [ ] 24

15. ARE ANY OF YOUR RELATIVES BREAST-FEEDING A BABY?
1 = Yes; 2 = No; 8 = Don't know [ ] 25

16. IF YES, HOW OFTEN HAVE YOU SEEN THEM DOING SO?
1 = Frequently
2 = Not often
3 = Never
9 = Not applicable [ ] 26

17. ARE ANY OF YOUR NEIGHBOURS BREAST FEEDING A BABY?
1 = Yes; 2 = No; 8 =Don't know [ ] 27

18. IF YES, HAVE YOU SEEN THEM DOING SO?
1 = Yes
2 = No
8 = Don't know
9 = Not applicable [ ] 28

19. WHAT IS THE ATTITUDE OF YOUR PARENTS TO BREAST-FEEDING?
1 = Encouraging
2 = Discouraging
3 = Neutral
4 = They do not know
8 = Dont' know [ ] 29

20. WHAT KIND OF FEEDING WERE YOU GIVEN WHEN YOU WERE A BABY?
1 = Breast
2 = Bottle
3 = Mixed (Breast and Bottle)
4 = Other (Specify) _____
8 = Don't know [ ] 30

21. DO YOU LIKE BABIES?
1 = Yes; 2 = No; 8 =Don't know [ ] 31

22. DO YOU WISH TO HAVE CHILDREN IN THE FUTURE?
1 = Yes; 2 = No; 8 = Don't know [ ] 32

23. IF YES, HOW DO YOU INTEND TO FEED THEM?
1 = Breast
2 = Bottle
3 = Mixed (Breast and Bottle)
4 = Other (Specify) _____
8 = Don't know
9 = Not applicable [ ] 33

24. HAVE YOU BEEN GIVEN LESSONS IN SCHOOL ABOUT INFANT FEEDING?
1 = Yes; 2 = No; 8 = Don't know [ ] 34

25. HAVE YOU READ, HEARD OR SEEN ANYTHING ABOUT INFANT FEEDING?
1 = Yes; 2 = No; 8 = Don't know [ ] 35

26. WHAT DO YOU THINK OF BREAST-FEEDING?
1 = Good
2 = Bad
3 = Other (Specify) _____
8 = Don't know [ ] 36

27. IF YOU THINK BREAST-FEEDING IS GOOD, CAN YOU INDICATE WHY?
(You may tick more than one of the following responses.)

Provides immunity	[ ]	37
Has nutritional value	[ ]	38
It is natural	[ ]	39
It is cheaper	[ ]	40
It is more convenient	[ ]	41
It gives the baby love and closeness	[ ]	42
Baby will grow better	[ ]	43
Mixture of above	[ ]	44
Other - Specify _____	[ ]	45

28. IF YOU THINK BREAST FEEDING IS BAD, CAN YOU INDICATE WHY?
(You may tick more than one of the following responses.)

Feeling like an animal	[ ]	46
Limitation of mother's freedom	[ ]	47
It is antisocial	[ ]	48
Spoils the breast shape	[ ]	49
Mixture of above	[ ]	50
Other - Specify _____	[ ]	51

29. IF YOU ARE GOING TO BREAST FEED YOUR BABY CAN YOU SAY FOR HOW LONG YOU WILL DO SO _____ MONTHS
88 = Don't know [ ] [ ] 52-53

30. WHERE WOULD YOU SEEK INFORMATION ABOUT INFANT FEEDING?
You may tick more than one of the following responses

Doctor (G.P.)	[ ]	54
Nurse	[ ]	55
Welfare Clinic	[ ]	56
Parents	[ ]	57
Friends	[ ]	58
Relative	[ ]	59
Siblings	[ ]	60
Books	[ ]	61
Other - Specify _____	[ ]	62

33. WHEN DO YOU THINK THE BABY SHOULD START TO HAVE SOLID FEEDING?
When it is _____ months of age
88 =Don't know [ ] [ ] 63-64

34. AND WHAT KIND OF SOLID FOOD SHOULD BE GIVEN TO THE BABY?

Specify _____
8 = Don't know [ ] 65

35. WHY IS SOLID FOOD NOT USUALLY GIVEN TO A BABY AT A MUCH YOUNGER AGE?

_____ [ ] [ ] 66-67
88 = Don't know

36. WHY SHOULDN'T SOLID FOOD BE GIVEN AT A FAR LATER AGE THAN LATER AGE THAN WHAT YOU HAVE STATED?

_____ [ ] [ ] 68-69
88 = Don't know

APPENDIX 1

THE END

THANK YOU FOR COMPLETING THE QUESTIONNAIRE. ALL THE INFORMATION WILL BE KEPT CONFIDENTIAL. YOUR COMMENTS ARE HIGHLY APPRECIATED.

Dr. J. MacKAY
Dr. W. H. HUNTER
Dr D. L. BLACKWOOD
Dr. J. THOMSON
Dr W. M. DUNWOODIE

GOVAN HEALTH CENTRE
295 LANGLANDS ROAD
GLASGOW G51 4BJ
Telephone: 041-440 1212

Dear

Dr. Faisal Alnasir, who worked in our practice last year, is now working for a Ph.D in the University Department of General Practice where I also have an attachment. The main thrust of his thesis is a comparative study on the attitudes to breast feeding of adolescent girls and young women in the West of Scotland and a similar group in his own country of Bahrain.

I would be very grateful if you could complete the enclosed questionnaire for Dr. Alnasir and return it to him.

You have my assurance that the information thus collected will not only be confidential but also anonymous.

Yours sincerely,

J. MacKAY.

APPENDIX 2

CARD NO. ☐ III

1. SERIAL NO. ☐☐☐ 1-3
2. HOSPITAL NO. _____
3. DATE OF INTERVIEW / /
4. PATIENT'S NAME _____
5. ADDRESS _____
_____
6. TELEPHONE NO. _____
7. CONSULTANT NAME _____
8. NAME OF G.P. _____
9. G.P. ADDRESS _____
_____
10. HEALTH CENTRE _____ Tel No. _____
11. PATIENT LEVEL OF EDUCATION
Specify _____ ☐ 4
12. DATE OF LAST MENSTRUAL PERIOD / /
13. DURATION OF PREGNANCY (In Weeks) ☐☐ 5-6
14. EXPECTED DATE OF DELIVERY _____
15. PATIENT'S AGE ☐☐ 7-8
16. DO YOU SMOKE?
1 = Yes; 2 = No ☐ 9
17. MARITAL STATUS 2.
1. Married
2. Single
3. Separated
4. Divorced
5. Others _____ ☐ 10
18. DURATION OF MARRIAGE (In Years) ☐☐ 11-12
99 = Not Applicable
19. LIVING WITH :
1. Husband
2. Partner
3. Parents
4. Friend
5. Single
6. Other (Specify) _____ ☐ 13
20. OCCUPATION (Specify) _____ ☐☐ 14-15
21. HUSBAND'S OCCUPATION (SPECIFY) _____ ☐☐ 16-17
99 = Not Applicable
FATHER'S OCCUPATION (Specify) _____ ☐☐ 18-19
99 = Not Applicable
NUMBER OF SIBLINGS 99 = No siblings ☐☐ 20-21
ARE ANY OF YOUR SIBLINGS MARRIED?
1 = Yes; 2 = No, 9 = Not applicable ☐ 22
IF THEY HAVE CHILDREN, WHAT TYPE OF FEEDING WAS GIVEN TO THE MOST RECENT CHILD?
1. Breast
2. Bottle
3. Both
4. Other (Specify) _____
8. Don't know
9. Not Applicable ☐ 23
WAS THIS PREGNANCY PLANNED?
1 = Yes; 2 = No; 8 = Don't know ☐ 24
HOW MANY CHILDREN DO YOU INTEND TO HAVE?
8 = Don't know
9 = Not Applicable ☐ 25
HAVE YOU FOUND OUT ANY INFORMATION ABOUT INFANT FEEDING?
1 = Yes; 2 = No ☐ 26

Nurse
Clinic
Parents
Friends
Neighbour
OTHERS (Specify) _____

30. WHAT WOULD YOUR PARTNER/HUSBAND'S PREFERENCE BE FOR INFANT FEEDING?
1. Breast
2. Bottle
3. Both
4. Other (Specify) _____
8. Don't know

31. WHAT IS THE ATTITUDE OF YOUR PARENTS TOWARDS INFANT FEEDING?
1. Encouraging breast
2. Discouraging breast
3. Encouraging bottle
4. Discouraging bottle
5. Encouraging both
6. Other (Specify) _____
8. Don't know
9. Not applicable

32a. HOW STRONGLY DO EACH OF THE FOLLOWING CLOSE CONTACTS BELIEVE THAT YOU SHOULD BREAST FEED?
1. Strongly encourage; 2. Encourage; 3. Neutral;
4. Discourage; 5. Strongly discourage;
8. Don't know; 9. Not applicable
Husband/Partner
Closest female friend
Mother
Medical advisers

32b HOW STRONGLY DO EACH OF THE FOLLOWING CLOSE CONTACTS BELIEVE THAT YOU SHOULD BOTTLE FEED?
1. Strongly encourage; 2. Encourage; 3. Neutral;
4. Discourage; 5. Strongly discourage;
8. Don't know; 9. Not applicable
Husband/Partner
Closest female friend
Mother
Medical advisers

33. HOW DO YOU INTEND TO FEED YOUR BABY?
1. Breast
2. Bottle
3. Both
4. Other (Specify) _____
8. Don't know

34a. IF BREAST, THEN WHY?
88 = Don't know; 99 = Not Applicable
Specify _____

34b. HOW OFTEN WILL YOUR BABY NEED TO BE FED EACH DAY?
77 = As required by baby; 88 = Don't know;
99 = Not applicable

34c. HOW MANY MONTHS WOULD YOU BREAST FEED?
88 = Don't know; 99 = Not applicable

34d. DO YOU HAVE TO PREPARE YOUR BREASTS FOR FEEDING DURING PREGNANCY?
1 = Yes; 2 = No; 8 = Don't know; 9 = Not applicable

34e. WHAT WOULD YOU DO IF YOU THOUGHT THAT YOU DID NOT HAVE ENOUGH MILK?
1. Consult your doctor
2. Ask advice from your parents/relatives/friends
3. Start bottle feeding on your own decision
4. Other (Specify) _____
8. Don't know
9. Not applicable

34f. ANY SPECIAL FOOD YOU SHOULD TAKE DURING PREGNANCY?
1 = Yes (Specify) _____
2 = No
8 = Don't know
9 = Not applicable

34g. ANY SPECIAL FOOD YOU SHOULD TAKE DURING FEEDING?
1 = Yes (Specify) _____
2 = No
8 = Don't know
9 = Not applicable

34h. ANY SPECIAL FOOD YOU SHOULD AVOID DURING PREGNANCY?
1 = Yes (Specify) _____
2 = No
8 = Don't know
9 = Not applicable

341. ANY SPECIAL FOOD YOU SHOULD AVOID DURING FEEDING?

1 = Yes (Specify) _____
2 = No
8 = Don't know
9 = Not applicable

☐ 56

35a. IF BOTTLE, then why

Specify _____

88 = Don't know; 99 = Not applicable

☐☐ 57-58

35b. WOULD DRIED MILK BE SUFFICIENT FOR THE GROWTH OF YOUR BABY?

1 = Yes; 2 = No; 8 = Don't know; 9 = Not applicable

☐ 59

36. WHEN SHOULD YOU START SOLID FEEDING (In Months)

88 = Don't know

☐☐ 60-61

37. WHICH SOLID FOOD SHOULD BE STARTED FIRST?

Specify _____

8 = Don't know

☐ 62

38. WHY SHOULDN'T SOLID FOOD BE STARTED AT A MUCH EARLIER AGE?

Specify _____

88 = Don't know

☐☐ 63-64

39. WHY SHOULDN'T SOLID FOOD BE GIVEN AT A MUCH LATER AGE?

Specify _____

88 = Don't know

☐☐ 65-66

40. IN WHICH ROOM DO YOU INTEND BABY'S COT TO BE?

1. In a separate room
2. In your room, but in his own bed
3. In your room, but in your bed
8. Don't know

☐ 67

41. WHO WILL HELP YOU WITH THE BABY WHEN YOU COME HOME FROM HOSPITAL?

Specify _____

8 = Don't know

☐ 68

1. Serial No. [ ] 1 - 3

2. Hospital No. _____

Please don't write in this part

Date / /

3. Name _____

4. Address (Notify any change of address)

_____

_____

Do you smoke cigarettes

No = 1
Occasionally = 2
Regularly = 3 [ ] 4

6. Are you
Married = 1
Single = 2
Separated = 3
Divorced = 4
Widowed = 5
Others (Specify) = 6 _____ [ ] 5

Who are you at present living with?
Husband = 1
Partner = 2
Parents = 3
Friends = 4
Single = 5
Others (Specify) = 6 _____ [ ] 6

8. What is your present occupation? (Specify) _____ [ ][ ] 7 - 8

9. Was this pregnancy planned?
Yes = 1
No = 2
I don't know = 3 [ ] 9

10. How many children do you intend to have? (Specify) _____
I don't know = 1 [ ] 10

Use the following options:-
Strongly encourage = 1 encourage = 2 neutral = 3
discourage = 4 strongly discourage = 5 I don't know = 6

Husband/partner	1	2	3	4	5	6
Closest female friend	1	2	3	4	5	6
Mother	1	2	3	4	5	6
Medical advisor/s	1	2	3	4	5	6

17. How do you intend to feed your baby?
Breast = 1
Bottle = 2
Both = 3
Others = 4 (specify) _____
I don't know = 5

Please Note

If you intend to breast feed please answer questions 18 to 26. Skip question 27 and 28 then answer the rest of the questionnaire.

If you intend to bottle feed then don't answer the questions from 18 to 26, but start answering from No. 27 to the end.

If your answer to question 17 is both, don't know or others, then answer the question from No. 18 to the end of the questionnaire.

18. If you intend to breast feed give your most important reason.
Specify _____
I don't know = 1

19. How many times a day would you breast feed your baby?
Specify (times) _____
As required by baby = 1
I don't know = 2

20. For how many months would you breast feed?
Specify _____
As long as I can = 1
As long as the baby wants it = 2
Till there is no milk = 3

11. Have you found out any information about infant feeding?
Yes = 1
No = 2 [ ] 11

12. If so where did you get this information from.
If no where would you get this information?
Doctor = 1 [ ] 12
Nurse = 2 [ ] 13
Clinic = 3 [ ] 14
Parent(s) = 4 [ ] 15
Friend(s) = 5 [ ] 16
Neighbour = 6 [ ] 17
Others (Specify) = 7 _____ [ ] 18
I don't know = 8 [ ] 1.

How would your husband/partner like you to feed the baby?
Breast = 1
Bottle = 2
Both = 3
He doesn't know = 4
Other (Specify) = 5 _____ [ ] 20
I don't know = 6

4. What is your parent/s attitude towards infant feeding?
Encourage Breast feeding=1
Discourage Breast feeding=2
Encourage Bottle feeding =3
Discourage Bottle feeding=4
Encourage Both =5
Discourage Both =6
Other (Specify) =7 _____ [ ] 21
I don't know =8

5. How strongly do each of the following close contacts believe that you should Breast feed?

Use the following options:-
Strongly encourage = 1 encourage = 2 neutral = 3
discourage = 4 strongly discourage = 5 I don't know = 6

Husband/partner	1	2	3	4	5	6
Closest female friend	1	2	3	4	5	6
Mother	1	2	3	4	5	6
Medical advisor/s	1	2	3	4	5	6

21. Did you have to prepare your breast for feeding during pregnancy?
yes = 1
no = 2 [ ] 11
I don't know = 3

12. What would you do if you thought that you didn't have enough milk?
Consult my doctor = 1 [ ] 12
Ask advice from my parents/ relations/ friends = 2 [ ] 13
Start bottle feeding = 3 [ ] 14
Others (Specify) = 4 _____ [ ] 15
I don't know = 5 [ ] 16

23. Are there any special food or fluid that you should take during pregnancy in order to increase your milk later on?
Yes(Specify) = 1 _____ [ ] 17
No = 2 [ ] 18
I don't know = 3 [ ] 1.

24. Are there any special food or fluid you should take during feeding?
Yes (Specify) = 1 _____
No = 2
I don't know = 3

25. Are there any special food or fluid to be avoided during pregnancy?
Yes (Specify) = 1 _____
No = 2
I don't know = 3

26. Are there any special food or fluid to be avoided during feeding?
Yes (Specify) = 1 _____
No = 2
I don't know = 3

27. If you are going to bottle feed, then can you say why?
(Specify) _____ [ ][ ] 22 - 23
I don't know = 1 [ ] 24
[ ] 25

28. Do you think that dried milk (bottle) will be enough for the growth of your baby?
Yes = 1
No (Specify) = 2 _____
I don't know = 3

APPENDIX 4

29. When would you start to give solid foods to baby?
(Specify baby age in months)_____ 46-47
I don't know - 1

30. Which solid food would you start first?
(Specify)_____ 48
I don't know - 1

31. Why shouldn't food be started at much earlier age?
(Specify)_____ 49-50
I don't know - 1

32. Why shouldn't solid food be given at far later age than what you stated?
(Specify)_____ 51-52
I don't know - 1

33. Where will your baby sleep?
In a separate room - 1
In my room in its cot - 2
In my room with me in bed - 3
I don't know - 4
Other _____ - 5 53

34. Who will help you with your baby?
(Specify) _____ 54
I don't know - 1

35 How is your pregnancy?
Trouble free - 1 55
Troublesome(Specify) - 2 _____

THE END

THANK YOU FOR COMPLETING THE QUESTIONNAIRE.

WOULD YOU PLEASE GIVE ME YOUR COMMENTS AS TO HOW EASY YOU FOUND THIS QUESTIONNAIRE TO ANSWER.

_____

_____

_____

APPENDIX 4 CONTD.

Senior Lecturers
D. R. HANNAY, M.A., M.D., Ph.D., M.R.C.G.P., F.F.C.M., D.C.H.
T. S. MURRAY, M.D., F.R.C.G.P., F.R.C.P., D.R.C.O.G.
General Accident Lecturer)

Tutor
I. MacKAY, O.B.E., M.B., F.R.C.G.P.

Senior Research Fellow (Astra)
JOYCE M. WATSON, M.D., M.F.C.M., M.R.C.G.P., D.A., D.P.M.

WOODSIDE HEALTH CENTRE,
BARR STREET,
GLASGOW G20 7LR
TEL: 041-332 9977

Dear

You may remember that I met you at your first ante-natal visit and you kindly answered some questions to help my work of research into infant feeding.

I would be very grateful if you would kindly complete the enclosed questionnaire and send it back to me in the enclosed envelope. If you find any difficulties in completing this questionnaire, please write them on the final page.

I am most grateful to you for your help.

I will contact you again if I may when the baby is three months old.

Yours sincerely,

DR. FAISAL ALNASIR

APPENDIX 5

I. H. BARBER, M.D., F.R.C.G.P.,
D.R.C.O.G. (Norie-Miller Chair)

UNIVERSITY OF GLASGOW
DEPARTMENT OF GENERAL PRACTICE

...turers
...NNAY, M.A., M.D., Ph.D., M.R.C.G.P., F.F.C.M., D.C.H.
...RRAY, M.D., F.R.C.G.P., F.R.C.P., D.R.C.O.G.
...cident Lecturer)

...Y, O.B.E., M.B., F.R.C.G.P.

...arch Fellow (Astra)
... WATSON, M.D., M.F.C.M., M.R.C.G.P., D.A., D.P.M.

F.A/KH

WOODSIDE HEALTH CENTRE,
BARR STREET,
GLASGOW G20 7LR
TEL: 041-332 9977

Dear

I have previously sent you a questionnaire with a letter a few weeks ago. I would be very grateful if you would kindly complete it and send it to me, as your views will be quite helpful in my research.

I am enclosing another questionnaire in case you have not received the previous one.

Thank you for your help.

Kind Regards,

Yours sincerely,

DR. FAISAL ALNASIR,

APPENDIX 6

CARD NO. 7

Date / /86

1. Serial No. 1 - 3

2. Name _____

Please don't write in this part.

3. Address (Please notify any change in the coming few months)

_____

_____

_____

4. Telephone No. _____

5. Are you
Married = 1
Single = 2
Separated = 3
Divorced = 4
Widowed = 5
Others = 6
(specify) _____ 4

6. Are you living with
Husband = 1
Partner = 2
Parents = 3
Friends = 4
Single = 5
Others = 6
(specify) _____ 5

7. Are you working
Yes = 1
No = 2 6

8. If yes, who looks after your baby while you are at work.
(Specify) _____ 7

9. How old is your baby _____weeks 8 - 9
Don't know = 88

10. Baby's sex
Male = 1
Female = 2 10

11. Was the delivery
Normal = 1
Breech = 2
Caesarean = 3
Other's = 6
Don't know = 8 11

12. At birth, was baby
On time = 1
Early = 2
Late = 3
Other's = 6
Don't know = 8 12

13. How many days were you kept in hospital
_____days 13 - 14

14. How many days was baby kept in hospital
_____days 15 - 16

15. What kind of feeding was baby given while in hospital
Breast = 1
Bottle = 2
Both (breast & bottle) = 3
Others = 6
(specify) _____
Don't know = 8 17

16. Whose choice was this
Yours = 1
Doctor/ Nursing Staff = 2
Family/husband/ partner = 3
Others = 6
(specify) _____
Don't know = 8 18

17. How strongly did your husband/partner encourage/support you to breast feed
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

18. How strongly did your husband/partner encourage/support you to bottle feed
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

19. How strongly did your mother encourage/ support you to breast feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

20. How strongly did your mother encourage/ support you to bottle feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

21. How strongly did your closest female friend encourage/support you to breast feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

22. How strongly did your closest female friend encourage/support you to bottle feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

23. How strongly did your Medical Advisor (G.P., Nurse, Midwife, Health Visitor) encourage/ support you to breast feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage = 5 don't know = 8
not applicable = 9

24. How strongly did your Medical Advisor (G.P. Nurse, Midwife, Health Visitor) encourage/ support you to bottle feed.
strongly encourage = 1 encourage = 2
neutral = 3 discourage = 4
strongly discourage=5 don't know = 8
not applicable =9

PLEASE NOTE :
If you have chosen breast feeding, skip Questions 31-33
If you have chosen bottle feeding, skip Questions 25-30
If you have chosen both types of feeding, answer all Questions.

25. If you have chosen breast feeding, can you say why ?
_____
_____

26. Do you still breast feed
Yes = 1
No = 2

27. If answer to Question 26 is yes, then for how long do you intend to continue breast feeding ?
Till baby is _____months old
As long as I can = 43
As long as the baby wants it = 55
Till there is no milk = 66
Other (specify) _____
Don't know = 88

28. How often during the 24 hours do you give a breast feed ?
As required by baby = 77
Don't know = 88

If the answers to Question 26 are no, then answer the following Questions 29-30 and rest of the Questionnaire.

APPENDIX 7

Don't know = 88 — 38 - 39

30. Why did you stop breast feeding

_____

_____

Don't know = 88 — 40 - 41

31. If you were bottle feeding, why did you choose bottle feeding

_____

_____

Don't know = 88 — 42 - 43, 44 - 45, 46 - 47

32. How long do you intend to bottle feed

Till the baby is _____ months old

Other _____

Don't know = 88 — 48 - 49

33. How often during the 24 hours do you give bottle feeding

_____

Don't know = 88 — 50 - 51

34. Have you started solid feeding

Yes = 1
No = 2 — 52

35. If no, when do you intend to introduce solid food.

When baby is _____ months old — 53 - 54

36. What kind of solid food are you giving or are you going to start later

_____ — 55 - 56, 57 - 58, 59 - 60

45. Where is baby sleeping ?

In a separate room = 1
In my room in its cot = 2
In my room with me in bed = 3
Other _____
Don't know = 8

46. What was the baby's weight

At birth _____

Now _____

47. Has the baby had his first immunisation

Yes = 1
No = 2

48. If no , why _____

THANK YOU FOR COMPLETING THE QUESTIONNAIRE.

I WOULD LIKE TO WISH ALL HAPPINESS WITH YOUR BABY.

YOUR COMMENTS ARE HIGHLY APPRECIATED.

_____

_____

_____

Card

21.3.86.

37. Are you giving any other fluids

Yes = 1
No = 2 — 61

38. If yes, what kind _____ — 62 - 63

39. How is your baby

Healthy = 1
Not healthy = 2
(specify) _____ — 64

40. How often has your baby been so unwell that you have had to take it to the G.P. or ask advice from Midwife, Health Visitor or Nurse.

Frequently = 1
Occasionally = 2
Never = 3 — 65

41. Does your baby sleep well at night

Yes = 1
No = 2 — 66

42. Would you describe your baby as

Quiet and peaceful = 1
Noisy and difficult = 2
Other = 6
_____
Don't know = 8 — 67

43. Do you have any difficulties in looking after the baby.

Yes = 1
(specify) _____ — 68

No = 2

44. Who helps you with the baby ?

_____ — 69

APPENDIX 7 CONTD.

Dr J. M. BARBER, M.D., F.R.C.G.P.,
(Cl, D.R.C.O.G. (Norie-Miller Chair)

Lecturers
(URRAY, M.D., F.R.C.G.P., F.R.C.P., D.R.C.O.G.
(Assistant Lecturer)
OOD, M.D., M.R.C.G.P.

CAY, O.B.E., M.B., F.R.C.G.P.

UNIVERSITY OF GLASGOW
DEPARTMENT OF GENERAL PRACTICE

WOODSIDE HEALTH CENTRE,
BARR STREET,
GLASGOW G20 7LR
TEL: 041-332 9977

FA/MM

Dear

May I congratulate you on being a mother and wish you all happiness and success with your baby.

I would like to thank you for your co-operation in my research and would be much obliged if you could kindly complete the enclosed questionnaire and send back in the enclosed stamped envelope.

I will if I may send another questionnaire when your baby is six months old. Please inform me if there is any change in your address during the coming few months.

Thank you.

Yours sincerely,

FAISAL ALNASIR, MRCGP

encl.

APPENDIX 8

Card No. 9-1

Date / /

Serial NO. [ ][ ][ ] 1-3

1. NAME _____

2. WHEN WAS YOUR DELIVERY / / [ ][ ][ ][ ] 4-7

3. DO YOU WORK AT PRESENT

No		= 1
Yes	Full-time	= 2
	Part-time	= 3

[ ] 8

4. IF YES, WHAT WAS YOUR BABY'S AGE WHEN YOU RESUMED WORK (Age in Weeks) _____

Don't know = 88 [ ][ ] 9-10

5. AND WHO LOOKS AFTER THE BABY WHILE YOU ARE AT WORK

Husband/partner	= 1
Family	= 2
Friends/neighbours/maid	= 3
Other (Specify) _____	= 4
Not applicable	= 9

[ ] 11

6. ARE YOU STILL FEEDING THE BABY IN THE SAME WAY AS YOU BEGAN

No		= 1
Yes (What type)	Breast	= 2
	Bottle	= 3
	Breast & Bottle	= 4

[ ] 12

7. IF NO, WHAT DID YOU CHANGE TO _____ [ ] 13

8. AND WHEN DID YOU CHANGE

_____ (Baby's age in weeks)

Don't know = 88
Not applicable = 99

[ ][ ] 14-15

PLEASE NOTE: If you have started breat-feeding or given mixed feeding, please answer the following 4 questions Questions 9 - 12).

If you began and still bottle feed, please ignore Questions 9-12.

- 2 -

9. IF YOU BEGAN WITH BREAST-FEEDING CAN YOU SAY FOR HOW LONG YOU CONTINUED

_____

Don't know = 88
Not applicable = 99

[ ][ ] 16-17

10. IF YOU HAVE STOPPED BREAST FEEDING FOR OTHER THAN MEDICAL REASONS? DO YOU THINK THAT YOU SHOULD HAVE BEEN ENCOURAGED OR GIVEN ADVICE TO ENCOURAGE YOU TO CONTINUE BREAST FEEDING.

No	= 1
Yes	= 2
Don't know	= 8
Not applicable	= 9

[ ] 18

11. IF YES, WHAT KIND OF ADVICE OR SUPPORT DO YOU THINK YOU SHOULD HAVE BEEN GIVEN

_____

_____ [ ][ ] 19-20

AND FROM WHOM? _____

Don't know = 88
Not applicable = 99

[ ] 21

12. IF YOU STARTED WORK WHILE YOU WERE BREAST FEEDING DID YOU WANT, WHILE AT WORK, TO

Breast feed	= 1
Bottle feed	= 2
Other	= 3
Don't know	= 8
Not applicable	= 9

[ ] 22

13. WHAT DO YOU GIVE MAINLY NOW

Breast	= 1
Bottle	= 2
Cow's milk in cup	= 3
Mixture of above	= 4
Other (Specify) _____	= 5

[ ] 23

14. DOES BABY GET A BOTTLE AT EVERY FEED

No	= 1
Yes	= 2
Not applicable	= 9

[ ] 24

15. IF NO, THEN HOW OFTEN DURING THE DAY DOES THE BABY GET A BOTTLE

_____

Don't know = 88
Not applicable = 99

[ ][ ] 25-26

AND DISADVANTAGES (OR DIFFICULTIES) OF THE METHOD OF FEEDING YOU HAVE CHOSEN

Advantages _____

_____

_____ [ ][ ]

Disadvantages and difficulties

_____

_____ [ ][ ]

_____

_____ [ ][ ]

17. LOOKING BACK ON THE TIME SINCE YOUR BABY WAS BORN, WOULD YOU STILL CHOOSE THE SAME TYPE OF FEEDING

No	= 1
Yes	= 2
Don't know	= 8

[ ]

18. IF NO, THEN WHY _____

_____

Don't know = 88 [ ][ ]

19. HAVE YOU OBTAINED FURTHER INFORMATION ON INFANT FEEDING SINCE BABY WAS BORN

No	= 1
Yes	= 2
Don't know	= 7

[ ]

20. IF YES, FROM WHOM OR WHERE

Husband/partner	= 1
Family	= 2
GP/Nurse/Health Visitor	= 3
Friend/Neighbours	= 4
Books/T.V./Radio	= 5
Other (Specify) _____	= 6
Don't know	= 8
Not applicable	= 9

[ ] 1

- 4 -

21. WOULD YOU LIST AREAS OF FEEDING INFORMATION ABOUT WHICH YOU WERE NOT TOLD BUT WHICH YOU THINK ARE IMPORTANT

_____

_____ [ ][ ] 40

Don't know = 88

22. WHEN DID YOU INTRODUCE SOLIDS TO YOUR BABY

_____ (Age in Weeks) [ ][ ] 42

Don't know = 88

23. WHAT KIND OF SOLIDS IS YOUR BABY BEING GIVEN NOW

Normal family diet = 1

Special baby diet (Specify) _____

_____ = 2

Don't know = 88 [ ] 44

24. HOW MANY MAIN MEALS PER DAY DOES YOUR BABY HAVE

_____ (Meal/day) [ ][ ] 45-

Serial No. ☐☐☐ 1-3

25. COULD YOU COMPLETE THE FOLLOWING TIMETABLES ABOUT THE BABY'S FEED DURING THE WHOLE OF TOMORROW, FROM MORNING UNTIL BEDTIME, INCLUDING DRINKS.

Time of feeding	Type of food and drink given
Morning time _____	_____
Time _____	_____
Time _____	_____
Noon Time _____	_____
Time _____	_____
Time _____	_____
Evening Time _____	_____
Time _____	_____
Time _____	_____
Bedtime _____	_____
OTHER _____	_____
_____	_____

☐☐ 4-5 ☐☐ 6-7
☐☐ 8-9 ☐☐ 10-1
☐☐ 12-13 ☐☐ 14-1
☐☐ 16-17 ☐☐ 18-1
☐☐ 20-21 ☐☐ 22-2
☐☐ 24-25 ☐☐ 26-2
☐☐ 28-29 ☐☐ 30-3
☐☐ 32-33 ☐☐ 34-3
☐☐ 36-37 ☐☐ 38-3
☐☐ 40-41 ☐☐ 42-
☐☐ 44-45 ☐☐ 46-
☐☐ 48-49 ☐☐ 50-

26. DO YOU INTEND TO HAVE ANOTHER CHILD

No = 1
Yes = 2
Don't know = 8

☐ 52

35. WHAT IS THE BABY'S BODY WEIGHT NOW _____ ☐

OR WHAT WAS THE RECENT BODY WEIGHT ☐

Age _____ (In Weeks) ☐

Bodyweight _____

36. DO YOU THINK YOUR BABY IS HEALTHY ☐

No = 1
Yes = 2
Don't know = 8

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

ANY COMMENTS WILL BE HIGHLY APPRECIATED

_____

_____

_____

27. IF YES, CAN YOU SAY WHEN APPROXIMATELY YOU WOULD LIKE TO HAVE IT (PLEASE STATE THE PERIOD IN RELATION TO YOUR BABY'S AGE) i.e. When present child is _____ months old.

Don't know = 88
Not applicable = 99

☐☐ 53-54

28. WHAT TYPE OF FEEDING DO YOU PLAN TO USE NEXT TIME

Breast = 1
Bottle = 2
Breast & Bottle = 3
Other (Specify)
_____ = 4
Don't know = 8
Not applicable = 9

☐ 55

29. HOW OLD IS YOUR BABY NOW _____ Weeks

☐☐ 56-57

30. HOW OFTEN HAS YOUR BABY BEEN SO UNWELL THAT YOU HAVE HAD TO TAKE HIM/HER TO THE G.P.

Frequently = 1
Occasionally = 2
Never = 3

☐ 58

31. DOES YOUR BABY SLEEP WELL AT NIGHT

No = 1
Yes = 2

☐ 59

32. DOES YOUR BABY SUFFER FROM ANY MAJOR ILLNESS

No = 1
Yes (Specify)
_____
___ = 2

☐ 60

33. DO YOU FIND ANY DIFFICULTIES IN LOOKING AFTER HIM/HER

No = 1
Yes = 2

☐ 61

34. WHERE DOES HE/SHE SLEEP

Separate room = 1
Your room = 2
Other (Specify)
_____ = 3

☐ 62

APPENDIX 9 CONTD.

ssor J. H. BARBER, M.D., F.R.C.O.P.,
'(Gl. D.R.C.O.G. (Norie-Miller Chair)

r Lecturers
MURRAY, M.D., F.R.C.O.P., F.R.C.P., D.R.C.O.G.
Assistant Lecturer)
WOOD, M.D., M.R.C.O.P.

:KAY, O.B.E., M.R., F.R.C.O.P.

UNIVERSITY OF GLASGOW
DEPARTMENT OF GENERAL PRACTICE

WOODSIDE HEALTH CENTRE,
BARR STREET,
GLASGOW G20 7LR
TEL: 041-332 9977

Dear

I must thank you for your invaluable help with my research. It has been kind of you to complete my questionnaire so fully. The information that you have given me is the basis for a study which is looking at people's knowledge and attitudes to infant feeding in two different countries and cultures - Scotland and Bahrain. The results of this study will be valuable as I will be able to find various hidden problems with which mothers need to be helped. The following are some of the areas which the study will show:

1. The pattern of infant feeding in the first six months of life.

2. Problems that mother's experience with infant feeding.

3. How to help mothers with information and advice.

4. How to improve the existing sources of support given to mothers with young infants.

The final analysis of the study is not yet complete but if you wish to have a copy of the final report please write to me and I will send one to you once it is completed.

In order to complete my study I would be grateful if you could complete the enclosed questionnaire, which is the final one in the study, and send it back in the enclosed stamped, addressed envelope.

Once again I thank you for all the help you have given me and may I wish you a happy life with your new baby.

Yours sincerely,

DR. FAISAL ALNASIR, MRCGP.

APPENDIX 10