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WEANING PRACTICES OF MOTHERS / CHILDMINDERS WHOSE BABIES ARE BETWEEN THE AGES OF SIX TO NINE MONTHS ATTENDING CLINICS IN THE INNER CITY IN JOHANNESBURG

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A Research report submitted to the
Faculty of Health Sciences, University of the Witwatersrand, Johannesburg
in partial fulfilment of the requirements for the Degree
of
Master of Science in Nursing

Johannesburg, 2000

DECLARATION

I, Adele Agatha Tjale, declare that this research report is my own work. It is being submitted for the Degree of Master of Science (Nursing) in the *University of the Witwatersrand, Johannesburg.* It has not been submitted before for any degree or examination at this or any other University.

Signature .....

Date..... 4/8/2000

DEDICATION

To my personal Saviour, the Lord Jesus Christ, who is the source of my strength and support; the sustainer of all potential.

To the memory of my mother Ntutu. Mama I am always mindful of your prayers, support and your unparalleled love which has given me the zeal to strive for greater heights in life. Thank you.

ACKNOWLEDGEMENTS

I would like to thank my husband, Edwin for his love, patience and most of all for believing in me.

To our children, Amanda, Palesa and Thabile, I am deeply thankful for your understanding, inspiration and love.

Special thanks to Mr Jonathan Levin (Statistician) for patience and encouragement. Your valuable input in statistical analysis and interpretation is greatly appreciated.

To My Colleagues
Thank you for your practical support and continued encouragement.

To Mrs Judy Bruce
Thank you for your time, patience and support.

ABSTRACT

The main aim of this study was to describe the weaning practices of women resident in the inner city of Johannesburg, whose children are between the ages of six to nine months. It was intended to explore the factors that influence the choices for feeding practices.

The inner city of Johannesburg was selected as a study area because in 1986, the influx control laws were abolished in South Africa and this paved a way for large numbers of black, coloured and Indian people to migrate to the urban areas. The environmental state of the inner city and the Hillbrow area has been progressively deteriorating to almost a slum because of high population density and overcrowding. The high unemployment rate and economical uncertainty in some African states have caused a wave of illegal immigrant to flood the inner city in search of better life.

A descriptive study was conducted on ninety nine mothers/ childminders attending child health care clinics in the inner city. Three clinics in the inner city were sampled for the purposes of this study. A structured interview schedule was administered to mothers or childminders whose children were between the ages of six to nine months.

Results of the study revealed that breastfeeding is initiated by most women at birth. By four months only twenty five percent of women were exclusively breastfeeding. Early weaning was associated with poor quantity and poor quality of breast milk. Partial breastfeeding is practised and women use a variety of milk formulas to substitute breast milk.

Analysis of factors that might have influenced the early supplementation, women (20.7%) indicated that dissatisfaction with milk insufficiency was the reason for stopping breast feeds. Only two women had stopped breast feeds because they were returning to work. Infant crying is interpreted as a signal for hunger. The information given by women on appropriate time of introducing solids differs from that of health professionals.

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CHAPTER 1

1.1 INTRODUCTION

The inspiration to conduct this research has developed over many years of working with children. My interest grew after I had children of my own. I came to realise how vulnerable children are in the hands of the parents who are trying their best to nurture them. While children depend entirely on their parents for nurturing, society expects the parents to respond to the natural process of physiological growth and development with the appropriate food for the correct age without proper training and guidance.

Most parents in turn rely on their family members and friends for support and guidance. The information given may not necessarily depend on the socio-economic status of the family but is influenced by the cultural practices and traditions carried from one generation to the next. At the same time urbanisation has gradually eroded the moral and physical support that has been enjoyed by many families in the past through communal living.

According to WHO (1997) 12 million children die every year before they reach their fifth birthday in developing countries and many of these deaths occur in the first year of life. Malnutrition is one of the five major diseases implicated as the cause of death in early childhood contributing to about 54% of all deaths. The projections based on the Global Burden of Disease Analysis in 1996 indicate that this trend will continue until the year 2020 unless significant efforts are made to control and prevent this unnecessary loss of life (WHO, 1997).

The picture in South Africa is no different from the rest of the developing countries. According

to de Muelenaere (1997) from the Department of Human Nutrition of the Medical University of South Africa, twenty four percent (24%) of South African children suffer from stunting (height-for-age) and 3% suffer from wasting.

In his report de Muelenaere (1997) states that stunting is more prevalent among the rural children (28%) as compared to the urban children (17%). He cites poor feeding practices during the introduction of supplementary feeding and the cessation of breastfeeding as the main causes of stunting. Poor socio-economic conditions, lack of education and poor medical/health services as some of the causes of stunted growth in South African children (de Muelenaere, 1997).

The period between six and twenty four months in early childhood is the most critical stage in a baby's life when the impact of malnutrition on growth and weight gain is the strongest. Infant feeding within the limits of the study should be seen holistically as one aspect of general child care governed by beliefs, perceptions, attitudes and forms of knowledge deeply rooted in cultural and social experiences (Pelto, 1984, Richter, 1994).

1.2 BACKGROUND

The first year of life is very important for future growth and development of the infant. It is the period in life when growth velocity and nutritional intake are the highest. Infants triple their weight and increase their height by 50% in the first year of life. Growth rate is rapid with infants gaining about 200 g in weight and increasing in length by 1 cm weekly. With this, organs are growing and maturing at a higher rate. The brain triples in size during infancy reaching more than 90% of adult size at 2 years of age (Savage-King & Burgess, 1992; Robinson & Wiegley, 1993, Michaelson, 1997).

The regulation of growth during infancy is different during childhood. The reason for this is unknown although there is evidence to suggest that nutrition plays a major role for this difference (Whitehead and Paul in Michaelson, 1997). The role of growth hormone becomes more important after infancy and this is modified by the sex hormones during puberty. Kalberg in his Infancy, Childhood and Puberty (ICP) model suggests 3 components of growth and development namely Infancy, Childhood and Puberty (Kalberg, Engstrom, Fryer, and Kalberg, 1988).

Infants are often at the mercy of their parents regarding feeding. While they regulate to some extent the amount they eat, they have very little or no influence on the composition of their diet. For this reason they are vulnerable to parental misconceptions about feeding and weaning practices. Parents give their infants alternative or extreme diets with the best intentions but this may result in poor growth and nutritional deficiencies (Smith & Lifshitz in Michaelson, 1997).

1.3 PROBLEM STATEMENT

According to the report of the Committee for the development of a Nutrition Strategy for Southern Africa (1990), 2.3 million people in South Africa can be considered for nutritional assistance. Thirty five percent are children between the ages of six months to five years. Forty five percent of the Southern African population live below the minimum subsistence level. The availability of food in the disadvantaged communities and inadequate food consumption with poor socio-economic conditions will contribute to malnutrition both in women and children with devastating results.

The drought and depressed economy have affected the availability of food making the families at risk more vulnerable. The early weaning of babies, vitamin and micro-nutrient deficiencies are

documented as the major causes of malnutrition. Breast feeding in South Africa appears to be sustained longer by mothers in the rural areas when compared to those in the urban setting (UNICEF, 1993).

The recent work done by the South African Vitamin A Consultative Group (SAVCG) in 1997 agrees with the findings in other developing countries which indicate that factors of stunting are present before the second year of life. The factors contributing to this stunting include quantity and quality of food intake, the prevalence of infectious diseases such as diarrhoea and upper respiratory tract infections, breast feeding, weaning practices and the quality of child care (Benade, 1994).

The researcher observed that in a period of six months in her ward 42 children were admitted with gastro intestinal diseases. The ages ranged from one month to twelve months. The observed children were all bottle fed.

Various reasons for not breastfeeding were given by the mothers. These were :

- children did not want the breast milk.
- convenience of bottle feeding and the freedom from the responsibility of being the sole care giver.
- hungry babies are not satisfied with breast milk.

Mortality and morbidity from acute diarrhoeal disease increase among infants and children during and after the weaning period in developing countries as indicated by research from developing countries and South Africa (de Muelenaere, 1997, WHO, 1996).

This is consistent with the results of the research conducted by the Essential Health Research Group of the Medical Research Council in 1994, that morbidity due to acute diarrhoeal diseases increases among infants and children during and after the weaning period in developing countries.

In a large urban hospital where the researcher worked there is adequate statistical data to suggest that there is a high prevalence rate of gastro enteritis among children under 1 year. The researcher observed that in the gastro enteritis unit forty two cases were admitted with diarrhoeal diseases over the period of six months. The infant ages ranged between one to twelve months. The hospital caters mostly for the urban community and the surrounding Primary Health Care Clinics refer patients to the hospital for admission and treatment.

The legacy of apartheid and South African policies have had direct consequences on the health status of the majority of people as evidenced by the poor nutrition and poor housing (Buch & Rispel, 1989: 2) and the inner city community is evidence of this fact. The influx of people to the inner city of Johannesburg has led to concerns about the area becoming a slum (Hlungwane, 1996: 1). According to surveys done by the Hillbrow Working groups in 1991, the number of houses was 274 and the total number of flats was 12,964. The Human Science Research Council estimated the population in Hillbrow and Berea in 1992 as 32,525. Actstop in 1993 estimated the total population of Hillbrow and Berea as 100,000. Available survey studies on estimates of population in Hillbrow vary, and do not include the homeless. Accurate census data is difficult to find due to factors such as illegal immigrants and fears of eviction (Kellen, 1993). The majority of Hillbrow residents are recent arrivals including a significant number from other parts of Africa. Many of these people have brought in their cultural beliefs and values that are unknown to the South African nursing community.

1.4 THE PURPOSE AND IMPORTANCE OF THE STUDY

The purpose of this study was to describe the weaning practices of mothers and or child minders whose children are between the ages of six to nine months and resident in the inner city of Johannesburg. It was intended to explore the factors that influence the choices for feeding practices.

The results would firstly serve as a knowledge base for guiding appropriate future decisions and interventions in child feeding practices. Secondly the results would facilitate the creation of new teaching strategies for health workers incorporating an emphasis on traditional views of mothers.

There is adequate empirical evidence to suggest that the introduction of weaning foods to an infant below the age of three months can be dangerous for the health of the infant. Unhygienic preparation of weaning foods and inappropriate choices may lead to malnutrition and infection (Savage King & Burgess, 1992; Musaiger, 1996; Mondal, Gupta, Ghosh and Skider, 1996).

1.5 OBJECTIVES OF THE STUDY

This study set out to achieve the following objectives;

- To investigate the early feeding practices in infants from 0-3 months, 4-6 months and 6-9 months in the inner city of Johannesburg.
- To identify the factors affecting feeding practices.
- To analyse the factors influencing their choice of feeding methods.
- To identify the source of information for the mothers and childminders regarding their choice of feeding practices.

1.6 DEFINITION OF TERMS

WEANING

Weaning is defined as the transitional process of introducing foods other than breast milk to an infant and slowly increasing the amounts until the child gets adequate energy and vitamins from ordinary family foods.

BREAST FEEDING

Infant receiving breast milk alone or in combination with other foods.

EXCLUSIVE BREAST FEEDING

Indicates that breast milk was the only source of food or fluid given to the infant.

BOTTLE FEEDING

Refers to the infant and children who were given reconstituted powdered milk or other infant formula.

CHILDMINDER

The person who cares for the child during most part of the day in the absence of parents, at the child's home. It may include a grandmother or other family members.

SUPPLEMENTARY FEEDING

Defined as any other food intake besides breast milk.

1.7 CONCLUSION

In this chapter the statement and scope of the problem have been discussed. The purpose and importance of the study, objectives and definition of terms have been identified. In the next chapter the literature review will be discussed.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter the researcher presents a literature survey which gives an overview of infant feeding and weaning practices. It is divided into early feeding practices from 0-3 months, including breastfeeding, patterns of supplementation, initiation of supplementation and weaning practices between 4-6 months and 6-9 months. In addition, studies on infant feeding in the first two years of life will be discussed.

2.2 INFANT FEEDING PRACTICES (0-3 MONTHS)

2.2.1 BREASTFEEDING

In reviewing the literature there has been a resurgence in interest in breastfeeding and the implementation of policies in hospitals and maternity services aimed at improving breastfeeding especially exclusive breastfeeding in the first four to six months of life (Wagstaff and Kibel 1991: 86, Arlotti, Cottrelli, Lee & Curtin, 1998: 164, Jones, Geyer & Bell 1996, Samuel, 1997: 219). This can be attributed to the WHO/UNICEF Baby Friendly Hospital Initiative.

WHO & UNICEF in 1991 jointly launched the Baby Friendly Hospital Initiative. UNICEF designed this programme to make it easier for hospitals to encourage breastfeeding. In order to follow the Baby Friendly Hospital Initiative, the hospitals and maternity services must embrace the Ten Steps to Successful Breastfeeding.

2.2.1.1 Ten steps to successful breastfeeding

- Have a written breastfeeding policy that is routinely communicated to all staff.
- Train all health care staff in skills necessary to implement this policy.
- Inform pregnant women about the benefits and management of breastfeeding.
- Help mothers initiate breastfeeding within half an hour of birth.
- Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
- Give newborn infants no milk or water other than breast-milk, unless contra-indicated for a medical reason.
- Allow mothers and infants to remain together 24 hours a day from birth.
- Encourage natural breastfeeding frequently and on demand.
- Not to give or encourage the use of artificial teats or dummies to breastfed infants and not encourage the use of nipple shields either.
- Promote establishment of breastfeeding support groups and refer mothers to these on discharge from the hospital or clinic.

(Department of National Health, 1996, De Villiers, 1995, Jones, 1996).

The South African Department of Health has embraced this policy as a National Breastfeeding Policy. The National Department of Health (1996) proposed that health workers should promote exclusive breastfeeding for the first six months after birth. The infant during this time receives only breast milk from the mother or wet nurse or expressed breast milk.

No other solids or liquids with the exception of vitamin drops or syrups should be given to the

infant at this time (Department of National Health, 1996: 6).

In 1994 St Monica's Maternity Home in Cape Town was declared a Baby Friendly Hospital by UNICEF (De Villiers, 1995: 9). The implications of this declaration on child survival are well worth the financial commitment in reducing child morbidity and mortality in the developing countries. De Villiers (1995) argues that the baby friendly initiative is a substitution of good practice for bad practice and the cost of running hospitals will be reduced as infant formula, feeding bottles and separate nurseries become unnecessary.

In the Phillippines, the baby friendly hospital (Jose Fabella) has reported a saving of eight percent on its annual budget. Such savings in South Africa would be appreciated because of the cost of free medical care for infants and children under six years to hospitals (De Villiers, 1995: 9).

There is overwhelming evidence that the scientific and lay communities agree that human milk is the best food for baby (Notzon, 1984: 661; Coovadia & Wittenberg, 1998: 178, Burton - Jeangross, 1995: 67, Wagstaff, de Wet and Anderson, 1993: 10).

Breast milk provides unique benefits that cannot be matched by any commercially prepared formula. These benefits range from biochemical, immunological, enzymatic, endocrinological, psychological, developmental, hygienic and economical (Department of Health 1996; 1, Coovadia & Wittenberg, 1998: 176, Wagstaff and Kibel, 1991: 84, Silver, Kemp and O'Brien, 1986: 94, Stanfield, 1997: 144).

2.2.1.2 *Beneficial effects of breast milk*

The nutritional value of breast milk is widely documented. Promotion of breast milk for child survival has been intensified in this decade because of its advantages to both mother and child. The composition of human milk according to O'Brien, Chase & Hambidge in Silver, Kemp and O'Brien (1986: 95) is ideal for the following advantages:

- anti-infectious qualities of IgA and lysozyme in colostrum and lactoferrin and transferring in milk.
- a lower osmotic load with regard to sodium, potassium and phosphorus.
- a nutritional balance between iron, zinc, vitamin E and unsaturated fatty acids.
- a lower protein content with higher whey to casein ratio. Whey protein is more digestible.
- a possible long term preventative advantage in cardiovascular disease because the higher cholesterol content may induce the production of enzymes required for cholesterol catabolism.
- prevention of allergy/atopy (Wagstaff and Kibel, 1991: 84).

O'Brien et al (1982: 93) describe colostrum as a yellow, alkaline breast secretion that may present in the last few months of pregnancy and the first 2-4 days after delivery. It is high in specific gravity (1.040-1.060), high in protein, vitamin A and mineral content with a lower carbohydrate and fat content (Refer to Table 2.1).

Table 2.1 Nutrient composition of breast milk, cow's milk and a representative infant formula

Nutrient per ml		Breast milk	Cow's milk	Infant formula
Protein	g	1.2	3.5	1.5
Energy	k J	280	276	281
	Cal	67	66	67
CHO	g	7.4	4.9	7.2
Fat	g	3.6	3.7	3.6
Minerals per mg percent				
Ca		35.0	117.0	4.2
P		15.0	98.0	28.0
Na		15.0	51.0	15.0
K		60.0	137.0	56.0

(Coovadia & Wittenberg, 1998: 178 & Wagstaff and Kibel 1991: 84)

Despite these beneficial effects of breastfeeding human beings have interfered with the normal pattern of breastfeeding since the dawn of civilization.

2.2.1.3 Factors affecting breastfeeding

Breastfeeding was always considered the natural way. In Africa when families lived together the newly delivered mother would be supported to the extent of taking over her duties to allow the mother time to bond and succeed in breastfeeding. According to Bwibo (1995:146) breastfeeding was considered essential for the survival of the baby and when the mother died in child birth, the baby would be breastfed by a female friend or grand mother. In Western European countries, rich women employed wet nurses and lactating mothers to breastfeed for them. During the industrial revolution breastfeeding trends began to decline in the developed countries but have since reversed while the trend has and still is continuing to decline in the

developing countries (Bwibo, 1995: 146).

The reasons given by women for not breastfeeding include breast-milk insufficiency and poor quality breast-milk, which are based on wrong attitudes or misconceptions (Hoffmann, Duncan & Disler, 1984:65). Genuine cases of women with insufficient breast milk, for example mother of twins, may need special attention. Bwibo (1995) argues that the changing status of women in the developing countries has to be considered when examining the reasons for not breastfeeding.

The financial implications are devastating to the family especially if the mother is not working. According to Bwibo (1995: 146) it would cost the woman on a minimum wage, 20 percent of her earnings to feed properly for a month, her three month old infant.

The earliest known feeding bottles for administering animal milk to human babies dates back to 4000 BC (UNICEF, 1992). The Pharaoh's used wet nurses for rearing their children (UNICEF, 1992). The use of breast milk substitutes has produced genocidal effects in the developing countries with an estimated 12 million children dying every year before reaching their fifth birthday. Many of these children die in the first year of life (WHO, 1997).

According to the Department of National Health, data on breastfeeding in South Africa are fragmented and the prevalence of exclusive breastfeeding in infants under six months of age is unknown. The available data on breastfeeding show that there has been a decline in the breastfeeding period especially in the urban areas (UNICEF, 1992).

Hoffmann, Duncan and Disler (1984) surveyed 169 mothers who attended clinics with infants under the age of six weeks. The study was conducted to investigate breastfeeding practices in the Heideveld area of Cape Town.

In this study the researchers scheduled two interviews: one for mothers of infants who were less than six weeks old and the other for those between seven and twelve weeks. Only 89 (52,7%) were breastfeeding at six weeks. When 80 of the breastfeeding mothers were interviewed six weeks later only 50% were exclusively breastfeeding.

Similar findings were reported in Kwazulu Natal (1983). Ross, Van Middelkoop and Khoza (1983) surveyed African urban and rural women attending child welfare clinics within 24 weeks of confinement in Durban. Only 11% of urban women were still breastfeeding at 12 weeks compared to the 98% of rural women . In their findings they reported that women who had failed to maintain breastfeeding were more likely to introduce supplementation ($P < 0,05$).

Most women in this study discussed above, suckled their infants in the immediate neonatal period. Eighty nine percent of all women were still breastfeeding at eight weeks. In the rural category, 98 % of women were still breastfeeding their infants between the period 3-24 weeks. Meanwhile the urban women had totally discontinued breast feeds by 17-24 weeks. Reasons given by urban women for introducing supplementary feeding were:

- baby not satisfied: 32%
- not enough milk: 21%
- return to work: 22%

In this study "milk insufficiency" and "baby not satisfied" accounted for half of the mothers introducing supplementation (Ross, Van Middelkoop & Khoza, 1983: 23-25).

Steyn, Badenhorst, Nel and Ladzani (1993) surveyed 118 Pedi mothers of three to five year old children in Lebowa. Their results showed that 90% of the women were still breastfeeding by six months and 61% continued for the period of eighteen months. The findings of this study confirms the differences in breastfeeding between the urban and rural women (Kau, 1990: 30, UNICEF, 1992).

A possible interpretation for this long period of breastfeeding in the rural areas is due to environmental factors, in that the community value and practice breastfeeding. The encouragement and support the women receive is culturally based and this may contribute towards the decision to breastfeed (Kau, 1990).

Baish cited by Purtell (1994:157) states that contact with and exposure to breastfeeding will influence a young woman's decision to breastfeed and the absence of a positive role model may lead to a neutral or negative attitude towards breastfeeding.

In urban areas the community support is lost. The decision whether to breastfeed or not is made by women before the child is born. A positive attitude from the father, family members and community will assist the women in making this decision. Even though the woman can be emotionally ready for breast feeding before the baby is born, the baby's health status immediately

after birth will determine the success of the breastfeeding process. According to Coovadia & Wittenberg (1998:177) a healthy infant with a well developed sucking reflex will facilitate the breastfeeding process.

Health care professionals have been in the forefront in promoting breastfeeding. Purtell (1994) suggests a multi-disciplinary approach towards the promotion of breastfeeding. The breastfeeding promotion team should include health care professionals and community members to target teenage girls at school. The contact with and exposure to breastfeeding will influence a young woman's decision to breastfeed. Purtell (1994) also suggests that breastfeeding initiatives must be planned to include teenage girls because positive attitudes towards breastfeeding need to be established at an early stage.

2.2.1.4 Contra-indications to breastfeeding

While the beneficial effects of breastfeeding are well documented, it is impossible for some women to breastfeed for reasons beyond their control. The infant or the mother may suffer from conditions that result in breastfeeding being contra-indicated at birth (refer to Table 2.2). HIV positive mothers at this moment are contra- indicated to breast feed their infants who may be HIV negative infant (Bwibo, 1995:145). More scientific evidence will help in future in understanding the HIV controversy.

The role of a health worker in promoting breastfeeding is to assist women without making the women who choose not to breastfeed, feel inferior.

Table 2.2 Contra-indications to breastfeeding

Absolute		Relative	
Mother:	psychosis HIV in developed countries serious systemic disease carcinoma of the breast	Mother:	late pregnancy infections e.g. typhoid AIDS, herpes septicaemia, pneumonia
Drugs:	radio-active iodine cytotoxins thioracil		
Infant:	galactosaemia phenylketonuria	Infant:	abnormalities e.g. mouth or swallowing mechanism: • low birth weight • lactose intolerance

(Coovadia and Wittenberg 1998: 176)

As part of the Baby Friendly Hospital Initiative efforts should be made to assist the woman to breast feed the baby. Assessment of the severity of illness and low birth weight should be done before formula feeding is introduced.

A woman who has difficulties in breastfeeding will inevitably ask for assistance from family members, friends and community members about alternative methods of feeding. In a research study done in Bangladesh, Haider, Islam, Kabir & Habte (1996) found that grandmothers were the main advisers on supplementary feeding followed by mothers, doctors and neighbours.

Professional nurses at the clinics are often questioned about artificial feeding by women who cannot afford to breastfeed. Reasons for not breastfeeding are varied. In such situations the nurse will give practical advice and supportive care. In respect of the women's right to choose what

is best for baby, professional nurses will offer supportive assistance rather than coerce the women to change her decision.

2.2.2 WEANING PRACTICES

2.2.2.1 4-6 Months of age

There is voluminous literature on early infant feeding. Special attention has been given to studies in South Africa and internationally between 1982 -1998 in which infant feeding and weaning practices were addressed.

The subject of weaning practices has been widely studied in various forms. Weaning as a concept has been used to mean the cessation of breastfeeding or the introduction of transitional food (Notzon, 1984, Kibel and Wagstaff 1991, Savage-King & Burgess 1992). In this study the definition of weaning as given by Savage- King and Burgess (1992) will be followed.

Savage-King and Burgess (1992) define weaning according to three stages from the beginning of six months to three years.

2.2.2.2 Stage One (6-7 Months)

The baby gets all the nutrients from breast milk but starts other food.

2.2.2.3 Stage Two (7-12 Months)

The child continues to get the same amounts of breast milk and eats increasing amounts of other food.

2.2.2.4 Stage Three (1-3 Years)

From twelve months to three years the child takes slowly decreasing amounts of breast milk and eats increasing amounts from family foods. Weaning is complete when a child gets all nutrients from family foods.

2.2.3 PATTERNS OF SUPPLEMENTATION

Notzon (1984) studied trends in infant feeding in developing countries. The findings in this study indicated that weaning practices can vary from society to society and even from one group to another within a single society.

Ellison, Wagstaff, Cameron and de Wet (1997) demonstrate this fact by comparing the results from the "Birth to Ten study" and the study done by Delport, Becker & Bergh (1997) in Pretoria. These researchers argue that geographical differences in infant feeding patterns may illustrate how the environmental and or socio -economic differences influence infant diets even among similar groups in society. These differences may reflect the socio-economic and or social consequences of urbanisation especially in disadvantaged communities.

According to Notzon (1984) women in different countries initiate breastfeeding and in some countries the infants are given other foods while continuing with breastfeeding. The choice of supplementary foods changes from more easily digestible foods to normal family diet. The mix between breast and other foods continues until breast milk production terminates. The duration of breastfeeding in many countries is more than one year (Notzon, 1984). This practice has been demonstrated in the South African studies (Wagstaff, de Wet & Anderson 1993 :11, Steyn, Badenhorst, Nel & Ladzani, 1993: 11).

The choice of age at which initiation of supplements and the type of supplements used are culturally and socially determined. These may vary depending on the availability of different foods and their cultural acceptance for use in weaning (Notzon, 1984: 658, Rasbridge & Kulig 1995: 213).

2.2.3.1 Initiation of supplements

Opinions differ on timing of the introduction of solids. Notzon (1984) found that the initiation of supplements occurs at an early age in the Carribean-Central American region. Similar findings were reported in Mexico. In African countries Notzon (1984) reports that the supplements were introduced later in comparison to the Central American region. In Cameroon infants received non milk supplements between ages three to five months. In comparison to Zaire and Ethiopia, supplements were introduced between two to three months (Notzon, 1984: 659).

Haider, Islam, K...ir &Habte (1996: 170) undertook a study on children below seven months recovering from diarrhoeal episode in Bangladesh. The aim of the study was to identify and understand why mothers initiate early supplementary feeding. Their results showed that seventy five percent of infants in the first six months were severely malnourished. Complementary feeds were started by mothers when infant's median range was 27 days (1 - 180 days). Mother's perceptions regarding breast milk being insufficient (53%) or causing diarrhoea (19%) were the major reasons for complimentary feeding. In this study the sample was clinic based and supplementary feeds were started prior to the diarrhoeal episode and the authors argue that the perceptions of the clinic sample are similar to those of mothers in the community in Bangladesh.

A great concern according to the researchers in this study was that 25% of infants were severely

malnourished and supplementary feeding before two months of age emerged as a leading factor for malnutrition. The limitation in this study was the absence of birth weight as the authors were unable to ascertain if growth faltering had commenced before the introduction of supplementary feeding.

According to WHO/UNICEF (1993) the first solids can be introduced from the fourth month. Children who are breastfeeding and growing normally can receive their solids by the sixth month of life.

In the studies done in South Africa the age at which the supplements are initiated varies from one month to three months. Wagstaff, de Wet & Anderson (1993) in the Birth to Ten (BTT) study found that the median age of weaning was 12-16 weeks.

Weaning foods can be given to an infant in variety of ways such as hand, cup, spoon and bottle containing different milk and formula, mixtures of gruel, porridge, vegetables, tea, sugar water and juice (Dittewyler & Fishman in Richter 1994: 30).

Steyn, et al, (1993: 10) reported that 59% of infants in Lebowa had received refined maize meal porridge by three months of age. Twenty three percent of women did not give milk to their infants once weaned from breast or bottle. Similar findings were reported by Brink and Boschoff (cited by Steyn et al, 1993).

Richter (1994) conducted a quantitative study and interviewed 100 women from Soweto with infants between the ages of 8 and 17 weeks. The objectives of the study were:

- to determine the traditional beliefs and practices of African women in relation to infant feeding and in particular, to the early introduction of solids and
- to examine the social, personal and health determinants and outcomes of different infant feeding practices.

The findings in this study showed that 37 women gave their infants water to drink and thirty nine women gave their infants gruel (mielie meal or sorghum). The remainder gave their infants commercially prepared porridges. Breast milk insufficiency was frequently cited as an explanation for the early introduction of breast milk supplements.

The majority of mothers breastfed their infants on demand and others (28%) reported that breastfeeding occurred only in response to crying. These mothers according to Richter(1994) interpret "infant crying behaviour" as an indication that the infant is crying because of hunger.

Eight percent of mothers according to Richter (1994) reported breastfeeding in response to external stimulus such as

- baby wakes up (20%) full breasts (2%)
- and time scheduling (4%).

Gruel made up of sorghum and maize meal was fed to infants before they reached four months of age. Richter (1994) reported that, in this study five of the infants were introduced to gruel before they were one month old. The reasons given by mothers for introducing these foods were to satisfy the nutritional needs of the infant because the child was hungry or crying. Richter (1994, 32) concluded that infant crying emerged as a significant stimulant for maternal feeding.

A similar notion was expressed by Ross, Loening, Middelkoop (1983) in KwaZulu Natal when they suggested that the "insufficient milk syndrome" is probably due to mother's misinterpretation of the baby's crying as caused by hunger.

The literature review suggests that the infant crying phenomenon increases from birth, peaks around 6 weeks, gradually declines and bottoms out at about one hour a day around 12 weeks of age (Brazelton in Richter 1994, 21). The infant's crying pattern is interpreted as part of the infant's continuous adaptation and reorganization during the first three months of life (Richter, 1994: 21). The mother's response to infant crying is interpreted as a signal to satisfy the infant's needs (Kusin, Kardjati & van Steenbergen, 1985: 284). It appears that there is a correlation between the timing of introduction of supplementary feeds and infant crying. Cominsky in Richter (1994) reports that in Kenya, mothers generally assume that infants do not cry without a cause and if the infant cries then it must be hungry.

Richter (1994) also noted that the interpretation of crying can differ even among women from similar backgrounds. Mothers in Soweto believed that infants were "crying for culture".Crying for culture was defined by Richter (1994: 24) as the " notion that children have to be inaugurated into a group through varying ceremonial processes, mostly to do with encountering and being recognised by their father's family and home" (Richter, 1994: 24). Fifty five percent of this study's sample were familiar with the concept of " infant crying for culture". Three mothers had already performed the required ritual while 19 women intended to engage in the ceremonial process. Only nine women disagreed with the practice; 22% showed that the ritual had no relevance in their lives (Richter, 1994: 24).

Delport, Becker & Bergh (1997) undertook research to study growth, feeding and infections in 145 infants at the Kalafong Hospital near Pretoria. In this study, African infants were followed from six to fifteen months and monitored at one month and then three monthly until the age of fifteen months. At three months, 67% of the infants received porridge while only 19% received protein rich food at twelve months. The results of this study showed that at three and six months of age the infants were above the reference media for mean weight - for age (Z scores) of National Council for Human Statistics and dropped to below the median at nine, twelve and fifteen months.

A similar study was conducted in a low socio-economic area in Cape Town. A random sample of 735 children between the ages of 0-24 months was drawn from clinic attenders over a period of three months. Children were divided according to different age groups 0-1, >1-3, >3-6, >6-9, >9-12, >12-18 and >18-24 months.

In the >1-3 month category 56% of infants were breastfed and only one infant was exclusively breastfed. Of the remaining forty four percent in the same category, twenty two percent of infants were given a combination of breast and breast milk substitutes. While the other 22% were given bottle feeds only. In the >3-6 months range only twenty four percent of these babies were exclusively breastfed. Forty nine percent were bottle fed and twenty seven percent were given a combination of bottle feeds and breast milk. This study revealed very low exclusive breas ding practices. The women gave reasons for not breastfeeding such as: that mothers did not want to breastfeed, mothers had no milk or the mother was sick in hospital (Van Staden, Langenhoven, Dharsay, Laubscher and Benade, 1995).

Steyn et al, (1993) conducted a survey on 118 Pedi mothers of three to five year old children in Lebowa. Data were collected on breastfeeding, weaning and current dietary habits. Forty nine had introduced solid food between the ages of two and three months. Ten percent of mothers introduced supplementary foods during the first month of life. Eighty two percent of mothers indicated that the first weaning food introduced was refined maize meal porridge.

Twenty three percent of women did not give their infants milk once weaned off the breast or bottle. Those who did give milk on regular basis, gave fresh or powdered cow's milk. A significant concern in this study was the fact that infants, once weaned from breast or bottle, receive very little or no milk product (Steyn et al, 1993).

Delport, Becker and Bergh (1997: 57-61) investigated the growth, early feeding practices and prevalence of infection among black infants in Pretoria. A qualitative dietary evaluation was performed to assess intake of porridge, vegetables and protein rich food. One hundred and forty five infants from urban and rural settings were enrolled in this study.

The results at three months showed that the prevalence of breastfeeding was lowered to 90% and continued to drop to 81% at nine months. At one month 98 of 106 infants were exclusively breastfed. By three months only 30 of 86 infants were exclusively breastfed. 8 of 112 infants were receiving porridge at one month. This figure increased to 96 at three months and 88 out 89 of infants were receiving soft porridge at six months.

At six months of age 24 of 93 infants were receiving a protein rich food in the form of eggs or meat. In this study 265 of infants had experienced an infection at six months and the prevalence

peaked at nine months. The majority of infants who reported to a health care centre had upper respiratory infection followed by diarrhoeal diseases even though the diarrhoeal diseases occurred infrequently.

The authors in this study concluded that optimal growth of economically disadvantaged infants during the first six months requires exclusive breastfeeding for the first four to six months. Secondly their findings supported the hypothesis that morbidity increases in acute diarrhoeal diseases during and after the weaning period (Morley 1974, Coovadia and Wittenberg, 1998, Wagstaff and Kibel, 1991, Barros, Semer and Victoria, 1995: 1225, Arevana, Casado and Reyes, 1995: [illegible]).

The Birth to Ten study (BTT) is a longitudinal observational study designed to describe the biological, environmental, social, economic and psychological factors associated with health and survival of South African children residing in the Johannesburg-Soweto areas over a period of ten years. The BTT sample is racially divided in order to describe the culturally determined patterns of infant feeding and child rearing (Wagstaff, deWet & Anderson 1993: 11). Data at one year revealed that breastfeeding was highest among Black children (94%), 91% in the coloured group, 87% in the Indian community and 61% in the white group.

The results for the women residing in the inner city of Johannesburg revealed that mothers breastfed on average for less than four months when compared to those from greater Soweto (Ellison, Wagstaff, Cameron and de Wet, 1997: 1025).

The comparison of feeding patterns from Soweto (BTT) and Pretoria among women from

similar disadvantaged communities provides interesting information. Interviews with principal caregivers revealed that the duration of breastfeeding in both studies was similar for infants under one month of age. The results were 94.4% in Soweto and 94.6% in Pretoria. From six months onwards mothers from the greater Soweto continued to breastfeed their infants and a significant number of these mothers made use of non - breast milk feeds when compared with the mothers from the outskirts of Pretoria. The differences explained in these studies reflect the socio -economic and or social consequences of urbanisation according to Ellison et al (1996). Thirteen point four percent ofthe Pretoria infants in the study of Delport et al (1997) were from a rural setting while those of Soweto lived in established urban and peri -urban community.

Mthimkhulu cited by Ellison, Wagstaff et al (1996) reported similar differences in types of supplementary feeding in Soweto as those of the BTT study (Ellison, Wagstaff, de Wet & Cameron, 1996). The results in Mthimkulu's study show that infants who were still breastfeeding at six months were less likely to receive cereals ($P<0.05$) or eggs ($P<0.01$). Infants who were still breastfeeding at twelve months were likely to receive maize meal as supplementary food ($P< 0.05$) when compared to those who had stopped breastfeeding. Ellison, Wagstaff, de Wet & Cameron (1997: 1026) concluded that " prolonged breastfeeding is often associated with complementary diet that contains little protein and little energy dense food".

Diaz, Herreros, Aravena, Casado, Reyes and Schiappacasse (1995: 371-376) surveyed 1217 urban children in Chile to examine the breastfeeding duration and growth of fully breastfed infants during the first year of life. All infants included in the study were healthy and fully breastfed at thirty days post partum, 63% and 24% were still fully breastfeeding at six and twelve months respectively. The mean age for introducing non diary foods and milk supplements was

6.0 and 7.4 months respectively.

The researchers concluded that when mother and infant are healthy, breastfeeding should be considered sufficient to support adequate infant growth for the first six months of life provided that the mother is free and willing to breastfeed on demand. Adequacy of breast-milk to support infant growth may vary between individuals and populations. This may be influenced by multiple factors such as :

- maternal nutrition and health
- birth weight of the child
- growth rate in the first months which is influenced by suckling frequency (Diaz et al., 1995, 376).

2.2.3.2 6-9 Months of age

The most critical stage in a baby's life is the six to twenty four month period because the impact of malnutrition is strongest with the introduction of weaning foods. At six months the iron stores that have accumulated during the gestational period begin to diminish. At nine months the content of breast -milk starts to drop. The weaning process at this stage has to ensure that the momentum of growth and development initiated by breast-milk, is sustained (de Muelenaere, 1997).

Saarinen and Kajosaari (1995, 1065) undertook a prospective long term study in Finland. They followed up healthy infants during their first years and at ages 3, 5, 10 and 17 years. The aim of the study was to determine the effect of atopic disease on breastfeeding.

A total of 236 infants were enrolled and only 150 infants completed the follow up study. According to their results the prevalence of manifest atopy throughout follow up, was highest in the group who had little or no breastfeeding ($P < 0.05$, analysis of variance and co-variance with repeated measures) which increased to age 17 years. The researchers concluded that breastfeeding for longer than one month seems beneficial in preventing food allergy with prevalence peak at 3 years and respiratory allergy with a prevalence peak at 17 years. Prolonged breastfeeding has beneficial effect at age 17 years. Similar findings were reported in a 20 year British follow up study. Breastfeeding according to these authors seems to confer long term protection against allergic sensitisation. Saarinen and Kajasaari (1995) suggest a two-fold action even though the actual mechanism is unknown ie:

- human milk may induce and promote the natural maturation of the intestinal mucosal barrier and the secretory immune system.
- human milk may passively reduce exposure to food antigens through inhibiting their absorption, local protection of the immature mucosa being afforded by secretory IgA and other immunoglobulins in human milk.

The significance of these results in the weaning period is that introduction of solid foods should be delayed until the age of six months if there is history of allergy in the family (Saarinen & Kajosaari, 1995: 1065-1069). The most common allergens should be avoided e.g. cow's milk, eggs and wheat for the first nine to twelve months period (Unknown Salus, 1992).

Forsyth, Orgston, Clark, Florey & Howie (1993) argue that studies on infant feeding and allergic diseases have concentrated on breast milk and artificial formulas while there are little data on the effect of solid foods. A report from New Zealand has shown an increase in the incidence of

eczema in children aged two & ten years who had been introduced to solid food before the age of four months (Fergusson, Horwood & Shannon, 1990: 54-56).

Forsyth et al (1993) conducted a study on 671 newborn infants and followed them up for twenty four months in a community setting in Dundee in Scotland. Their aim was to assess the relation between early introduction of solid food and infant weight as well as gastrointestinal illness during the first two years of life. The results of this study suggested that the incidence of gastrointestinal illness, wheezing and nappy dermatitis was not related to the early introduction of solids. They also found that among the infants who were given solids early, there was a significant increase in respiratory illness at 14-26 weeks of age and persistent cough at 14-26 weeks and 27-39 weeks.

The incidence of eczema was increased in those infants who had received solids between the ages of 8 and 12 weeks rather than those who received solids at an earlier age. They concluded that early introduction of solid food is less harmful than was previously reported. They also suggest that a longer follow up is needed to confirm these results, however, they advocate a more relaxed approach to the early introduction of solids.

Caution has to be exercised when generalising these results to developing countries where infants receiving solids at an early age, have a higher risk of gastrointestinal infection from inadequate sanitation, impaired nutritional status and poor quality solids (Forsyth et al, 1993: 1576 & Mondal et al, 1996: 1161).

In New Zealand, Fergusson, Horwood &Shannon (1990) followed 1067 children for 10 years

to examine the relationship between early solid feeding practices and the risk of recurrent or chronic eczema. After rigorous investigations, their results suggested that an early diverse, solid food diet may predispose susceptible children to recurrent or chronic childhood eczema. The mechanisms by which early diet may influence risks of eczema are not clear. According to these authors it seems that early exposure to food antigen, produces inappropriate antibody formation. In some children and later predisposes these children to future eczema (Astherton cited by Fergusson et al 1990).

2.3 CONCLUSION

The literature review on infant feeding has demonstrated the superiority of breast milk over artificial prepared milk. Women continue or stop breastfeeding or introduce supplementary feeds, for reasons that are sound to them. Insufficient breast milk or milk of poor quality continues to emerge as reasons for introducing breast milk substitutes. There is no doubt that feeding practices differ from society to society and groups within same society. (Notzon 1984, Wagstaff, de Wet & Anderson 1993, & Delport & Bergh, 1994).

There is some consensus on the initiation and types of supplementation between the research studies discussed. The literature review, however, suggests differing opinions between the health professional's and mother's views on infant crying, milk insufficiency and quantity of breast milk.

In this chapter the infant feeding practices were discussed from 0-9 months with special reference to breastfeeding, initiation and age of supplementation and weaning.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter the researcher presents the research design, area of study, population, sampling technique and the procedure that was used in data collection. Ethical considerations and data collection methods will be discussed.

3.2 STUDY DESIGN

This was a descriptive study with the purpose of investigating weaning practices of mothers or childminders whose children are between the ages 6-9 months of age attending clinics in the inner city of Johannesburg. The research was aimed at collecting and describing data about feeding practices of infants from 0-9 months of age using a standardised interview schedule.

3.3 CHOOSING THE STUDY AREA

The inner city of Johannesburg was selected as a study area. Because of the abolition of influx control laws, in South Africa in 1986 large numbers of Black, Coloured and Indian people migrated to the urban areas. The reason for this rapid influx was the shortage of housing in the areas traditionally designated for Black people (Ferreira, 1990: 1). This influx of people in the Joubert Park area, Hillbrow and inner city has led to concerns about the area becoming a slum because of high population density, fears of ill health and overcrowding (Hlungwane, 1996: 2). The inner city is both a residential and commercial area which suffers from health hazards. Many physical facilities have deteriorated. The business sector has been vacating some premises and

relocating to the suburban areas where the crime rates are lower.

As in most cities, people have occupied these empty buildings. A small percentage of inner city residents comprise illegal immigrants from in and around South Africa. The causes of this wave of migration are complex, most certainly include the relaxation of laws of urban migration, high rural unemployment and economical uncertainty in some African states.

3.3.1 CLINIC SETTING

The three clinics in the study offer similar health services. Each clinic is run by a community health nurse. All three clinics provide comprehensive health care services which include the following:

- health promotion
- immunization
- growth and development monitoring and
- nutritional support

On a typical clinic day a mother or childminder would report to the clinic at the weighing station where the clinic card is issued and the baby's weight is recorded on the card. The mother or childminder would be directed to the community health nurse's room for consultation.

The community health nurse would perform an assessment on growth and development of the infant. The mother or childminder would be interviewed on any concerns or problems that needs to be addressed. The nurse would then offer supportive advice or refer the infant to the appropriate services accordingly.

The correct immunization would be given according to the age of the infant. If the weight of the infant is not satisfactory the mother or childminder is advised to return monthly or given an earlier date for weight monitoring and supportive care. Otherwise the infant would be given an appointment for the next visit according to the age and immunization schedule. This information would then be entered on the infant's Road to Health Card (RTHC - appendix 4).

3.4 DELIMITATION OF THE STUDY AREA

The official demarcation of the inner city established by the Human Sciences Research Council was used (Appendix 1). The inner city area was divided into 10 more or less homogenous sampling domains. The areas around domain 9, 4, and 5 on the map were used. The clinics selected for this study operating on these three domains were Joubert Park, Hoek street and Transvaal Memorial Institute.

- Clinic One was Joubert Park operating on Tuesdays and Thursdays.
- Clinic Two was Hoek Street and children for immunisation were seen on Mondays and Thursdays.
- Clinic Three was Transvaal Memorial Institute operating on Fridays only.

The clinics were visited at different days of the week giving access to all three clinics a different day per week for continuity.

3.5 POPULATION AND SAMPLING METHOD

3.5.1 POPULATION

The study population comprised all the mothers and childminders of the children between the ages of six to nine months attending child health clinics in the inner city of Johannesburg over

a period of six months between March 1997 to September 1997.

3.5.2 SAMPLE AND SAMPLING

Ninety nine mothers and or childminders whose children were between ages six to nine months were conveniently sampled. A convenience sample is the selection of most readily available persons or units as subjects in a study (Polit and Hungler, 1991: 642). The problem with convenience sampling is that available subjects might be atypical of the population with regard to the critical variables being measured. Even though this sampling technique is weak according to Polit and Hungler it is probably the most commonly used when the phenomena under investigation are fairly homogenous within the population and the risk of bias may be minimal. The sample size was determined in consultation with the statistician. The total number of children attending the three child health clinics under the age of 2 years in 1997 over a period of six months was 3 528. The statistician estimated that only 10% of the children would have been within the six to nine months age range and a sample size of 99 was considered sufficiently representative.

All mothers and childminders visiting the clinics whose children were between the ages six to nine months were sampled until approximately ninety nine children reached in the same age group were obtained. An inclusion criterion was that all mothers or childminders from the age of eighteen years and above will be considered suitable for inclusion in the study.

Clinic one was visited on Monday and clinic two visited on Tuesday and clinic three on Friday. The researcher would alternate Thursdays between clinics one and two. For access and continuity the researcher and a research assistant visited the three clinics at a different day per

week. This enabled the researcher to visit clinics one and two at every second week.

3.6 DATA COLLECTION

3.6.1 PROCEDURE

At each clinic the researcher would approach the care giver in the queues before being seen by the clinic staff. Each person was handed the information sheet explaining the purpose of the study and requesting their participation (Appendix 2). No care giver in the appropriate age range refused to participate.

3.6.2 INSTRUMENT

For the purpose of the study an interview schedule was designed to provide information on weaning practices from 0-9 months. The interview schedule (Appendix 3) was selected as an appropriate tool for gathering data because of the literacy levels of some of the mothers or childminders attending the clinic in the inner city. According to Polit and Hungler (1991: 279) in an interview schedule all subjects are asked to respond to exactly the same questions, in the same order.

The interview schedule was divided into two sections.

3.6.2.1 Part 1

This section was used for collecting data on the demographic variables of the family. The following items were included:

- date and place of birth
- number of children at home

- occupation of mother and father
- age of the mother and father
- level of education for both mother and father

3.6.2.2 Part 2

This section of the interview schedule consisted of questions designed to establish the early feeding practices from 0-3 months and 4-6 months. The late feeding practices included a variety of feeding foods and energy producing foods. Additional information was included to elicit morbidity health profile, birth weight, and record of immunisation coverage within the first nine months of life. The birth weight was recorded on the Road to Health Card (RHTC) (Appendix 4). A road to health card is a comprehensive record that is issued to the mother of every newborn baby in South Africa. It contains information about the infant from birth to five years of age. The following data are included in the card:

- information about ante natal, perinatal and the immediate post natal period
- immunization and
- growth and development

The purpose of this card is to determine and promote adequate growth, detect children at risk and introduce the concept of comprehensive health care to families. The mother or childminder is expected to produce this card every time the infant visits a health care service provider until the child is five years of age.

3.7 PILOT STUDY

The researcher piloted the interview schedule on ten mothers or childminders who did not form part of the main study but met the criterion for inclusion. The interview schedule was administered in English and in the home language of the informant. The researcher is fluent in six languages. No changes were indicated.

3.8 DATA GATHERING METHOD

The interview schedule was administered by the researcher and research assistant to respondents in all three clinics. The research assistant was trained in the use of the interview schedule as the clinic had to be visited at each day of the week.

The letter explaining the purpose of the research was given to each respondent and written consent to participate in the study was obtained. Those respondents who could not read or write had the purpose explained by the researcher and research assistant. The interview schedule was completed by the researcher or research assistant. A total of ninety nine were completed.

3.8.1 VALIDITY AND RELIABILITY

The researcher presented the interview schedule to experts in the field for the purpose of detecting ambiguity of the wording, inappropriate and inadequate responses and any other flaws in the instrument.

For the inter-rater reliability the research assistant was trained in the use and interpretation of the interview schedule. The researcher spent one week at the clinics training the research assistant in asking the questions and recording of the participant's responses while co-interviewing the participants. At the end of each day the researcher and the research assistant

would compare their recording of patient's responses for consistency. According to Polit and Hungler (1991: 372) the inter-rater observer reliability is estimated by having two or more trained observers watching some event and independently recording the variables according to predetermined plan or coding system.

A correlation coefficient was not computed as the questions were standardised but a 100% agreement was obtained between the researcher's recorded responses and the responses that were recorded by the research assistant.

3.9 ETHICAL CONSIDERATIONS

A clearance certificate to carry out the study was obtained from the Committee for Research on Human Subjects at the University of the Witwatersrand (Appendix 5).

The protocol for the study was presented to the Post Graduate Committee of the University of the Witwatersrand and a letter of approval was received from the committee (Appendix 6).

An ethical clearance letter was received from the Deputy Director-Head of Epidemiology and Health Management Information System in the Greater Johannesburg Transitional Metropolitan Council (Appendix 7).

Verbal permission was sought and received from the Nursing Service Managers to interview the mothers in the clinics in the inner city.

Participants were given full information about the study and a consent form signed (Appendix 7).

Those who could not write put an "X" sign on the form as an indication for willingness to participate. Participation was voluntary. To ensure anonymity during data collection the informant's names were not written on the interview schedule. Only numbers were used to identify the interview schedules.

During the interview the researcher noted that in some women, the amount of feeds given to the babies was insufficient for the age and those participants were referred to the clinic professionals as the researcher could not intervene as the clinician in the situation.

3.10 CONCLUSION

In this chapter, the methods and procedures were discussed. Details of the interview schedule used were outlined. Methods of data gathering and analysis were explained. Ethical considerations were addressed.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 INTRODUCTION

In this chapter the findings of this study will be presented according to response variables and an association will be made. The data generated by the interview schedule were analysed using descriptive statistics. The analysis is set out in part one and part two.

4.2 ANALYSIS OF DATA

Descriptive statistics were used to summarise, organize and present the data. Data were analysed using EPI INFO version 6 and Statistical Package SAS. Data were sorted out into categories and graphic presentation made for interpretation of findings (Polit and Hungler, 1991: 406). The statistical significance of association of relationships was listed using chi-square and t-tests (significance level set at $p = 0.05$). Further analyses were done using the Statistical Package SAS. Associations were initially examined using chi-square test. Further investigation of relationships was done by fitting logistic regression models. The variables were categorised as either being response or explanatory variables.

Two way cross tabulations were made of the explanatory variables against the outcome variables. The tables reflect observations and not conclusions. Finally, associations were further investigated through fitting multiple logistic regression models.

The findings of this study relate to the research objectives which guided the research process.

Factors which were likely to influence the feeding practices such as economic status and education of the parents were included. Weaning practices were divided into early 0-3 months and 4-6 months as well as late feeding 6-9 months.

Data were obtained from personal interviews conducted with 99 mothers and or childminders. Additional information was obtained from the infant's Road To Health Card (RTHC). The road to health card was used to confirm the age, health status, growth and development of the infant.

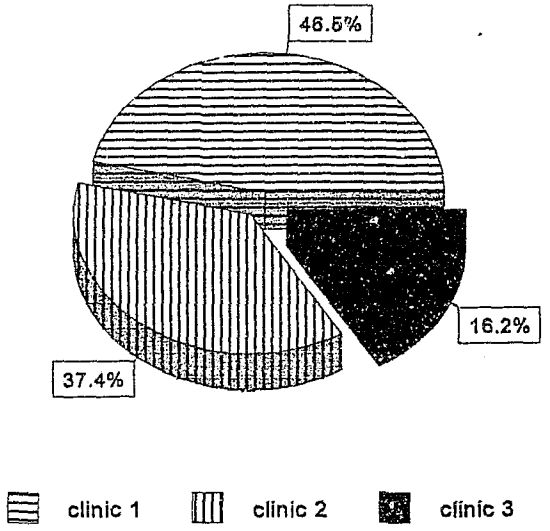
The most significant results will be presented in the following sections relating to part one and part two.

4.2.1 PART 1 - DEMOGRAPHIC DATA

Specific variables to be considered in this section were:

- clinic
- interviewee
- gender
- place of birth
- birth order
- number of children in the household
- age of the mother or child-minder
- major financial provider in the household
- employment and education of mother and father

Data yielded the following findings :



(n = 99)

Figure 4.1 Clinics where children were seen

Forty six point five percent of children were seen in clinic one while 37.4% (37) were seen in clinic two and 16.2% (16) from clinic three. The clinic attendance for clinics one and two were two mornings per week and clinic three provides services for only one morning session per week for immunization.

Table 4.1 Relationship of interviewee to the child

Interviewee	Frequency	Percent
Mother	78	78.8
Other	21	21.2
Total	99	100

In Table 4.1 it is shown that 78. 8 % of the respondents were mothers who had brought thier infants to the clinic whereas 21.2% of respondents were childminders. A childminder would be a person who looks after the baby for most part of the day in the absence of mother including other family members at the child's home. Childminders in traditional African households become part of the family as they live in the same house as the child. An inclusion criteria for childminders was eighteen years and above.

Table 4.2 Sex of the children

Gender	Frequency	Percent
Female	62	62.6
Male	37	37.4
Total	99	100

Respondents were asked to indicate the sex of the child. Table 4.2 shows that 62.6% of children in the sample were females and 37.4% were males.

Table 4.3 Place of birth of child

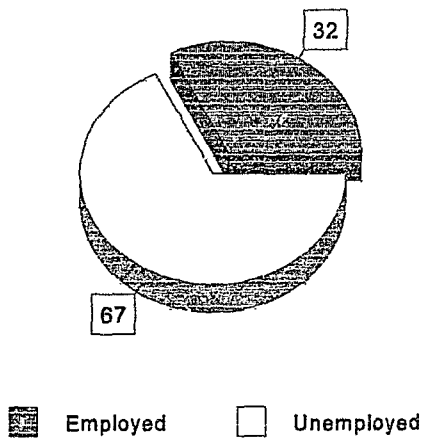
Place of birth	Frequency	Percent
Johannesburg	68	68.7
Soweto	11	11.1
Other	20	20.2
Total	99	100

Although the majority of infants were born in the Johannesburg area (68.7%), 11.1% were born in Soweto and 20.2% were born outside Gauteng. The place of birth is significant for the type of information and support offered about feeding. According to MacKeown, Cleaton -Jones & Perdraut (1996 : 156) social conditions of the family can be associated with lower or higher intakes of energy and different nutrients and food items. These authors cite socio-economic factors, aspects of family life such as emotional climate, parent's constitution, family's social network as determinants of eating patterns during childhood.

Table 4.4 Birth order of children

Birth Order	Frequency	Percent
1	34	34.3
2	38	38.4
3	14	14.1
4	9	9.1
5	4	4.1
Total	99	100

Respondents were asked to indicate the birth order of the child. In this table it is shown that the majority of women had previous experience on infant feeding as evidenced by 38 children (38.4%) who were second children, 16 (14.1%) were third in the family, 9 were fourth and 4 were fifth or greater. Only 34 (34.3%) were firstborn children.



(n= 99)

Figure 4.2 Employment status of mothers

When all the respondents were asked about the employment status of the baby's mother, the data showed that 67,7% of mothers were unemployed and 32, 3% were employed.

Table 4.5 Education of the mother/childminder

Education	Frequency	Percent
None	3	3.1
Primary	12	12,2
Junior Secondary	16	16.3
Senior secondary	54	55.1
Tertiary	13	13.3
Total	98	100

Table 4.5 gives the educational status of the mother and or childminder. More than half (55.1%) of respondents had completed senior secondary education while 13,3% had completed tertiary education, 12,2% had completed primary education and only 3,1% had no formal schooling.

Table 4.6 Age of mothers and or childminders

Age	Frequency	Percent
<20 years	6	6.1
20-30 years	61	61.6
30-40 years	32	32.3
Total	99	100

The majority of the respondents (61.6%) fell into the category of 20-30 years, 32.3% fell into the 30-40 year age group. Only 6 1% of respondents were under 20 years of age and the inclusion criterion was eighteen years. This implies that the majority of women in the sample (67.7%) were below the age of 30.

Table 4.7 Person who lives with mother

Father	Frequency	Percent
Father	75	75.8
Other	24	24.2
Total	99	100

When the respondents were asked to indicate the person who lives with the mother 75.8% of the mothers live with the father of the child and 24.2% of the mothers live alone, with parents, family or friend.

Table 4.8 Major financial provider for the mothers

Financial Provider	Frequency	Percent
Father	81	81.8
Other	18	18.2
Total	99	100

Table 4.8 indicates that the major financial support is provided by the father of the child (81.8%) and 18.2% of women receive financial support from someone else other than the father of the child. This to be expected with the majority of women unemployed.

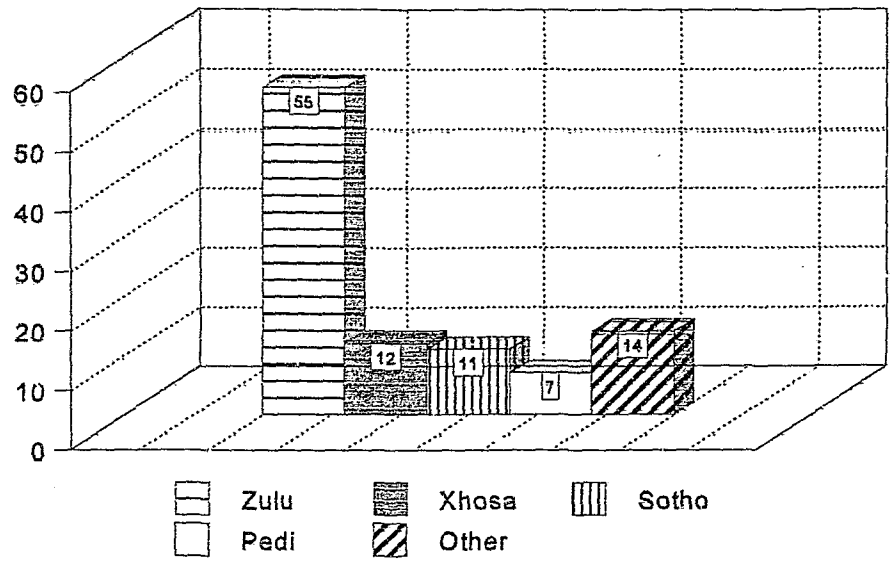


Figure 4.3 Ethnic groupings

At the time of the interview 55.5% (55) of respondents were from the Zulu ethnic group and 11.1% (11) were from Sotho group, 12.1% (12) were from Xhosa background, 7.1% (7) were from Pedi background while 14.2% (14) were from the other ethnic groups from neighbouring African countries. Home language was used to determine the ethnic groupings. From this description we can see that the sample comprised women from diverse groups reflecting ethnic and social background.

Table 4.9 Number of children in the household

Number of children	Frequency	Percent
1	28	28.6
2	22	22.4
3	11	11.2
4 or more	37	37.8
Total	98	100

Table 4.9 indicates that the 37.8% of mothers had 4 or more children in the household and 28.6% were first born children. From this table it can be inferred that the majority of women (71.4%) had previous experience in weaning practices.

Table 4.10 Employment of the father of child/ spouse of mother

Employment	Frequency	Percent
Unemployed	65	65.7
Employed	34	34.3
Total	99	100

More than half of the fathers (65.7%) in the sample were unemployed and only 34.3% were employed. According to Table 4.8 the major financial support (81.8%) was provided by the father. The figures in Tables 4.8 and 4.10 cannot be reconciled; the researcher can only speculate that the fathers received income from alternative sources other than from a regular job.

Table 4.11 Education [illegible] rs

Education	Frequency	Percent
None /Primary	24	24.3
Junior Secondary	10	10.1
Senior Secondary	52	52.5
Tertiary	13	13.1
Total	99	100

Table 4. 11 indicates that 52.5% of the fathers had a senior secondary education while 24.3% had primary or no education at all. Only 13.1% had tertiary education. The remaining 10.1% had a junior secondary education. This means that 65.3% of the fathers had matriculation and higher education certificates.

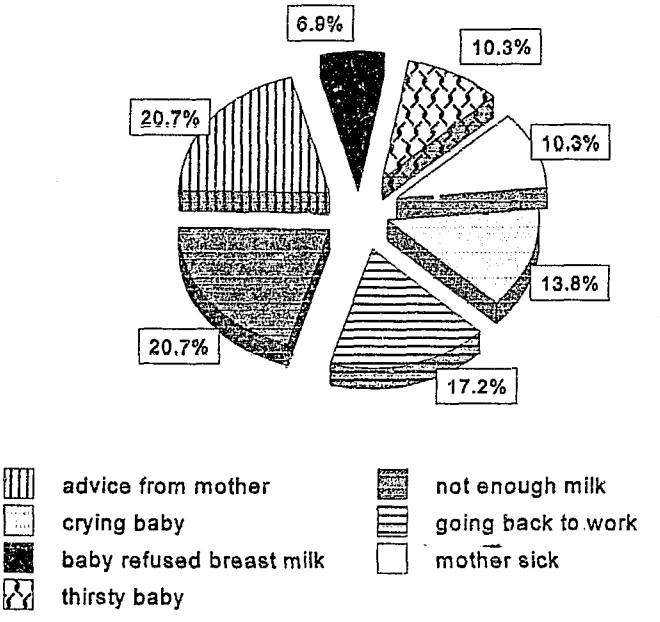
3 PART 2 - EARLY FEEDING PRACTICES

4.3.1 BREASTFEEDING

When both childminders and mothers were asked to indicate if the babies were given breastfeeds at birth the majority (71%) of all mothers gave breast milk at birth and 29% fed their infants with something other than breast milk (Table 4.12).

Table 4.12 Breastfeeding at birth

Breastfeeding	Frequency	Percent
Yes	70	71
No	29	29
Total	99	100



(n = 29)

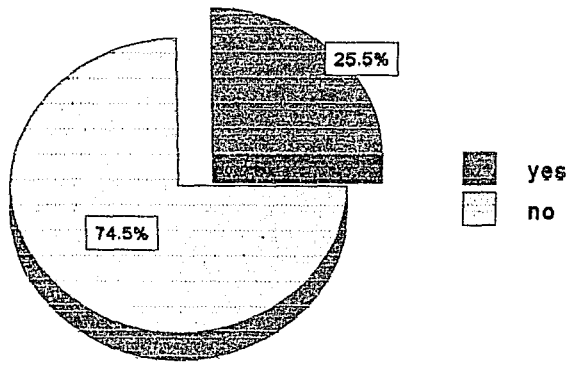
Figure 4.4 Reasons for not breastfeeding at birth

Those mothers who did not breastfeed at birth (n =29) gave variety of reasons for not breastfeeding their babies. Figure 4.4 shows that the most frequent reason given for not breastfeeding was evenly distributed between advice from own mother and not enough breast milk (20.7%) each; 17.2% (5) of respondents were not breastfeeding because they were preparing to go back to work; 13.8% (4) reported that their infants were crying a lot indicating that the babies were hungry. Ten point three percent (3) had given other milk feeds because the mother was not breastfeeding because of ill health while another 10.3% (3) had a problem with a thirsty baby and the remaining 6.9% (2) reported that their infants refused breast milk.

Table 4.13 Other feeds given

Other feeds	Frequency	Percent
Glucose	12	32.4
Gripe water	7	18.9
Milk formula	17	46
Other	1	2.7
Total	37	100

The results indicate that 37 infants were given some feed other than breast milk within the first three months. Forty five point nine percent had a formula feed while 32.4% were given a glucose feed; 18.9% of infants were given gripe water and 2.7% were given other feeds e.g. water from church. This is 'holy water' collected from church given to children to protect them against evil spirits.



(n = 99)

Figure 4.5 Exclusive breastfeeding

Figure 4.5 shows that 74.5% (74) of the children in the study received a combination of breastfeeds with other milk formulas and only 25.5% (25) of children were exclusively breastfed from birth to four months.

Table 4.14 Baby breastfeeding at age 6 -9 months

Breastfeeding now	Frequency	Percent
Yes	55	59.1
No	38	40.9
Total	93	100

In response to the question whether the baby was breastfeeding at the time of the interview (6-9 months), more than half (59.1%) of the sample were still breastfeeding while 40.9% had stopped breast feeds.

4.4 RELATIONSHIPS BETWEEN VARIABLES

4.4.1 INVESTIGATIONS USING CROSS TABULATIONS

Table 4.15 Association between present breastfeeding and clinic attended

Clinic	Breastfeeding at present				Total
	Yes		No		
1	23	(53.2%)	21	(47.7%)	44
2	25	(71.4%)	10	(10.6%)	35
3	7	(50%)	7	(50%)	14

Chi Square = 3.53 on 2 df.
P = 0.17
Fisher's exact P= 0.18 (not significant)

Table 4.15 shows a cross tabulation of breastfeeding at the time of interview and clinic attended. Statistically there was not much evidence of association between breastfeeding and clinic attended. The difference between clinics could have arisen by chance. It appears from this data that clinic two ' 1 a highest breastfeeding rate at 71.4%.

Table 4.16 Association between breastfeeding and sex of baby

Gender	Breastfeeding		Total
	Yes	No	
Females	45 (73.7%)	16 (26.2%)	61
Males	26 (70.3%)	11 (29.7%)	37
Total	71	27	98

Chi Square = 0.14 on df.
P = 0.71
Fisher's exact P = 0.82 (not significant)

There is no evidence of an association between gender and breastfeeding. Boys and girls seem equally likely to be breastfed.

Table 4.17 Association between employment of mother and breastfeeding at birth

Employment	Breastfeeding		Total
	Yes	No	
Employed	22 (69%)	10 (31%)	32
Unemployed	50 (74.6%)	17 (25.4%)	67
Total	71	27	99

Chi -Square = 0.50 on 1 df.
P = 0.48
Fisher's exact P = 0.48 (not significant)

There is no significant difference in breastfeeding at birth between employed and unemployed mothers.

Table 4.18 Association between unemployment and breastfeeding at the time of interview

Employment	Breastfeeding				Total
	Yes		No		
Employed	21	(67.7%)	10	(32.3%)	31
Unemployed	50	(74.6%)	17	(25.4%)	61
Total	71		27		98

Chi Square = 5.70 on 1 df.
P = 0.017
Fisher's exact = P= 0.025

Table 4.18 shows a cross tabulation between the duration of breastfeeding and employment of mothers. The Chi-square of 5.70 on 1 d. f. (p = 0.017) denotes that the unemployed mothers are significantly more likely to breastfeed at age six to nine months when compared to employed mothers.

Table 4.19 Breastfeeding and age of mother

Age	Breastfeeding				Total
	Yes		No		
<20 years	4	(66.7%)	2	(33.3%)	6
20-30 years	42	(69%)	19	(31%)	61
30-40 years	26	(81,2%)	6	(18.8%)	32
Total	71		27		99

Chi Square = 1.64 in 2 df.
P = 0.44
Fisher's exact P= 0.49 (not significant)

The age of the mother is not a significant factor in breastfeeding.

Table 4.20 Association between breastfeeding and the number of children in the household

Number of children	Breastfeeding				Total
	Yes		No		
1	18	(66.6)	9	(33.3)	27
2	15	(68.1)	7	(31.8)	22
3	9	(81.8)	2	(18.1)	11
4	28	(75.7)	9	(24.3)	37
Total	70		27		

Chi Square = 1.32 on 3 df.
P = 0.73
Fisher's exact P = 0.76 (not significant)

Table 4.20 shows that breastfeeding does not depend on the number of children in the house.

Table 4.21 Association between breastfeeding and education of the mother

Education	Breastfeeding				Total
	Yes		No		
None / Primary	15	(62.5%)	9	(37.5%)	24
Junior Secondary	8	(80.0%)	2	(20.0%)	10
Senior Secondary	38	(74.5%)	13	(25.5%)	51
Tertiary	10	(76.9%)	3	(23.1%)	13
Total	71		27		98

Chi Square = 7.50 on 3 df.
P= 0. 058
Fisher's exact P= 0. 065 (not significant)

Table 4.21 shows some evidence of association (p =0.065) between breastfeeding and education. In this table we note that women with some education are likely to breastfeed their infants in comparison to women with little or no education.

4.4.2 MULTIPLE LOGISTIC REGRESSION MODELS

A logistic regression model was fitted to determine which factors influence breast feeding at birth. The factors considered were clinic, place of birth, age of the mother and the socio-economic status of both the mother and father of the child. None of these were found to be statistically significant in the model. A small sample size of 99 did not have the power to detect significant difference between subgroups.

4.5 SUPPLEMENTARY FEEDING

Table 4.22 Bottle feeding within the first 3 months

Bottle feeding	Frequency	Percent
Yes	46	49.5
No	47	50.5
Total	93	100

Table 4.22 shows that 49.5% of the respondents gave bottle feeds at three months and 50.5% did not give bottle feeds at three months.

Table 4.23 Age of baby when given first bottle

Age at first bottle	Frequency	Percent
1st week	24	43.6
2nd week	3	5.5
3 weeks	1	1.8
1 month	18	32.7
3 months	9	16.4
Total	55	100

The results indicate that most respondents (43.6%) gave the first bottle feed to their infants during the first week of life. By one month forty six infants had had their first formula feed (83.6%). More than half of total sample (55) gave bottle feeds before the infants were four months.

4.5.1 RELATIONSHIPS

4.5.1.1 Using two-way tables

Table 4.24 Association between bottle feeding and clinic

Clinic	Bottle feeding		Total
	Yes	No	
1	20 (46.5%)	23 (53.5%)	43
2	17 (48.6%)	18 (51.4%)	35
3	9 (60.0%)	6 (40.0%)	15
Total	46	47	93

Chi -Square = 083 on 2 d. f.
P = 0.66
Fisher's exact P= 0.73 (not significant)

In this table there is no evidence that bottle feeding differs between clinics.

Table 4.25 Association between bottle feeding and employment

Employment	Bottle feeding		Total
	Yes	No	
Yes	20 (66.7%)	10 (33.3%)	30
No	26 (41.3%)	37 (58.7%	63
Total	46	47	93

Chi-Square = 5.24 on 1 df.

P = 0.022
Fisher's exact P= 0.027

There is strong evidence that women who are employed are more likely to bottle feed than women who are not employed.

Table 4.26 Association between bottle feeding and the person who lives with the mother

Person who lives with mother	Bottle feeding		Total
	Yes	No	
Father	30 (42.2%)	41 (57.8%)	71
Other	16 (72.7%)	6 (27.3%)	22
Total	46	47	93

Chi Square = 6.24 on 1 df.
P = 0.012
Fisher's exact P=0.015

Table 4.26 shows a strong evidence on 1 d f (p=0.012) that mothers who live with the father of the infant are less likely to bottle feed their infants.

Table 4.27 Bottle Feeding and Financial Support

Financial Support	Bottle feeding		Total
	Yes	No	
Father	35 (45.5%)	42 (54.5%)	77
Other	11 (68.8%)	5 (31.2%)	16
Total	46	47	93

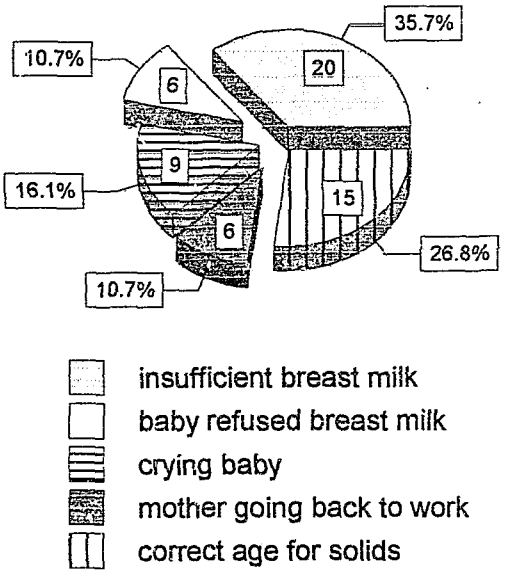
Chi Square = 2.88 on 1 df.
P = 0.09
Fisher's exact P= 0.106

There is slight evidence (p= 0.10) that mothers who get financial support from "another person" are more likely to bottle feed than mothers who get financial support from the father. This relates to the result of Table 4.27, as mothers who live with another person are likely to get financial support from that person

Table 4.28 Solids by 3 months

Solids	Frequency	Percent
Yes	56	57
No	43	43
Total	99	100

Table 4.28 shows that 57% of infants had solid food in the first three months of life.



(n = 56)

Figure 4.6 Reasons for giving solids by 3 months

In this figure twenty infants were given solids within the first three months because their mothers had insufficient breast milk. Six respondents reported that their infants refused breast milk. Six women reported going back to work as a reason for early supplementation. Nine women gave solids early because their infants were crying. The rest (26.8%) reported that the age of the infant was appropiate for introduction of solids.

4.6 INFANT FEEDING PRACTICES 4-6 MONTHS

Table 4.29 Type of solid food given first

Type of food	Frequency	Percent
Maize meal porridge	23	29.3
Purity (commercial bottled infant food)	59	59.5
Maltabella (sorghum porridge)	1	1.0
Tasty Wheat (semolina porridge)	7	7.0
Fruits	1	1.0
Oats	2	2.2
Total	99	100

The majority (59.5%) of infants were fed with Purity foods as their first food followed by maize meal porridge at 29.3%. The researcher expected the maize meal porridge to be the first choice of the majority of mothers as it is the staple food of many African cultures especially with the high unemployment rate in the inner city.

Table 4.30 Reasons for first choice of solid food

Reasons	Frequency	Percent
Suitable for age	23	41
Inexpensive	5	9
Available at home	4	7.1
Advice from family	3	5.4
Advice from health professional	4	7.1
As advertised	17	30.4
Total	56	100

Forty one percent of respondents gave solids to their infants before they were three months

because the food was suitable for the age, 30.4% believed that the food was appropriate because of the manufacturer advertisement and labels. Only 7.1.% of respondents fed their infants food that was available at home and suitable for age of child, 5.4% followed the advice on feeding from the family members and 7.1% were advised by health professionals.

Table 4.31 Type of food not given to a baby who is less than 3 month old

Type of food	Frequency	Percent
Purity commercially bottle feeds	13	13.4
Cereals	13	13.4
Maize meal porridge	15	15.5
Chewable	56	57.7
Total	97	100

When respondents were asked to indicate which type of food they would not give to an infant of less than three months, more than half (57.7%) of respondents stated that foods which require chewing should not be given to an infant of less than three months.

Table 4.32 Cooking of baby food at home

Home Cooking	Frequency	Percent
Yes	37	37.8
No	61	62.2
Total	97	100

The majority of respondents (62.2%) in the inner city preferred commercially prepared weaning such as bottled vegetables and fruits to cooking and preparing the food at home.

Table 4.33 Method of feeding baby

Method of feeding	Frequency	Percent
Teaspoon	76	77.6
Cup	5	5.1
Bottle	13	13.3
Hand	4	4.1
Total	98	100

Respondents were asked to indicate how they were feeding their infants. Even though the majority of respondents (77.6%) were using teaspoons to feed their infants, 4.1% used their hands to force feed the infant. Only 5.1% fed their infants using a cup. Thirteen point three percent would liquify the food and add it to the bottle for the infant to suck.

4.6.1 RELATIONSHIPS

4.6.1.1 Using two-way tables

Table 4.34 Association between cooking at home and number of children at home

Number of children	Cooking at home		Total
	Yes	No	
1	7 (26%)	20 (74%)	27
2	8 (36.3%)	14 (63.6%)	22
3	6 (54.5%)	5 (45.5%)	11
4	16 (43.2%)	21 (56.8%)	37
Total	37	60	97

Chi-square =3.40 on 3 df.
P = 0.33
Fisher's exact P = 0.33 (not significant)

There is no evidence that cooking at home depends on the number of children in the home.

Table 4.35 Association between home cooking and education of mothers

Education	Cooking at home		Total
	Yes	No	
Primary	5 (33.3.%)	10 (66.7%0	15
Junior Secondary	8 (50.0%)	8 (50.0%)	16
Senior secondary	22 (40.7%)	32 (59.3%)	54
Tertiary	2 (15.4%)	11 (84.6%)	13
Total	37	61	98

Chi Square = 4.12 on 3 df.
P= 0.25
Fisher's exact P= 0.25 (not significant)

There is no evidence of an association between education mothers and home cooking.

4.7 INFANT FEEDING AT 6-9 MONTHS OF AGE

Table 4.36 Breakfast

Breakfast	Frequency	Percent
Maize soft porridge and milk	90	90.9
Cereals and milk feed	9	9.1
Total	99	100

A high percentage (90.9%) of infants between the ages of six to nine months were fed with maize meal soft porridge for breakfast followed by a milk feed while 9.1% had a cereal feed and milk.

4.8 LUNCH TIME FEEDING

Table 4.37 Lunch time feeds

Lunch time feeds	Frequency	Percent
Pap with meat and vegetables	29	29.3
Vegetables and eggs	12	12.1
Cereals and milk	10	10.1
Bottled weaning foods	48	48.5
Total	99	100

When respondents were asked to show what they would feed their infants at lunch time, 48% of the infants were fed with bottled commercially weaning foods for lunch while the 29.3% had a combination of meat, pap (stiff maize meal porridge) and vegetables. 12.1% had vegetables and eggs and milk while 10.1% had cereals and milk.

Table 4.38 Supper time feeding

Supper	Frequency	Percent
Pap with meat	30	34.3
Vegetables	20	20.2
Cereal and milk	20	20.2
Family dinner	15	15.2
Bottled weaning foods	14	10.1
Total	99	100

When the respondents were asked to indicate the type of food they will feed the babies at dinner time, the variety of feeds given to infants at dinner time is similar to that given at lunch time.

Table 4.39 The source of information for weaning

Where did you learn	Frequency	Percent
Health worker	58	59.2
Television	5	5.1
Radio	7	7.1
Books and magazine	28	28.6
Total	98	100

In response to the question where respondents learnt about infant feeding, more than half (58%) of mothers or childminders had followed the advice given by a health professionals. Forty point eight percent of respondents used different media sources of information for feeding their infants.

Table 4.40 Advice from health professional with which mother does not agree

Advice from health professionals	Frequency	Percent
Yes	10	10.3
No	86	88.7
Total	96	100

The majority of respondents (88.7%) had no problem with the information given by health workers on weaning. Only 10.3% of respondents disagreed with some information offered to them by health professionals at the clinic.

Table 4.41 Association between employment of mothers and sickness of baby

Employment of mother	Sick / Hospitalization		Total
	Yes	No	
Yes	25 (78.1%)	7 (21.9%)	32
No	39 (58.2%)	28 (41.8%)	67
Total	64	35	99

Chi-Square = 3.76 on 1 df.
P = 0.053
Fisher's exact P= 0.07

There were sixty four children that were reported being sick or hospitalised. Of the sixty four, twenty five belonged to employed mothers and thirty nine for unemployed mothers.

The data in table 4.42 shows that employed mother's babies are more likely to have been sick or hospitalised (78.1%) as compared with unemployed mothers (58.2%).

4.9 CONCLUSION

The results of the data relating to weaning practices were presented using Tables, Pie Charts and

Bar Graphs. In chapter five these results will be discussed in detail.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 INTRODUCTION

In chapter four the results of the study were summarised and presented. In this chapter findings of the study will be discussed and interpreted.

5.2 DISCUSSION OF RESULTS

The main findings will be discussed.

5.2.1 DEMOGRAPHIC DATA

The questions in this section were asked to determine whether various socio-economic and demographic factors were related to infant feeding and weaning practices during the first nine months of life. The information collected about socio -economic factors included:

- main sources of income for the mother and baby
- number of children in the household
- employment status of both the mother and father
- age of the mother.

5.2.2 WEANING PRACTICES

5.2.2.1 0-3 months breastfeeding

In this study the aim was to establish the weaning practices of women attending clinic in the inner city. The data that were gathered from mothers and or childminders included recall of information

about feeding practices from birth to nine months for each child interviewed. The data were categorised and arranged according to different feeding patterns for different age groups i.e. 0-3 months, 4-6 months and 6-9 months.

From the literature, the weaning period or transitional period is categorised as the dangerous period for the infant because the anti-infective properties of breast milk are progressively diluted and being replaced by food which have lower energy density (Dyke, 1994).

At the same time the infant's immune system is challenged by a variety of new and potentially dangerous infectious agents. The preparation of most weaning food is done by adding boiling water which is reasonably expected to destroy the heat sensitive organisms. However, poor cooking and poor hygienic practises such as contamination from utensil handling will result in re-contamination of food (Dyke, 1994, Wagstaff & Kibel, 1991: 84).

The aim of weaning the infant is to ensure that the momentum of growth and development initiated by breast milk is sustained. The weaning phase implies the gradual replacement of breast milk with other forms of nourishment. The process could take up to thirty six months.

From the age of six months the infant's iron stores accumulated during gestation start to diminish. The protein content of breast milk will start to drop at about nine months (de Muelenaere, 1997).

In this study questions 1.1 -1.7 were asked to obtain information on what the baby was fed during the first three months of life and sought to establish milk feeding practices.

At birth, breastfeeding was initiated by most mothers (71%). By four months the prevalence of exclusive breastfeeding was lowered to 25,5%. In clinic one, more than half (52.3%)of infants continued to be exclusively breastfed while in clinic two, 71.4% of infants were bre. :fed and in clinic three, only 50% of mothers were still breastfeeding at four months.

The rate of exclusive breastfeeding found in this study is distressingly low even though similar findings were reported in Cape Town (Hoffman et al 1985, Van Staden et al, 1995). The WHO recommends exclusive breastfeeding for four to six months. The findings on breastfeeding in this study compare well with findings of Hoffman et al, 1984 and Van Staden et al, (1995) in similar comparable communities. Few women (25,5%) practised exclusive breastfeeding. In the earlier report from the "Birth to Ten" study, Wagstaff and Ellison (1997) found that the average period for exclusive breastfeeding in the inner city was eleven weeks.

According to Saarinen and Kajosaari (1995) exclusive breastfeeding for the first four to six months provides benefits to infants that extend to adulthood. It is important that women are encouraged to practice exclusive breastfeeding because of these benefits to children.

5.2.2.2 Age of the mother

The results obtained in this study indicate that there is no relationship between the age of the mother and breastfeeding. In the 30-40 years category the breast feeding rates were 81,2% when compared to 68.3% in the 20-30 year group and 66.7% in the under 20 years of age. In the previous studies the researchers observed that the younger mothers breastfeed for a shorter time (Kurinij et al, 1988, Ford & Labbok 1990). Tarkka et al, (1999) observed that the duration of breastfeeding for the younger mothers was lower and married mothers breastfed their infants for

a longer period when compared to the unmarried mothers.

5.2.2.3 Unemployment

The relationship between unemployment and breastfeeding revealed that mothers who are unemployed (74.6%) in the inner city will breastfed their infants for a longer period when compared to those who are employed. It would appear that the duration of breastfeeding is longer for unemployed ($p = 0.017$) mothers when compared with employed mothers.

This finding is consistent with the breastfeeding data obtained from the Birth to Ten study (BTT) in Soweto-Johannesburg which found that 93% of 1800 African mothers still breastfeed their children at one year of age (Wagstaff, de Wet & Anderson, 1993).

Twenty seven percent of mothers who did not breastfeed their infants gave the following reasons:

- advised against breastfeeding by own my mother
- not enough breast milk
- crying baby
- mother going to work
- correct age

Only two mothers in the total sample were advised against breastfeeding because of ill health. In the Birth to Ten study Wagstaff et al (1993) observed that the mothers seldom acknowledged the clinic staff as a source of information or influence in relation to their breastfeeding choices and practices. In the same research the mothers did note, however, the role of the community health sisters in advising and providing assistance with bottle feeding. The recommendations of

the WHO and UNICEF's " Ten Steps to Successful Breastfeeding" which stipulate that the infant should be given breast milk only in the first four months of life are far from being realised in the inner city.

Twelve infants in the sample were given glucose water while seven infants had gripe water. According to Wagstaff and Kibel (1991) the practice of giving newborn babies water with or without sugar may introduce infection to the baby and it is also counter-productive to the stimulation of breast milk through suckling. Mixing breastfeeds with other feeds diminishes the effects of breast milk for the infant. Coovadia and Wittenberg (1998: 170) argue that partial breastfeeding is better than no breastfeeding when considering the nutritional value of breast milk.

Infant crying appears to be the stimulus for feeding by the mothers. The interpretation of the behaviour of crying by the mothers is used as an indicator for hunger and the mothers respond with feeding to calm the infant.

5.3 BREAST MILK SUBSTITUTES

The perceptions of breast milk insufficiency and a crying baby result in substituting the breast milk with bottle. The commonest breast milk substitute given to babies was Nan (46%). Of those infants who were given milk substitutes, forty five percent received infant formulas before they were one month old. In this study there is a strong evidence that mothers who live with the father of the baby are less likely to bottle feed their infants ($p= 0.012$).

Early introduction of milk formulas by African woman has been reported in several studies (Ross,

van Middelkoop and Khoza, 1983), Richter (1994) in Soweto, found that 63% of babies were receiving breast milk substitutes by two months. Ross, Loening and van Middelkoop (1983) reported that the approximate mean age for the introduction of formula feeds in their Natal sample was 5 weeks. In Cape Town, Hoffman, Duncan and Disler (1984) observed that 47% of their sample was receiving bottle feeds by the age of 6 weeks.

Only 17.2% of respondents reported returning to work as a factor accounting for the early introduction of feeds and similar results have been reported in earlier studies (Richter, 1994, Van Middelkoop, Ross and Khoza, 1983). The quantity of breast-milk was given as a reason for introducing milk formula and 20.7% of respondents reported breast milk insufficiency as a reason for supplementation.

Literature suggests that women will introduce supplementary feeds according to their own perceptions of the child's needs and the woman's ideas about when a child is ready for other foods (Richter, 1994, WHO, 1981). In this study 32.4% of infants were given a glucose feed and 18.9% had gripe water. Richter (1994) found that the quantities of water given to babies can vary from 100 mls to 300 mls. Seventy two mothers used the bottle as the method of feeding. In this Soweto sample there were varied substances that the mothers used to add on the water ranging from gripe water (25.5%) to traditional medicinal substances. The reasons given by the mothers (10%) was that water would prevent wind and discomfort. Richter (1994) also observed that three women added other substances to milk formulas such as calcium and special ash obtained from church. The ash is given to drive the evil spirits away.

Studies done in other countries revealed similar findings on breast milk substitutes. In Kenya,

Kusin, Kardjati and van Steenbergen (1985) report that mothers express the belief that infant formula, given in addition to breast milk, will make a baby bigger and stronger.

In the same study the authors noted that the mothers often reported that when infants cry too often and is fed solely on breast, it must be hungry. In response to this behaviour the mothers will give breast milk substitute. The early supplementation of breast milk increases the risk of diarrhoea for the infants (Popkin et al, 1990: 877).

5.4 SOLIDS AT 3 MONTHS

The majority (53.6%) of infants were already eating solids by the three months of age. Reasons given included:

- fifteen infants (26.8%) were given solids because it was the appropriate age for introduction of solids.
- twenty women (35.7%) gave solids because of breast milk insufficiency.

In response to the question: which solids would not be given to a baby of less than three months, a substantial number (57.7%) reported they would not give foods which require chewing. It appears that the women will continue to feed the infant solids at three months if the texture is perceived "right". Only forty one women (42.3%) were aware of which foods not to feed to infants of less than three months. Foods such as soft maize meal, cereals and purity foods were mentioned as examples of food which should not be given to an infant of less than three months.

5.5 FEEDING PRACTICES BETWEEN 4-6 MONTHS

The majority (62.2%) of respondents preferred commercially prepared weaning foods to cooking

meals at home. A high percentage (63.4%) of infants were fed with Purity bottled foods as their first solids followed by soft maize meal porridge. Various reasons were given for the choices made. Most respondents (64,9%) were aware that the food was suitable for the age and 18.1% reported that the product was advertised as being appropriate. Only 4.3% of respondents acknowledged the advice from health professionals for their weaning practices.

Women used various methods of feeding their children such as teaspoon (46%), bottle (13.3%) and 4.1% used their hands. The problem with feeding solids using a bottle is that the food will be over-diluted and the infant will not learn the eating process using a teaspoon.

5.6 FEEDING PRACTICES BETWEEN 6-9 MONTHS

The feeding practices are noticeably changing as the infant grows. The majority of infants are fed with soft porridge at breakfast (90.9%) and the rest were given cereals for breakfast. There is not much difference between the meals given to the children at lunch time and at dinner time.

More than half (59.2%) of respondents were advised by health professional on how to feed their infants. Media advertising accounted for 40.8%. Only 10% of women disagreed with the information given by health professionals on infant feeding.

The majority (64.6%) of women reported that their infants have been either sick or hospitalised during these first six to nine months of life. When the cross tabulation was made between employment and hospitalization, there was strong evidence that sickness or hospitalization is related to employment ($p = 0.053$ on 1 d. f.) The reason for this high morbidity in children of employed mothers might be related to child care practices. According to Popkin et al (1990)

morbidity and mortality increase with early supplementation.

5.7 CONCLUSION

The findings of the study have been discussed. In chapter six limitations, recommendations and conclusions will be presented. Implications of this study for nursing practice, nursing education and future research will be explained.

CHAPTER 6

SUMMARY, LIMITATIONS, IMPLICATIONS OF FINDINGS AND CONCLUSION

6.1 SUMMARY

A brief summary of the main findings, conclusions drawn from the study and implications for nursing practice have been included in this chapter.

This was a descriptive study aimed at investigating the feeding practices of women in the Johannesburg area. Firstly the inner city was selected as a study area because of its high population density and overcrowding. Secondly the inner city clinics refer children to the hospital where the researcher works.

6.1.1 PURPOSE OF THE STUDY

The purpose was to describe the weaning practices of women or childminders whose children are between the ages of 6 -9 months and resident in the inner city of Johannesburg. The factors that influence the choices for feeding practices were investigated. It was intended that the results would facilitate the creation of new teaching strategies for health care workers incorporating an emphasis on traditional views of mothers.

6.1.2 OBJECTIVES

- to investigate the early feeding practices in infants from 0-3 months, 4-6 months and 6-9 months in the inner city of Johannesburg.
- to identify factors affecting feeding practices.

- to analyse the factors influencing their choice of feeding methods.
- to identify the source of information for the mothers and childminders regarding their choice of feeding practices.

6.1.3 LITERATURE REVIEW

Infant feeding in the first year of life is very important to child health and is fundamental to growth and development (Popkin et al, 1986 in Richter, 1994). Every measure has to be taken to protect the infant during this period. Feeding can affect the health of the infant through three inter-related pathways, nutritional status, exposure to pathogens and immune capacity.

There are differences between the practices of the women in developing countries and medical opinion on the appropriate time of introduction of solids (Kusin, Kardjait & Van Stellenborgen, 1985, Richter, 1994).

Studies conducted from other parts of the world show similar findings on how the infants should be weaned. Apart from breast feeding, food can be given to infants by hand, cup, spoon or bottle. The bottle can contain variety of milk formula mixtures, gruels, porridges, vegetable purees, tea, sugar water and juice (Dettweler & Fisherman in Richter 1994, Van der Boom, 1995; Michealson, 1997).

Dissatisfaction with either quantity or quality of breast milk leads to early supplementation or stopping of the breast milk (Hoffman, Durcan, & Disler, 1984). The declining rates of continuance on breastfeeding in developing countries can be attributed to the following factors:

- woman's participation in the labour force.
- repercussions from milk distribution programmes to combat malnutrition in developing countries.
- the commercial availability and marketing of processed milks,
- impact of urbanisation,
- modernisation and poverty which frequently results in maternal debility through the "poverty-ill-overwork syndrome" (Bwibo, 1995, Jones, 1996).

The weaning practices of most women, in developing countries begin by adding gruels or paps of the local staple food to the diet of the infant. The gruel is progressively thickened as infant grows (Richter, 1994).The information given by women on the appropriate time for introducing solids differ from the medical opinion. The available information to women from health professionals, socially and culturally will influence the weaning practices. Gefland, in 1971, relates an ethnographic account of Shona practices where a woman initiate breastfeeds and if the infant continues to cry then a liquid porridge is added to the infant diet. Similar practices have been observed in India (Russland & Burghart 1992 in Richter, 1994).

6.1.4 METHODOLOGY

A descriptive study of weaning practices of women and childminders whose children are between the ages of six to nine months resident in the inner city of Johannesburg was undertaken.

6.1.5 POPULATION AND SAMPLE

The study population comprised of all the mothers and childminders of the children between the ages six to nine months attending child health care clinics in the inner city of Johannesburg. A

convenience sample of 99 children were selected in three different clinics in the inner city clinics. Structured interviews schedules were used to collect data from mothers or childminders.

6.2 FINDINGS OF THE STUDY

6.2.1 DEMOGRAPHIC DATA OF MOTHERS

Ninety nine children seen from three different clinics namely Hoek street, Joubert Park and Transvaal Memorial. 78.8% of the children were brought by their mothers and only 21.2% were accompanied by their childminders, who look after them for most part of the day. When determining the sex distribution of children it was noted that the majority of children were females (62.7%). With respect to the employment status of the mother, 67.7% were unemployed and the major financial support (81.8%) was provided by the father in most families.

The majority of respondents were educated, with 84.7% having completed senior and tertiary education. Only 3.1% of respondents had no education at all. In response to the question about home language and ethnic groupings , 55% of women indicated Zulu, Xhosa (12,1%), Sotho (11.1%), Pedi (7.1%) and the remaining 14.2% indicated other ethnic groups from the neighbouring African States. With a sample size of ninety nine, significant differences on cultural values influencing feeding practices could not be measured statistically.

6.2.2 BREASTFEEDING

At birth 71% of mothers breastfed their infants. A variety of reasons for the remainder (29%)

were given for not breastfeeding at birth;

- advice against breastfeeding by own mother (20.7%)
- not enough breast milk (20.7%)
- crying baby (13.8%)
- going back to work (17.2%)
- baby refused breast milk (6.9%)
- mother sick (10.3%)

Only 25.5% of the women in the sample continued with exclusive breastfeeding. Women who were unemployed (74.6%) continued breastfeeding. The relationship between breastfeeding and unemployment is significantly high ($p = 0.017$).

According to the Department of Health (1996), data on breastfeeding in South Africa are fragmented and the prevalence of exclusive breastfeeding in infants under six months of age is unknown. Research shows that the duration of breastfeeding by rural women is longer when compared to urban women (WHO, 1991, Kau, 1990).

The guidelines from the "baby friendly initiative" clearly states that supplementary foods should be introduced from four months. However, it appears that the women will continue to introduce breast milk substitutes according to their perceptions of child's needs and the woman's understanding of when is the child ready for other foods (WHO, 1981; Richter, 1994).

6.2.3 WEANING PRACTICES

In this study women use commercially prepared infant cereals as their first foods. The preferred

porridge for infants is soft maize meal porridge and the consistency changes as the child grows. Additional foods such as peanut butter, oil, eggs and margarine will be added to the soft porridge to increase the nutritional value. Literature suggest that the solids should be introduced slowly from age four to six months (WHO & UNICEF, 1992). The reasons for this are directly linked to the physiological growth and development where the infant initially learns to use the tongue to move the food to the back of the mouth.

As the infant learns to hold and chew the food, the texture changes to chewing foods (Coovadia & Wittenberg, 1998: 180)

In this study the women used a variety of milk formulae to substitute breastfeeds. By the end of the first week of life, 35.8% of children were formula fed. Bottle feeding seems to be the convenient method of feeding. According to Wagstaff and Kibel (1991: 89), breast milk substitute provide infants adequate nutritional requirement if given in recommended strength and quality.

More than half (53.6%) of the respondents had given solids by three months. The reasons for giving solids in three months included the following:

- insufficient breast milk (35,7%)
- baby refused breast milk (10.7%)
- crying baby (16.1%)
- mother going back to work (10.7%)
- correct age for solids (26.8%)

With regard to the age of weaning, accurate information on when to initiate solids must be given to mothers because 15.1% of women indicated that giving solids at three months is the correct practice. The respondents were asked to indicate the type of food which they gave to their infants first, maize meal porridge (29.3%) was the second choice to Purity bottled foods (59.6%). A high proportion of women (62.2%) reported that they were not cooking infant food at home.

Four different methods of infant feeding were used to feed the infants ranging from teaspoon (77.6%), cup (5.1), bottle (13.3%) and hand (4.1%). Using a bottle to feed solids would require an additional fluid to liquify the porridge and the nutritional value of solids would decrease. The use of hand for feeding increases the risk of infection to the infant and should not be encouraged (Savage-King & Burgess, 1992: 216).

As the infant grows the type of foods given at lunch and dinner time were similar. 48.5% of respondents were using commercially prepared weaning foods for lunch and only 15.2% of women were feeding their infants from their family meals at nine months

When respondents were asked to disclose the source of their information for weaning practices, 59.2% reported health professionals as their source and 10.3% were not in agreement with the information given to them by health professionals. The sources of information for the remaining 40.8% was either television, radio or magazines.

6.2.4 LIMITATIONS

The major limitation on this study was the mixed and non- homogenous nature of the sample of mothers and childminders. Although only 21.2% of sample comprised of childminders, they were

still expected to give esponses requiring in-depth knowledge of the family. Mothers and childminders were asked the same questions and information given was based on recall. The results of this study therefore should only be used as estimates. According to Mackeown et al (1996) dietary intake cannot be measured without error. The nature and magnitude of error depends on the dietary collection methodology and the subjects studied. The generalisation of this study is not possible due to the nature of sample size and technique. A convenience sample of women attending child health clinics in the inner city was used. A sample size of 99 respondents is also not representative of the whole inner city community. As the geographical area presented was restricted to the inner city, the researcher suspects that there might be considerable differences between findings from this province and other provinces in the country.

The structured interview did not provide any question on feeding and HIV/AIDS. The researcher is aware that the HIV status of the mother and baby might have influenced the feeding practices. In the total sample only two women were not breastfeeding for health reasons and the interview schedule did not provide for a question to probe the nature of illness.

6.3 IMPLICATIONS OF FINDINGS

6.3.1 IMPLICATIONS FOR NURSING PRACTICE

In line with the governmental policy of Primary Health Care emphasis needs to be placed on health promotion in order to improve the health of children in this country. Beginning early during ante-natal care women must be helped to work through a plan on how to feed their children. Information on financial planning and budgeting should be included in health promotion to assist women in making the correct choices and decisions about weaning practices.

6.3.1.1 *Breastfeeding*

Nurses should support mothers when breastfeeding because exclusive breastfeeding for the first six months of life will help the infant against eczema, food allergy, atopic dermatitis and diarrhoeal diseases.

Information on breastfeeding should be made available to young girls because attitudes about breastfeeding are well established in young teenage girls. The information on breastfeeding should not only include advantages and disadvantages, a more practical approach to breastfeeding should be adopted to assist first time mothers.

Women should be encouraged to delay supplementary feeding until at least the infant is four months. The type of supplementary food given to infants should contain sufficient energy with micro and macro nutrients. According to the South African Vitamin A Consultative Group (1997), the main micro nutrient deficiencies among children in South Africa are Vitamin A, Vitamin C, iron, calcium, niacin and zinc.

The weaning period is very important for both the infant and the family because lack of quality supplementary food and inadequate breastfeeding will not only result to stunting and wasting but could have devastating results for the infant in later years.

6.3.2 IMPLICATIONS FOR NURSING EDUCATION

It was the intention of the researcher to develop a teaching tool to guide the students on weaning practices of women in the inner city incorporating the traditional feeding practices.

6.3.3 RESEARCH

The following areas of research should be explored:

- Longitudinal studies on weaning should be done to measure the effects of feeding choices on health of the child in later life.
- National studies on weaning should be done in order to create a national data base for the country.
- Specific qualitative research is necessary to investigate traditional child care practices on weaning and results can be included in nutritional recommendations for South African children.
- Research studies may be conducted to compare the effects of culturally specific education programmes and the effects can be measured on weaning practices.
- Collaborative cohort studies should be done between health professionals and nutritionists to measure the effects of feeding practices on child development.

6.4 CONCLUSION

The opinions of women on weaning practices were obtained from three child health clinics in the inner city. 78,8% of women were mothers and 21.2% were either childminders, friends or relatives. The majority of respondents (67%) were unemployed. Even though the sample comprised of women from different ethnic groups the sample size was too small to detect significant differences. Weaning practices in the inner city are similar to patterns followed in other developing countries. There is a growing trend to buy the commercially prepared weaning foods. Even though a high percentage of women in the sample were not working, very few women are cooking and preparing the infant food at home Suitability and convenience were given as reasons for feeding commercially weaning foods.

This research has among other things revealed the changing weaning practices of women in the urban areas. This might be due to the fact that the families in the inner city are not stable and the majority of women have lost their extended family support. This is evident from the number of women who rely on media advertising for the information on weaning practices.

There is a proliferation of research on infant feeding. Despite numerous studies done on this area women practices continue to differ with the advice from health professionals. It appears women, continue, stop breastfeeding or introduce supplementary feeds for reasons which are sound to them even if they lack scientific basis.

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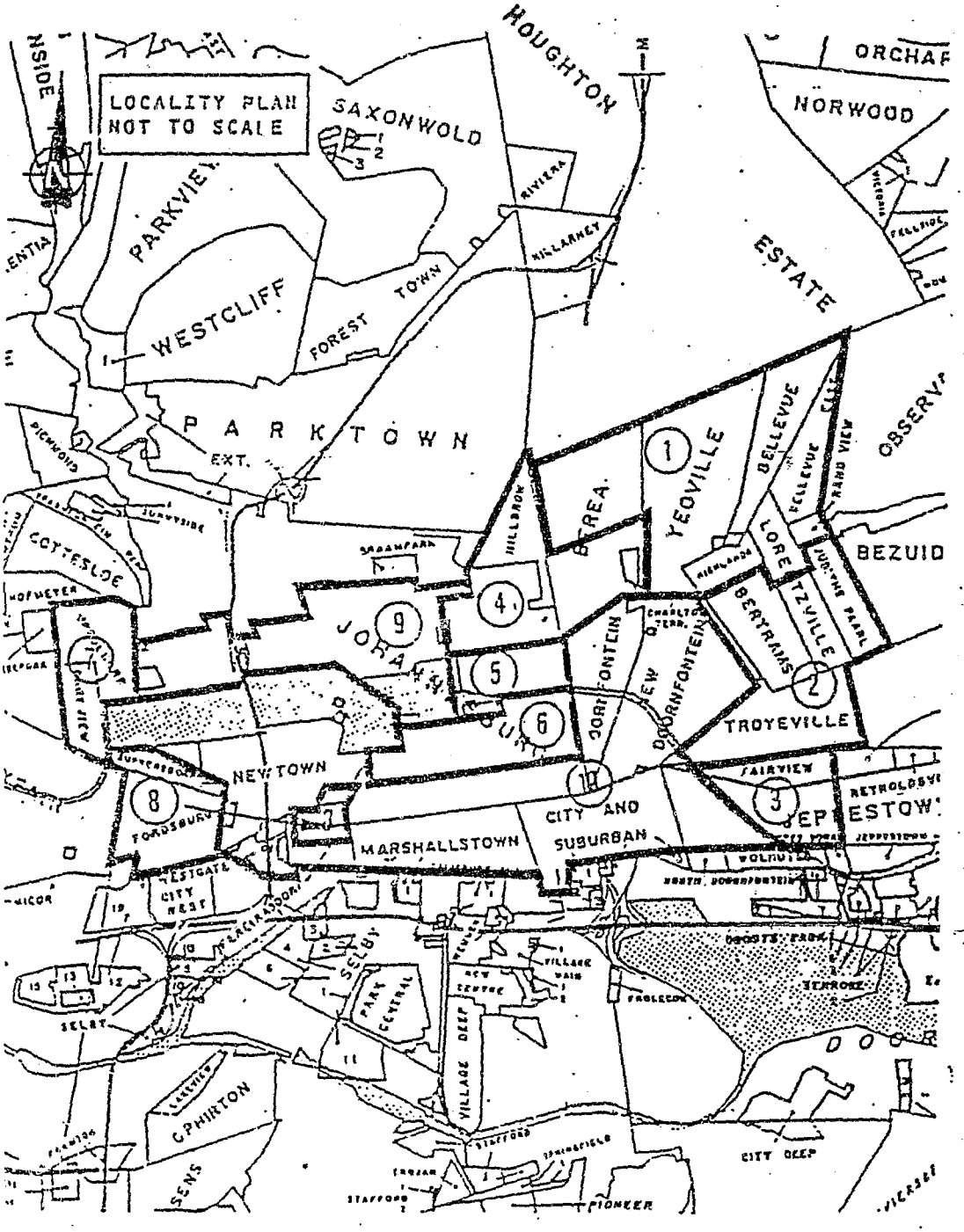
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APPENDICES

Boundaries of the Sampling Domains



INFORMATION SHEET

My name is MRS ADELE TJALE. I would like to request your permission to include your baby in the study. The purpose of this study is to investigate the feeding practices of children between the ages of 6 - 9 months in the inner city of Johannesburg.

The information given will be used for research purposes only and cannot be related to you personally.

The results of this study will be used to develop a teaching information guide for mothers of young babies.

Please note, you can withdraw from the study at any time.

Thanking you.

ADELE TJALE (Mrs)

INTERVIEW SCHEDULE FOR MOTHERS OR CHILDMINDERS WHOSE CHILDREN ARE BETWEEN THE AGES OF SIX AND NINE MONTHS ATTENDING CLINIC IN THE INNER CITY OF JOHANNESBURG

PART 1 - DEMOGRAPHIC DATA

1. [Clinic]	Joubert Park	1
	Hoek Street	2
	TMI	3
2. Age of Child [Cage]		
3. Sex [Sex]		
	F	1
	M	2
4. Date of Birth [dob]	<dd/mm/yy>	
5. Place of Birth [pob]	Johannesburg Central	1
	Soweto	2
	Alexandra	3
	East Rand	4
	Other	5
6. Birth Order [d6]		
7. Mother working now [d7a]	Y	1
	N	2
8. Occupation of the mother [d7b]		
	Unemployed	1
	Unskilled	2
	Semiskilled	3
	Skilled	4
	Scholar	5
9. Interviewee	Mother	1
	Other	2
10. Age of mother/ childminder [d8]		
	>20 years	1
	20 -30 years	2
	30 -40 years	3

11. With whom does the mother live ?

Father	1
Other	2

12. Who provides the major financial support for the mother a baby ?

Father	1
Other	2

13. Which cultural traditions most influence family life?

Zulu	1
Xhosa	2
Sotho	3
Venda	4
Tsonga	5
Ndebele	6
Swazi	7
Pedi	8
Other	9

14. Number of children in the household

1	1
2	2
3	3
4& above	4

15. Occupation of Father

Unskilled	1
Skilled	2
Unemployed	3

16.Education Standard

Mother [d15a]

None	1
Primary	2
Junior Sec.	3
Senior Sec	4
Tertiary	5

Father [d15b]

None	1
Primary	2
Junior Sec	3
Senior Sec	4
Tertiary	5

PART 2

1. EARLY FEEDING PRACTICES 0 - 3 MONTHS

1.1 Did you give breast feeds only at birth ? [FP1.1]

1.2 If the answer in 1.1. is **NO** state why ?

Advice from health worker	1
Not enough breast milk	2
Crying baby	3
Going back to work	4
Baby refused breastfeeds	5
Mother sick	6
Thirsty baby	7

1.3 If something other breast milk was given what was it ? [fp1.3]

Water with sugar	1
Gripe Water	2
Milk Formula	3
Other	4

1.4 How long was the baby fed on breast only ? [fp1.4]

0 - 7 days	1
< 21 days	2
1 month	3
2 months	4
3 months	5
4 months	6

1.5 What kind of food would you not give to a less than three month old baby ? [fp1. 5]

Purity foods	1
Cereals	2
Maize meal porridge	3
Chewable foods	4

2. EARLY FEEDING PRACTICES 4 - 6 MONTHS

2.1 What type of food did you give the baby first ? [fp. 2.1]

Maize meal porridge	1
Purity foods	2
Maltabela	3
Tastee wheat	4
Fruits	5
Other	6

2.2. Please state the reason why that food was the first choice ? [fp2.2.]

Suitable for age	1
Inexpensive	2
Available at home	3
Advice from family	4
Advice from health worker	5
As advertised	6

2.3 How was it given to the baby ? [fp2.3]

Teaspoon	1
Cup	2
Bottle	3
Hand	4

2.4 Did you cook baby meals at home? [fp2.4]

Y	1
N	2

2.5 If... **NO**.. Please explain reason for not cooking the baby's meal at home? [fp2.5]

Instant	1
Pre-cooked	2

2.6 Tell us the name of the food you first gave to the baby [name]

Fruit	1
Cereals	2
Purity pre-cooked	3
Maize meal porridge	4
Home cooked vegetables	5
Other	6

3. EARLY FEEDING PRACTICES SIX TO NINE MONTHS

3.1 Can you please tell us how you are feeding your baby now (6 -9 months) [fp3.1]

3.1.1 Breakfast [breakfast]

Maize meal soft porridge	1
Cereal and milk	2
Vegetables	3
Fruits	4

3.1.2 Lunch[lunch]

Pap with meat and vegetables	1
Vegetables, margarine and eggs	2
Cereals and milk	3
Bottled weaning foods	4

3.1.3 Supper [supper]

Pap and meat	1
Vegetables	2
Cereals and milk	3
Eats from family dinner	4
Bottled weaning foods	5

3.1.4 In- between Snack [snack]

Breast milk	1
Bottled pre-cooked foods	2
Fresh fruits	3
Fruit juice	4
Yoghurt	5
Biscuits	6
Crisps	7
Bread	8
Milk	9
Other	10

4. ADDITIONAL DATA

4.1 Where did you learn about feeding your baby ? [learn]

Advised by health professional	1
Television	2
Radio	3
Books and magazines	4

4.2 Is there any advice you have received from doctors or clinic sisters with which you don't agree ? [advice]

4.3 In past six months has your baby ever been sick or hospitalised? [sick]

Yes	1
No	2

4.4 If the answer is Yes what was the reason [ad4.7]

Colic	1
Diarrhoea & vomiting	2
Upper respiratory infection	3
Jaundice	4
Allergy	5
Fever	6
Rashes	7

4.5 Is your baby immunised against the childhood diseases? [immunised]

1. Pulmonary Tuberculosis

Y	1
N	2

2. Diphtheria

Y	1
N	2

3. Whooping Cough

Y	1
N	2

4. Tetanus

Y	1
N	2

5. Poliomyelitis

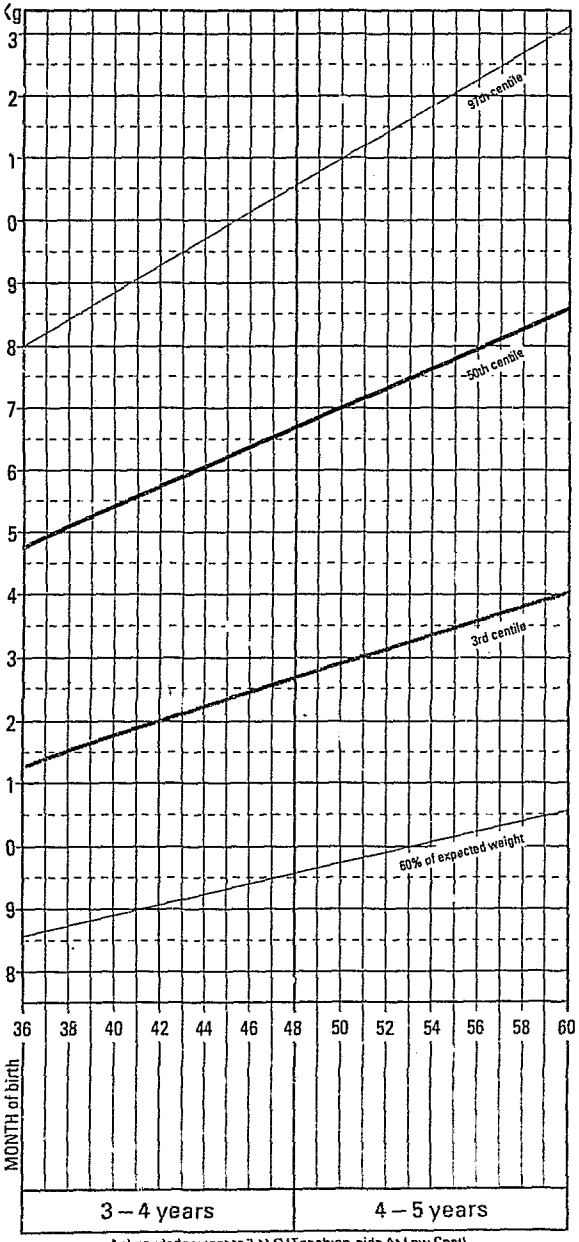
Y	1
N	2

6. Measles

Y	1
N	2

7. Hepatitis

Y	1
N	2



Acknowledgement to TALC (Teaching-aids At Low Cost)

Road to Health Chart

Department of Health

IMPORTANT: always take this card with when you visit any health clinic, doctor or hospital, and present the card on school entry.

Child's name — boy ☐ girl ☐

Date of birth (day / month / year) — Place of birth

Birth weight — Birth length — Birth head circumference

Problems during pregnancy / birth / neonatally

APGAR 1 min. / 10 min. — Gestational age (wks) — Serology

Mother's file numbers – Antenatal — Delivery

IMMUNISATIONS

		PRIMARY Date given	PRIMARY Signature	BOOSTERS	BOOSTERS Date given	BOOSTERS Signature
B.C.G.	1			2		
Polio	0			4		
	1			5		
	2					
	3					
DTP	1			4		
	2			DT		
	3					
Hep.B	1					
	2					
	3					
Meas	1			2		
Other	1			3		
	2			4		
Vit A	1			4		
	2			5		
	3					

Remember to discuss child spacing

GW 8/123

Clinic 1	Clinic 2
Address	Address

Mother's name

Father's name

Caretaker if not the mother

Where does the child live?

How many children has the mother had?

Number born _____ Number alive now _____

IN NEED OF SPECIAL CARE (if YES, then X)

Was the baby **less than 2.5kg at birth** yes

Is this baby a **twin** yes

Is this baby **bottle fed** yes

Does the mother need more **family support** yes

Are any brothers or sisters **underweight** yes

Are there any other reasons for **taking extra care** yes

for example – tuberculosis, single parent etc.

Vision screening (4½ – 6 yrs)	Hearing screen (7 to 9 months)
date	date — Manchester Rattle used ☐
Result L: R:	Result L: R:

CARD GIVEN AND MOTHER TAUGHT BY

ORAL REHYD-RATION DATES — Taught — Used

TUBERCULOSIS SCREENING

Heaf / Mantoux / Tine	Date	Grade

TB contact

TB notified

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

COMMITTEE FOR RESEARCH ON HUMAN SUBJECTS (MEDICAL)
Ref: R14/49 Tjale

CLEARANCE CERTIFICATE PROTOCOL NUMBER M 960918

PROJECT	Weaning practices of mothers whose children are between the ages of 6-9 months attending clinic in the inner city of Johannesburg
INVESTIGATORS	Ms AA Tjale
DEPARTMENT	Nursing Department, Johannesburg Hospital
DATE CONSIDERED	960927

DECISION OF THE COMMITTEE

Approved unconditionally

DATE 961009

CHAIRMAN. .....(Professor P E Cleaton-Jones)

c c Supervisor: Ms P A McInerney
Dept of Nursing Education, Johannesburg Hospital

==========

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and ONE COPY returned to the Secretary at Room 10001, 10th Floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

DATE.....SIGNATURE .....

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

14 November 1996

Mrs AA Tjale
P O Box 261186
EXCOM
2023

Dear Mrs Tjale,

APPROVAL OF PROTOCOL ENTITLED "WEANING PRACTICES OF MOTHERS WHOSE BABIES ARE BETWEEN THE AGES OF 6 TO 9 MONTHS ATTENDING CLINICS IN THE INNER CITY OF JOHANNESBURG"

I should like to advise you that the protocol that you have submitted for the degree of MSc(Nursing)(by coursework and research report) has been approved by the Postgraduate Committee for continuation of candidature, subject to ethics clearance being obtained. Please submit an ethics clearance number to the Faculty Office as soon as possible.

Professor B Robertson and Ms P McInerney of the Department of Nursing Education have been appointed as your supervisors. You are asked to maintain regular contact with your supervisors who must be kept advised of your progress.

Please note that all candidates for higher degrees must make reference in their research reports to the clearance number of the relevant ethics committee. The final title, when submitting the research, should comply with the above approved title, and a signed declaration, noting that the work has been your own and not submitted to any other University, must also be included.

Please also note that Postgraduate students are **required to register with the Faculty Office every year until they graduate from the University.**

Yours sincerely

MRS G GABRIEL
FACULTY OFFICER (POSTGRADUATE)
FACULTY OF HEALTH SCIENCES

cc: Professor B Robertson
Ms P McInerney

GREATER JOHANNESBURG TRANSITIONAL METROPOLITAN COUNCIL

Johannesburg Administration
Health, Housing and Urbanisation

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Johannesburg 2000

Tel: 407-6111
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Adele Tjale
Wits Medical School
5 York Road
Bramley Manor
2090

Ethical clearance for research study

This is to inform you that your study entitled " Weaning practices of children between the ages of 6 to 9 months attending clinics in the inner city of Johannesburg" has been reviwed and there are no ethical problems.

You may therefore, proceed with your study as soon as you obtain written consent from respondents as stated in your protocol.

Yours Sincerely

Dr. Paul Sekeitto
Deputy Director (Head of Epidemiology and Health Management Information Systems Branch)

PP: Ethics Review Committee (Greater Johannesburg Transitional Metropolitan Council)

cc : Miss Harding
cc : Ag. M.O.H Johannesburg Administration.

Attached is a copy of comments on study design and methodology.

CONSENT FORM

I _____ hereby give consent to be included in the study being undertaken by Mrs A A Tjale.

I understand that the information will be confidential and that it will be used only for research purposes.

Signed: _____ _____

Relationship to the baby: _____

Author Tjale A A
Name of thesis Weaning Practices Of Mothers/Childminders Whose Babies Are Between The Ages Of Six To Nine Months Attending Clinics In The Inner City In Johannesburg Tjale A A 2000

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