Breast Feeding Pattern Among Rural and Urban Mothers

BY

Vinothini .K

A DISSERTATION SUBMITTED TO THE AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN (DEEMED UNIVERSITY) COIMBATORE-43 IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF **MASTER OF SCIENCE IN FAMILY AND COMMUNITY SCIENCE**

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Certified as bonafied research work

Signature of the Head of the Department	Signature of the Dean of the Faculty	Signature of the Guide

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Introduction

I. INTRODUCTION

"Gods dwell where women are adored". It is she who creates the world and she holds the universe in her womb.

- Manu Charithra.

Indian women in the family play a multiple role. In every day life and in various crises, women displays strength and patience in carrying out her responsibilities. Through her hard work and dedication to house-keeping child rearing and assisting in agriculture and industry, women contributes much to national, economic and social development. Women is the fulcrum around whom all the decisions and actions of the family revolve.

A woman as a mother occupies a place of great honour and prestige in our society. A barren women is considered ominous in all the social and religious functions. "Having a child is highly creative both in the physical sense of producing it and in social sense of moulding it".

In modern India, there is no drastic change in the ideal of motherhood. Though the ideal roles of the mother are going significant changes, yet there is no attack at the very basis of the institution of motherhood. The higher education, the employment, new concept of child rearing and the increasing independence of women all are influencing the socialising role of the women as a mother.

In the present day social scenario, women have to shoulder the dual responsibilitity of contributing to the family income and the economic development of the country alongwith rearing the children. Census figures and esti-

mates of various agencies indicates that there may be about 10 crores of working women in India and there may be atleast 2 crores of working mothers of young children. (National Institute of Public Co-operation and Child Development 1993). Women are working in almost all types of jobs such as technical, professional and non-professional in both private and public sectors. Busy professions like medical law and administrative and shifting duty jobs are not able to give proper time and due care to their children.

Swaminathan (1994) opines that work outside the home, which involves physical seperation of the mother and the child would be an obstacle to satisfactory breast feeding. Ibhanesebhor, S.E., and Muogbo, D.C. (1995) state that the maternal employment is the greatest factor opposing successful breast feeding during the first four months.

But world Health Organization (1991) state that infants should be given only breastmilk upto 4-6 months of age. Paediatricians and public health officials have seen the benefits of breast-feeding with their own eyes (James, 1992). The breast milk is sterile, the right temperature, easily digested, inexpensive, and readily available and provides nutrition of high quality. It contains all the nutrients that a baby needs for the first 4-6 months (Jain, 1988).

Jellifle and jellifle (1988) state that the protective effect of human milk against many infections notably diarrhoea, was related to the fact that is clean and usually uncontaminated. Human milk contains large numbers

of white cells and an increasingly recognized range of protective substances, including for example, lysozome, lactoferrin, secretary IgA, etc. These are especially effective against external infections by bacteria, e.g. Eschenichia coli or vibrio cholerae or some viruses or some parasites, notably Giardia lamblia. Breast fed babies are less likely to get colic and infantile allergies than artificially fed babies (Ghosh, 1993). Breast milk not only provides protection against infections and allergies, it stimulates the infant's own immune system (Akre, 1989).

Sachdev and Choudhury (1995) state that breast feeding for the first four months, with appropriate complementary feeding in addition to breast feeding for atleast the first year of life, prevent the deaths of an additional 1.3 million infants each year.

Bellagio Guidelines (1988) reveals that, as a child spacing method, breast feeding is most effective during the early postpartum months. Ravichitrapu (1993) states that, ideally breast feeding must continue atleast upto one year as lactation helps in quick involution of the uterus and has a contraceptive too. Prolonged and repeated lactation may diminish the risk of breast cancer.

Breast feeding has great psychological value to both the mother and the child. Through the intimacy of breast feeding, it is easy for a mother to give her baby closeness, warmth and comfort feeling that it derives nutrients for its soul through affection and security. Exclusive breast feeding in the first four to six months and

extended breast feeding in the second year of life, not only saves money for the family lives, but also saves money for the family and the nation (Anand, R.K. 1995).

Despite the advantages, the prevalence and duration of breast feeding appears to be declining. The decline in breast feeding as a global phenomenon which starts among the urban well to do and spreads to the urban poor and later to the rural population (Hofvander and Hillervik, 1995). In urban areas of western countries, the percentage of infants ever breast fed fell from 69 percent in the mid 1970's to 48 percent in 1988, while in rural areas, there was a decline from 78 percent to 59 percent over the same period (De Boer and Hill, 1994).

Even in India, in the urban areas with the introduction of modern technologies and the adoption of new life styles, the traditional practice of feeding infants is declining gradually. Women with little or no formal education tend to breast feed their infants longer than women who received formal education (Perez Escamilla, 1993).

Walia et. al (1992) found that in chandigarh that the practice of breast feeding at 6 months of age fell from 89 percent to 69 percent while the use of milk supplements within the first month increased from 0 to 25 percent among the illiterates and from 7 to 58 percent among the educated group of mothers.

In developed countries, rapid industrialisation ready availability of breast milk substitutes, increase in the proportion of women working outside home in non-traditional occupations, acceptance of bottle feeding as symbol

of sophistication have all combined and resulted in a massive decline in breast feeding. Chatterjee (1990) attributes the steady decline in breast feeding due to female employment in organised sector, to employer resistance to the provision of maternity benefits and creches. He concludes that a large class of working women in India have no option but resort to bottle feed as the lack of satisfactory support structure at work leads to a direct conflict between work and breast feeding. According to Ghosh et. al (1986) one third of lactating mothers who were working stopped breast feeding in less than six months when comparred to 22 percent of the non-working mothers.

The problem of decline in breast feeding is one of the most serious nutritional problems for the infant population in both urban and rural areas. In India, not much information is available on breast feeding practices and also problems faced by the working lactating mothers. Hence the present study "Breast Feeding pattern among rural and urban mothers" has been undertaken with the following objectives.

1. To know the breast feeding practices among the rural and urban mothers.
2. To find out the nutritional status of the lactating mothers.
3. To compare the breast feeding pattern of working and non-working lactating mothers in both rural and urban areas.
4. To identify the problems faced by the employed nursing mothers.

Review of Literature

II. REVIEW OF LITERATURE

The review of literature pertaining to the study on "Breast - feeding pattern Among Rural and Urban Mothers" is presented under the following headings.

A. Importance of Breast-feeding.

B. Trends in Breast-feeding.

C. Reasons for decline in Breast-feeding.

D. Breast-feeding Practices.

E. Women's employment and Breast-feeding.

A. Importance of Breast Feeding:

Breast feeding is widely believed to be the most benefitial method of feeding for the health and well being of infants. Breast feeding is a natural resource that is too valuable to lose; to ignore it is to promote mortality, suffering and personal and national. economic stress. (World Health Organization 1993).

Insel and Roth (1990) state that, no other food is quite so good for the child as the mother's milk. It is sterile and contains antibodies that help to protect the child against diseases. Human milk is the most balanced food for the infant, and it provides the best nourishment for the baby. It also confers immunity against some infections during the early months of life. (Robinson et al., 1982).

Human milk contains a wide range of substances that provide the infant with disease resistance and helps the infant's own immune system to develop. So breast feedings is valuable for the health and safety of the infant. (Dworetzy 1990). For a healthy nation and children, breast feeding is natural immunization. (Rajesh 1994).

Ravi Chitrapu (1993) states that breastmilk has anti-infective properties. It contains antibodies against polio, flu, teatanus, mumbs and microbes causing diarrhoea and chest infection. The protein of breastmilk is of high biological value, it provides important nutrients like linolenic acid, calcium, phosphorous and better iron absorption, and breasfed infants have greater acidity of a gastric juice which kills bacteria. Breast milk promotes growth of favourable bacteria in their gut that inhibit disease producing organisms.

Andraca and Uavy (1995) state that the recognition of specific functions for the long chain essential fatty acids present in human milk as key componenets of neural membranes necessary for optimal brain development.

Diaz et al., (1995) observedthat there was a high weight and length gain in infants, who breastfed seven times a day or more in the first 6 months. The study extended breastfeeding and growth in rural China among 2148 initially breasted children aged 12-47 months by Ann Prentice (1993) reveals that, children who were breastfed for longer than 12 months had significantly higher scores for weight-for-age, height-for-age and weight-for-heigher than children breastfed for shorter periods.

Bhandari et al., (1983) observed that in Udaipur, significantly low morbidity, mortality and high weight gain was observed in breastfed babies than top fed babies. Gunnalaugsson et al., (1995) carried a study on breastfeeding and diarrohea in Guinea and it reveals that early breast feeding might have consequences for diarroheal morbidity after the neonatal period.

A survey done by school children of Ajoya as a part of project Pixatala's Schools health programme in 1984 reveals that bottle fed babies had diarrohea sixtimes more frequently than breasted babies. Sachdev and Choundhury (1994) state that, an exclusively breatfed infant is about 14 times less likely to die from diarrhoea, nearly 4 times less likely to die from

respiratory disease and almost 3 times less likely to die from other infections than a non-breasfed infant.

Kahraman et al., (1994) observed that exclusive breastfeeding had a positive effect on morbidity related to diarrhoea and upper respiratory tract infections. Anand, R.K. (1995) point out that breast feeding currently saves 6 million infant lives each year by preventing diarrhoea and acute respiratory infections alone.

Hanson et al., (1994) state that the breast feeding effectively prevents infectious disease and death in children.

Andraca and Uavy (1994) state that the act of breast feeding provides a unique interaction, while the mother will satisfy not only the nutritional needs but also the emotional needs of the infant. During the act, moher and infant are interconnected not only physically but also sensorially, physiologically and psychologically.

Hanson et al., (1994) observed that breastfeeding is an important natural contraceptive and considered that the promotion of breastfeeding would reduce birth rate.

According to Kuthre (1990), Breasfeeding has a merit as a contraceptive method because when sucking is strong for a prolonged period, both ovulation and the return at a regular menstural cycle are delayed.

According to "Bellagio Guidelines" - (based onthe results of 13 prospective studies made in 8 countries). The maximum birthspacing effect of breastfeeding is achieved when a mother fully breastfeeds and thus remains amenorrhoeic "Full breast feeding" entails providing an infant with no otherfood or liquid than breast milk, when these two condntions are met, breastfeeding provides more than 98% protection from pregnancy during first six months postpartum.

The study "Breast feeding and other reproducctive factors and the risk of hip fractures in elderly women" among 174 women aged 65 years or more by Cumming R.G., and Klineberg, R.J. (1993) reveals that breast feeding may protect women against hip fracture in old age.

According to Anand, R.K. (1995) as a national resources, value of mother's milk amounts to Rs.6,500/- Crores, value for diarrohea protection by breast feeding comes to Rs.176/- crores and value for Fertility control amounts to Rs.495/- crores giving a

total annual savings of Rs.7171/- crores to our nation. Thus breastfeeding has influence on the mother and child's health and nation's economic condition.

B. Trends in Breast Feeding:

Breastfeeding is so natural and inherent activity of human life, World Health Organisation and United Nations International Children Emergency Fund (1989) state that breast feeding is an unequalled way of providing ideal food for the health, growth and development of infants and has a unique biological and emotional influence on the health of both mother and child. studies from different parts of the world indicate that incidence and duration of breastfeeding have declined in many parts of the world.

Tuttle and deway (1995) state that in the United States population as a whole, trends in the incidence and duration of breast feeding in recent years have been disappointing. Evidence from the surveys by Ross Laboratories in United States indicates a decline rate of breast feeding from 59.7% in 1985 to 51.5% in 1990.

The study on"Breast feeding pattern among indochinese immigrants in northern California" by Gwynn. E.; (1989) reveals that there was a sharp decline in the rate of breastfeeding was documented

among indochinese mothers who mirgrated from Combodia and Laos in Northern California. Duration of breastfeeding decreased from 20.4 months, to 8.7 months.

Tuttle and deway (1990) opins that,in California, the breast feeding rates were very low (12%) in the Hmong poulation. Vegalopez, M.G.; and Perze,G.J. (1993) state that in Tonala and Tolaquepaque (Guadalajara Mexico) 34.8% of the study infants being breastfed for below one month.

Escamilla et al., (1993) state that, in Mexico, the median duration of breastfeeding in 1987 was virtually the same as it was in 1976 and that approximately of all Mexican infants are not breastfed beyond 6 months of age, the duration of brestfeeding was shortest in urban areas.

The study breastfeeding practices during the first six months of life among a Cohort of urban poor infants in Southern Brazil indicate that the median duration of breastfeeding was 18 weeks and at 6 months only 41% of the infants were breastfed. (Maitines, J.C et al., 1990).

Breast feeding rate (both exclusive and partial) in Sweden during the period 1945-1990 (national

average) indicate that only 55% of mothers breastfed their babies upto 6 months (Hofvander and Hillerrik 1995).

A survey was conducted on 1019 mothers in 79 primary health care centres in saudi Arabia toexamine the patterns of breastfeeding and it reveals that 98% of mothers had breasfted their infants at birth. This rate dropped to 96.5% during the first week of life. (Madani et_al., 1994).

BUNSO Study (1995) reveals that feeding practices in several Government hospitals in Philippines was practised by a mere 41% of the mothers sampled. Breast feeding was lowest among women in urban area than in rural area.

Chua et_al., (1989) state that in Singapore about 60% of well-to-do mothers initiate breast feeding. This compres favourably with the 36% recently recorded for poor mothers, but is still unacceptably low compared with the 85 to 95% of well-to-do mothers and 90% of poor mothers who breastfed inthe 1950's and 1960's. There has been a general decline in the incidence of breastfeeding during the last 35 years.

Canjoo, C. ; and Rowlends, R. (1988) state that among urban house wives in Sringar, 96% of the mothers

breastfed their babies. The study conducted by Bhandari et al.,)1983) in Udaipur reveals that 95.8% babies were breastfed throughout the neonatal period and 4.2% were topfed from the very beginning.

Kaur et al., (1990) point out in Hisar, Haryana, 44.4% of the mothers breastfed their children for 6 to 12 months while only 6.8% mothers continued breastfeeding for more than 2 years.

The study breast feeding patatern among rural and urban mothers by Nandan et al., (1990) in Agra, reveal that the mean duration of breastfeeding was observed to be 16.72 months in the study population. Mean duration of breast feeding was much more in rural mothers as compared to urban mothers.

Data on breastfeeding and weaning practices in rural west Bengal from 57 lactating mothers reveals that the mean duration of breastfeeding was upto 3 months in 17, 3-6 months in 14, 6 to 9 months in 13 and 9-12 inl3 infants (Ray, B: 1993).

Anand, R.K. (1995) point out that the percentaqe of exclusively breastfed infants at the end of the fourthmonth had touched a low figure of 35% in Calcutta, 45% in Madras and 66% in Bombay. Thus the prevalance and duration of breastfeeding have declined

in many parts of the world. (Ibhanesebhor S.E., and Muogbo D.C. 1995).

Kaur et al., explains rapid industralistion, ready availability of breast milk substitutes, increase in proportion of women working in non-traditional occupations outside home and acceptpance of bottle feeding as symbol of sophistication have resulted in erosion in beastfeeding practices during the first half of the present century.

C. Reasons for decline in breast feeding

A major reason for the decline of brest-feeding and the spread of artificial feeding is that the personnel engaged in both formal and informal health care have not received adequate training in practical aspects of lactation managaement, and do not understand the needs of lactatiang women. (WHO 1993). Twenty nine percent of white mothers in Mexico, stopped breast feeding due to doctor's suggestions. (Spake and Harris 1993). Twentynine percent of mothers and 14 percent of white mothers in Mexico, stopped breastfeeding becasue of sore nipples. (Spake and Harris 1993). In another study (Hussain and Halder 1993) found that 41 percent of mothers stopped breastfeeding, due to sore nipples, swollen or painful breasts and abscesses.

Spake and Harris (1993) observed that, in Mexico most of the mothers stopped breastfeeding because of baby biting, birth control pills, work, pregnancy, mother's wish, illness and baby's allergy towards milk.

In mexico, 57 percent of Hispanics women and 43 percent of white women stopped breastfeeding because of insufficient milk secretion, (Spake and Harris 1993). In another study, seventy two percent of Bedouin Arab women introduced bottle feeding to their children becasue of insufficient milk secretion. (Forman, M.R.et al., 1995).

Anxiety associated with unfounded fears about the ability to produce sufficient milk to meet the nutritional needs of the normal infant is one of the most common reasons for mother failing to intiate breast feeding (Cronenwelt et al., 1993).

Stress and modern times have often blamed for the decreasing trend in breast-feeding.(Helsing and Sadch, 1991).

World Health Organisation (1993) revealed that, the major obstacles to breat feeding to be addressed includes' a mother's lack of confidence in her ability to brestfeed and the lack of practical skills to do it

successfully; cultural beleifs, and taboos surrounding breastfeeding, the poverty image surrounding breastfeeding, and the belief that bottle-feeding is modern and milk of social status, availability and marketing of breast milk substitutes and bottles, and their misrepresentation as a desirable alternative to breastfeeding; and urbanization or economic transition with the associated breakdown in traditional support systems that have altered "families" attitudes towards brestfeeding.

D. Breast feeding practices:

Breast Feeding is an integral part of reproductive process. The benefits of breastfeding for both the mother and infant are well documented. Operational Guidelines for promotion of proper infant feeding (1995) states that the mother should initiate breast feeding within an hour of birth.

A study in the University of Benin teaching Hospital, by Ibhanesebhor S.E.; and Muogho (1995) reveals that among 70 mothers 20 mothers (28.6%) put their babies to their breast within the first 30 minutes of life, 19 mothers (27.1%) breast fed within the first 24 hours of life (with feeding starting after 30 minutes). Eighty-one percent of the mothers breastfed within 48 hours of delivery.

Kaur et al., (1990) state that in Hisar about 31.2 percent of the infant were given the breast feed within 12 hours of birth while 46 perecent and 22.8 percent of the mothers gave the first breast feed between 12 to 24 hours and after 24 hours respectively.

According to Anand R.K.; (1995) the first breast feed in Bombay, Madras and Calcutta Hospitals was mostly given 24-72 hours after the delivery.

Nandan D. et al., (1991) Found that, in Agra, 91.8% of rural mothers and 61.8% urban mothers started breast feeding only on third day.

Ravichitrapu (1993) states that colostrum is rich in proteins especially antibodies that fight microbes and vitamin A. But in India, there is a common (mis) practice among mothers is not to feed the baby colostrum. Bhandari et al; (1983) state that in Udaipur, among 500 nursing mothers, majority of mothers 62.8% discarded colostrum by manual expression. In Hisar, among 430 mothers only 38.8% of mothers fed their infants with colostrum (Kaur et al., 1990)

Canjoo. C, and Rowlads (1988) state that among 125 urban hosewives in Srinagar, about 57% of the mothers did not feed their infants with colostrum, as they felt colostrum is an unhygenic product, 43% of mothers fed their infants with colostrum on doctor's advice.

Operational guidelines of promotion of proper infant feeding (1995) strictly says that "Give newborn infants no food or drink only breast milk unless medicalaly indicated. Ibhanesebhor S.E.; and Muogho D.C.;)1995) state that among 70 mothers in the University of Benin Teaching Hospital 35 mothers (50%) gave some form of fluid to their babies before commencing breast feeding. Nineteen of these 35, fed their infants plain water, ten gave glucose in water and six gave milk formula feeds.

Rao et al., (1990) reported that, during the interim period, babies, in South India are usually given water, diluted cow's milk or honey as prelacteal feed. Rao, (1996) states that, in rural areas of Anantpur, mothers start the baby first on feeds like plain water, sugar water, etc. because there is a belief that breastmilk of the first two days is bad milk.

According to operational Guidelines for promotion of proper infant feeding (1995), the breast feeding should be encouraged on demand. According to Nandan et al., (1991) in Agra, 94.6% of rural mothers and 73.7% of urban mothers feed their babies on demand.

According to Hussain and Haldar (1993) of 191 mothers in rural Bangaladesh 99 (51.87%) were nursing their babies on demand, 39 were nursing strictly on the basis of the mother's convenience, 51 (26.7%)breast fed when the baby

demanded it or when they themselves wished, and only two mothers (1.1%) were following a strict breast-feeding time schedule. Among 125 mothers in Srinagar, 65.8% mothers fed their child on demand. (Canjoo, C. and Rowlands. R. 1988).

According to Ravichitrapu (1993), the baby should fed 6-8 times a day at 2-3 hourly intervals for 3-5 minutes at each breast. The study Breast feeding pattern in Saudi Arabia by Madani, et al., (1994) reveals that 94.4% of infants breast fed at nights with 88.1% feeding their infants more than once.

In India, among 10,374 infants, one third of infants started receiving bottle feeds during first month. This number rose to 38% by 2 months and over 60% by 6 months of age. (Anand R.K.: 1995).

E. Women's employment and breast feeding:

Breastfeeding is part of the overall pattern of parent - child interaction. It will be influenced by the degree of seperation that occures when mothers attempts to combine full - time mothering with employment outside the home. Breast feeding and employment are often viewed as mutually exclusive. (Anerbach,G. 1990).

Guthre (1990) opines that the large number of women who are working outside the home is also one of the factor attributed to lower incidence of breastfeeding in developed countries compared to developing countries.

In India, over 60 per cent of urban women and 50 percent of rural mothers work outside the home. (Miqnon and Mascarenhaas 1988). In women working outside home, this work is in addition to their work at home because they do not usually have additional help at home. They thus face a dial work stress (Rama Chandran 1993).

Prasad (1989) conducted a survey among the working woman and their health. The result focussed on two important issues. The first is the Psyco - social problems of working women in her domestic role. The second is the inadequacy of the present maternity benefit, act.

When the mother takes up employment outside the home, the care of infants becomes a problem if their is no other female in house hold. In developing countries, the consequences of work out side home on lactation and meteral child health vaired to a large extent depending upon the type of work, place of work, socio-economic and education and availability and utilisation of the health care services. (Ramachandran 1992).

The study on Breatfeeding patterns and factors encouraging early weening, among 141 mothers in Tonela and Tlaquepaque reveals that, the maernal employment is the high risk factor that affecting the duration of brest-feeding. (Vegalopz,M.G., and perez G.J. 1991).

The study on the factors related to the duration of breast feeding in Ankara, also reveals that, the maternal employment have a negative effect on the duration of brest - feeding. (Buyukgebiz, B. et al., 1992).

Using the Ross Laboratories, Mothers survey, a national probability sample of new mothers in the USA, Ryan et al., (1990) examined factors influencing the duration of breast - feeding patterns established in hospitals. (They found that employment status was significantly associated with partial breastfeeding); only about 27% of mother who exclusively breast fed their infants were employed at the time they received the survey questinnaire. Almost half (48%) of the mothers who started partial breast feeding in the hospital worked full-or part - time at the time of the survey. They also found that formal work did not influence the incidence of brest feeding but did influence its duration.

O' Gara (1989) showed that, in urban Houndras, the employed women introduced supplements earlier than non employed women. The International union of Nutritional Scientsts (IUNS) study on infant nutrition policies under changing socio-economic conditions also found that employment status appeared to shorten the duration of exclusive breast feeding when the mother was formally

employed, but it did not diminish breast feeding intiation rates.

Among the urban poor and middle class inhabitants of Bangkok, Semarang (Indonesia) Naiobi, and Bogota, the hours of Seperation and not the fact of working for pay was the factor that resulted in reliance on bottle-feeding (winkoff et al; 1983).

Devades(1994) states that women's reproductive role should be recogonised as a form of "Social Production" as the time spent on maternity should not be viewed as 'absence'from economically productive work but as 'presence'in the economically productive work of reacing the next generation. Hence they need social support from the family, society, state and the employee.

Experimental Procedure

III. EXPERIMENTAL PROCEDURE

The experimental procedure involved in the conduct of the present study, "Breast Feeding pattern among rural and Urban Mothers" is dealt under the following headings:

A. Selection of Area
B. Selection of sample
C. Formulation of the tool
D. Conduct of the study
E. Analysis of the data.

A. Selection of Area:

Two different areas namely Thudiyalur (rural) and North Coimbatore (Urban) situated in Coimbatore district were selected for this study because of the familiarity of these areas and the co-operation of the people. Moreover studies have not been done on the breast feeding practices of the lactating mothers belonging to these areas.

B. Selection of the Sample:

The investigator approached the hospitals present in the above areas and collected the addresses of the nursing mothers who had babies between 0 to 6 months and were attending the hospitals of the above said

areas for immunization regularly. In this, one hundred lactating mothers (50 working and 50 non-working) from rural area and another one hundred mothers (50 working and 50 non-working) from Urban area were selected at random making a total of 200 lactating mothers for the study. The samples selected for the working nursing mothers, were belonging to white collar job such as teachers, nurses and supervisers (25) and blue collar job such as mill workers (25) in both rural and urban area. These mothers belonged to the age group of 20-30 years. A sub-sample of 15 women who were willing to give blood for the estimation of prolactin were selected from each area.

C. **Formulation of the tool:**

To elicit the details about the breast feeding practices among rural and urban mothers, an interview schedule was adopted. This method was selected because an interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses and can be made to yield an almost perfect sample of the general population and give more information that too in greater depth. (Kothari, C.R. 1990).

A detailed interview schedule was prepared to collect information regarding demographic status, maternal status, nutritional status, breast feeding practices, employment status and psychological factors of the selected mothers. The interview schedule used is given in Appendix I.

D. **Conduct of the study:**

The conduct of the study involves the following steps:

1. Conduct of bench mark survey
2. Assessing the nutritional status
    a) Dietary survey
    b) Anthropometry
    c) Clinical survey
3. Measuring blood prolactin level.

1. Conduct of bench mark survey:

The investigator personally visited the subjets and collected the information. Demographic profile such as age, education, occupation,total family income, type of family were collected from all the lactating mothers.

Information on the age at marriage, age at first pregnancy, number of children, birth spacing, immunization taken during pregnancy, and

place of delivery were collected from allthe lactating mothers to study the maternal status.

Information regarding the initiation of breastfeeding, prelacteal feed if any, information regarding colostrun, frequency of breastfeeding in day and night, duration of feeding, sucking pattern, postion of the mother while feeding the baby, exclusive breast feeding period, weaning pratices, nature of breast feeding during illness and drugs used to enhance milk secretion were collected from all the mothers to know the breastfeeding practices.

Information regarding the feeling of heaviness of breast before feeding and relief after feeding the baby, duration of sleep by the baby between two successive feedings, and frequency of urine passed by the baby per day were collected form all the mothers to see whether adequate amount of milk secreted by the mother, or not.

Details regarding reason for emplotment, type of work, system of work, monthly income, duration of work per day, duration of maternity leave given taken, creche facilities available in the work

spot, maternal benefits given, nursing break given, type of arrangement made for cheldren, problems of the mother due to employment in breast-feeding and opinion of the mothers regarding employment were collected from all the working mothers to study the employment status.

Details regarding the care taken during delivery period, family surroundings, emotional burdens if any, were collected from all the mothers to know the psychological factors of the mother.

2. **Assessing the nutritional status:**

Nutritional status of the lactating mother was assessed based on

a) Dietary survey

b) Anthropometry

c) Clinical Survey.

(a) **Dietary Survey:**

Dietary pattern of the lactating mothers was studied to assess the deficiency of dietary factors. Informations on special food taken or avoided during lactation period were collected from all the lactating mothers. Three day weighment survey was carried out for a subsample of 30 mothers (5 from each category) using the schedule (Appendix II) weight of raw ingredients, cooked food, foods consumed by

individuals and leftovers were recorded for 3 days, because individual food intake can be obtained accurately by actual weight of items consumed.(Devdas 1990). Raw equivalents of ingredients were calculated and nutrient intake was computed using food composition table given by Gopalan et.al. (1989).

(b) **Anthropometry:**

Anthropometry is the most commonly used direct method in nutritional assessment and it is widely used in many areas of human biological research. The measurements usually employed are weight and height. These were recorded for all the selected lactating mothers. the weight of the lactating mothers was recorded with minimum clothing after removing the foot wear using the bathroom scale balance. In this type of balance reading correct to 0.5 Kg. can be obtained. Height was measured using a fibre glass tape fixed to the wall. The lactating mother was made to stand erect on the floor bare footed against at the sides, buttocks, shoulders and back of the head touching the wall. A scale was placed gently on the head perpendicular to the wall and the height was measured using the tape correct to 0.1 cm. (Jelliffe and Jelliffe, 1989.)

(c) **Clinical Survey:**

Clinical examination can include the observation and recording of more obvious signs of some nutritionally important conditioning or contributory infections. Clinical examination has always been, and remain, a widely used practical direct method to assess the nutritional status of individuals and communities. (Jelliffe and Jelliffe, 1989). The clinical survey was done for all the lactating mothers to identify any nutritional deficiency signs that might be present.

3. **Measuring blood prolactin level:**

Since proclactin hormone secreted from anterior pituitary is responsible for milk secretion, in response to emptying of the breast at a feeding, blood prolactin level was estimated form the 30 lactating mothers (5 from each category) during the third month after the birth of the baby. Blood was collected from these mothers before feeding the baby and prolactin was estimated by ELISA method suggested by Engrall (1980) and Votila et al., (1981)

E. Analysis of data

The collected data obtained through the study was consolidated, tabulated, statistically analysed by

χ^2 test and students 't' test and interpreted and discussed in the following chapter.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

O = Observed Frequency

E = Expected Frequency

Expected value E = $\frac{\text{Total No. if column x Total No. of Rows}}{\text{Whole total of rows and columns}}$

χ^2 = Distribution is equal to the number of degrees of freedom(v)

$v = (c-1)(r-1)$

c = Column Number

r = Total number of rows

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{1/n_1 + 1/n_2}}$$

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2}}$$

$$s_1^2 = \frac{\sum (X_i - \bar{X}_2)^2}{n_1 - 1}$$

$$s_2^2 = \frac{\sum (X_i - \bar{X}_2)^2}{n_2 - 1}$$

Results and Discussion

IV RESULT AND DISCUSSION

The results of the present study "Breast Feeding pattern among rural and urban mothers' are discussed under the following headings:-

A. DEMOGRAPHIC PROFILE

B. MATERNAL STATUS

C. NUTRITIONAL STATUS

D. BREAST - FEEDING PRACTICES

E. EMPLOYMENT STATUS

F. PSYCHOLOGICAL FACTORS

G. PROLACTIN PROFILE

A. DEMOGRAPHIC PROFILE

Demographic profile such as type of family, educational status and income level of the lactating mothers are given below:

1. Type of family

Among the 200 samples selected, joint family system was adopted by 88 percent of non-working, and 78 percent of working mothers in rural area and 32 percent and 42 percent respectively for the non-working and working mothers in urban area. The remaining mothers in both rural and urban had adopted nuclear family system.

This indicates that joint family system was adopted by large number of rural mothers when compared to urban mothers.

2. Educational Status of the Lactating Mothers:

The educational status of the lacatating mothers is given in Table - I.

TABLE - I

EDUCATIONAL STATUS OF THE LACTATING MOTHERS

SL. No.	Lactating Mothers	Illiterate		Elementary		High School		Higher Secondary		University		Professionals		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Rural														
1.	Non-working	10	20	12	24	20	40	8	16	-	-	-	-	50	100
2.	Working:														
	a. White collar job	-	-	-	-	-	-	-	-	15	60	10	40	25	100
	b. Blue collar job	-	-	-	-	8	32	17	68	-	-	-	-	25	100
	Urban														
1.	Non-working	8	16	9	18	22	44	2	4	9	8	-	-	50	100
2.	Working:														
	a. White collar job	-	-	-	-	-	-	-	-	13	52	12	48	25	100
	b. Blue collar job	-	-	2	8	20	80	2	8	1	4	-	-	25	100

Table - I shows that, in general the educational level of the urban mothers was better than the rural mothers. Illiteracy was found only in the non-working mothers of both rural and urban area. Twenty percent of b rural non-working mothers and 16 percent of urban non-working mothers were illiterates.

3. Income of the seleced mothers:

Income level of the lactating mothers as per the classification of Housing Board Urban Development Corporation (1987) is given in table II.

TABLE - II

MONTHLY FAMILY INCOME OF THE LACTATING MOTHERS

S.No.	Lactating Mothers	Low income below Rs. 1500		Middle Income Rs. 1501-5000		High Income above Rs. 5000		Total	
		N	%	N	%	N	%	N	%
	Rural								
1.	Non-working	10	20	27	54	13	26	50	100
2.	Working:								
	a. White collar job	-	-	-	-	25	100	25	100
	b. Blue collar job	-	-	19	76	6	24	25	100
	Urban								
1.	Non-working	-	-	22	44	28	56	50	100
2.	Working:								
	a. White collar job	-	-	-	-	25	100	25	100
	b. Blue collar job	4	16	21	84	-	-	25	100

From Table - II it can be observed that 20 percent of the families of the non-working lactating mothers in rural and 16 per cent of mothrs of blue -collarjob inurban area wree in the low income group. Cent Percent of the families of the while-collar job category of lactating mothers in both the the rural and urban ara, 26 percent of orural and 56 percent of urban non-workinig mothers and 24 percent of rural blue collar job mothers were in the high income group, and all typeremaining mothers were in middle income group.

B. Maternal Status:

Maternal details such as mother's age at marriage, and first pregnancy, immunization details and place of delivery, number of children and birth spacing are given below:

1. Age at marriage and First pregnancy:

Age at marraige and first pregnancyof the lactating mothers are given Table -III.

TABLE - III

AGE AT MARRIAGE AND FIRST PREGNENCY

S.No.	Lactaing mother	Age at marriage(Years)						Age at first Pregnency(Years)						Total	
		20		20-25		26-30		20		20-25		26-30			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Rural														
1.	Non-Working	39	78	6	12	5	10	30	60	15	30	5	10	50	100
2.	Working:														
	a. White Collar Job	-	-	16	64	9	36	-	-	16	64	9	36	25	100
	b. Blue Collar Job	12	48	10	40	3	12	8	32	14	56	3	12	25	100
	Urban														
1.	Non-Working	3	6	42	84	5	10	2	4	40	80	8	16	50	100
2.	Working:														
	a. White Collar Job	-	-	17	68	8	32	-	-	15	60	10	40	25	100
	b. Blue Collar Job	4	16	19	76	2	8	3	12	15	60	7	28	25	100

Table III shows that early marriage was found in rural area when compared to urban area. Majority of the rural non-working mothers (78 percent) and 48 percent of the rural working mothers were married below 20 yers, whereas inthe urban area only 6 percent of the non-working and 16 percent of the working mothers had been married below twenty years. All the remaining mothers had been married between the age group of 20-29 years.

The same trend prevailed regarding the age at first pregnancy. In this study 60 percent of non-working and 32 percent of theworking rural mothers had their first pregnancy below twenty yers, whereas in urban area, only 4 percent of non-working and 12 percent of workign mothers had their first pregnancy below 20 years. All the others had between 20 to 29 years of age.

2. Immunization details and place of delivery:

During pregnancy, all the selected mothers had regular antenatal check up and immunization. In rural area, 74 percent of non-working and 56b percent of working mothers and in urban area 84 percent of non-working and 76 percent of working mothers had their delivery in the private hospitals and the remaining had their delivery in the near by maternity centres.

3. Number of children and birth spacing:

It was observed that, in rural area, 8 non-working and 3 working mothers had 3 children where as in urban area only 2 non-working mothers had 3 children. All the remaining mothers had either one child or 2 children. This indicates that, small family norm was adopted by most of the urban mothers when compared to rural mothres.

Among the 11 urban multiparous non-working mothers 6 had the mean birth spacing of one year and among the 20 rural multiparious non-working mothers 15 had the mean birth spacing of one year, whereas among the 10 urban multiparious working mothers 2 had the mean birth spacing of one year and 12 rural multiparous

working mothers 3 had the mean birth spacing of one year. The remaining multiparious mothers in both the groups had a mean birth spacing of 2 years and above. This indicates that mean birth spacing was less inthe non-working mothers when compared to working mothers in both the groups.

C. NUTRITIONAL STATUS

Information collected on the general food consusmption pattern showed that in all the groups most of the lactating mothers were non-vegetarians by habit. In the rural area 84 per cent, 92 percent and cent percent respectively 90 percent, cent percent, and 94 percent respectively were non-vegetarians. Though these mothers were non-vegetarians by habit, their consumption of non-vegetarian foods was restricted to special occassions and in very limited quantities.

Nutritional status of the mothers such as special foods taken/avoided due to taboos and superstitious beliefs during lactation period, food and nutrient intake of the mothers, clinical picture and anthropometric profile of the lactating mothers are given below.

1. Special foods taken / avoided:

Special foods consumed/avoided due to taboos and superstitious beliefs by the lactating mothers and the opinion of mothers on foods during lactation period is given in Table - IV.

TABLE - IV
SPECIAL FOODS TAKEN/ AVOIDED BY MOTHERS

S.No.	Special Foods	Rural						Urban						Reasons
		Non-Working		Working *WCJ		*BCJ		Non-Working		Working *WCJ		*BCJ		
		N	%	N	%	N	%	N	%	N	%	N	%	
	Consumed:													
1.	Green leafy Vegetables	20	40	12	48	10	40	12	24	3	12	4	16	To impro
2.	Fish	8	16	2	8	3	12	6	12	2	8	5	20	milk
3.	Milk	10	20	2	8	2	8	10	20	7	28	4	16	secretio
4.	Garlic	-	-	1	4	-	-	-	-	3	12	-	-	
5.	No special food	12	24	8	32	10	40	22	44	10	40	12	48	
	Avoided:													
1.	Egg	40	80	10	40	3	12	8	16	4	16	2	8	Causing Digesti
2.	Meat	-	-	5	20	-	-	-	-	5	20	4	16	Problem to the -child.
3.	Cool Drinks and Ice-Creams	-	-	5	20	2	8	-	-	4	16	3	12	Cold fo -od.
4.	Mango	-	-	-	-	-	-	4	8	-	-	-	-	Hot foo -d.

*WCJ - White collar job * BCJ Blue collar job

Table - IV shows that in rural area, 48 percent, 32 percent and 40 percent of mothers and in urban area 44 percent, 40 percent and48 percent of the mothers in the 3 different categories did not take any special food. All the remaining mothers in both the aras had taken green leafy vegetables, fish and garlic once in a week and milk daily to improve milk secretion.

Traditions and mistaken beliefs still prevent lactating mothers from consuming nutritious foods like egg, meat and mango. In this study 80 percent of the

non-working, 40 percent of the white-colour job and 12 percent of the blue-collar job of the urban and 16 percent, 16 percent and 8 percent respectively in the different categories of rural lactating mothers avoided egg because mothers believed that these foods will produce digestive problem to the child.

2. **Mean food intake of the mothers:**

Mean food intake of the lactating mothers of the different groups compared to ICMR (1981) recommendation is shown in Table-V.

TABLE - V

MEAN FOOD INTAKE OF THE LACTATING MOTHERS

S.No	Food Groups	RDA	Rural						Urban					
			Non-Working	% Deficit/ Surplus	Working: White Collar Job	% Deficit/ surplus	Working: Blue collar Job	% Deficit/ surplus	Non-working	% Deficit/ Surplus	Working: white collar Job	% Deficit/ surplus	Working: Blue collar Job	% Deficit/ surplus
1.	Cereals	400	450	+12.5	415	+3.75	428	+7.0	433	+8.0	425	+6.0	455	+13.0
2.	Pulses	50	45	-1.25	42	-2.0	48	-0.5	40	-2.5	45	-1.25	42	-2
3.	Green leafy vegetables	100	92	-8.0	84	-16.0	82	-18.0	90	-10.0	92	-8	88	-12
4.	Other Vegetables	75	80	+6.0	85	+13.0	78	+4.0	80	+6.0	75	-	82	+9.0
5.	Roots & Tubers	75	52	-30.0	70	-6.0	75	-	75	-	70	-6.0	65	-13.0
6.	Friuts	110	70	-36.0	40	-63.0	38	-65.0	100	-9.0	90	-18.0	50	-54.0
7.	Milk & Milk products	550	550	-9.0	518	-5.8	538	-2.0	400	-27.0	550	-	500	-9.0
8.	Oil Seeds & fat	50	70	+40.0	66	+32.0	48	-4.0	80	+60.0	58	+16.0	67	+34.0
9.	Sugar and Jaggery	30	45	+50.0	46	+53.0	48	+60.0	40	+33.0	42	+40.0	40	+33.0
10.	Meat & Fish	100	120	+20.0	80	-20.0	98	-2.0	82	-18.0	87	-13.0	84	-16.0
11.	Egg	30	10	-66.0	12	-60.0	19	-36.0	13	-56.0	10	-66.0	15	-50.0

Although the mothers had increased their intake of food amount during lactation period, yet inadequacy was noted inthe consumption of pulses, green leafy vegetables and fruits. All the mothers had consumed cereals more than the recommended dietary allowance of ICMR.Consumption of protective foods like pulses, green leafy vegetables, fruits, milk and milk products, was below the recommendation level in all the groups. While there was a deficit for both working and non-working groups in both urban and rural, the deficit appeared to be more prominent among the rural working mothers.

Mean nutrient intake of the lactating mothers:

Mean nutrient intake of the selected lactating mothers of the different group compared to ICMR (1989) recommendation is depicted in Table VI.

TABLE - VI
MEAN NUTRIENTS INTAKE OF THE MOTHERS

S.No	Nutrients	RDA	Rural						Urban					
			Non-Working	% Deficit/ Surplus	White collar Job	Working %Defi-cit/ surplus	Blue collar Job	%Defi-cit/ surplus	Non-Working	% Deficit/ Surplus	White collar Job	%Defi-cit/ surplus	Blue collar Job	%Defi-cit/ surplus
1.	Energy K-cal	2775	3400	+18.0	3000	+7.5	2995	+7.0	3025	+8.0	3000	+7.5	3135	+11.48
2.	Protiein(g)	75	42	-44.0	58	-22.0	55	-26.0	60	-20.0	90	+20.0	70	-7.0
3.	Fat (g)	45	40	-11.0	38	-15.0	35	-23.0	40	-11.0	43	-4.0	42	-6.0
4.	Calcium (mg)	1000	1445	+44.0	1500	+50.0	1485	+48.0	1122	+12.0	1028	+2.8	1116	+11.6
5.	Iron (mg)	30	34	+13.0	30	-	40	+25.0	27	-10.0	33	+10.0	36	+20.0
6.	Retinol (ug)	950	900	-5.0	695	-36.0	700	-35.0	800	-18.0	750	-26.0	650	-46.0
7.	Thiamin (mg)	1.4	2	+42.0	1	-28.0	1.5	+7.0	1.3	-7.0	1.2	-14.0	1.2	-14.0
8.	Ribo Flavin(mg)	1.6	1.6	-	2	+2.5	1.6	-	1.7	+6.0	2	+25.0	1.7	+6.0
9.	Niacin (mg)	18	20	+11.0	22	+22.0	18	-	20	+11.0	22	+18.0	19	+5.0
10.	Ascorbic acid (mg)	80	100	+25.0	140	+75.0	80	-	90	+12.5	100	+25.0	85	+6.0

The mean nutrient intake of the selected mothers revealed that their diets were more or less normal in all the nutrieints when compared to the values recommended by ICMR (1989) except for protein, fat, retinol and thiamine. Protein available through the diet was low with a deficit of 44 percent, 22 percent and 26 percent respectively for the different categories of rural and 20 percent of the urban non-working and 6 percent of the urban blue-collar job mothers. Retinol deficit was seen in 5 percent, 36 percent, and 35 percent respectively for the different categories of urban lactating mothers. Iron available through the diet was low with the deficit of 10 percent for the urban non - working group, consumption of energy, calcium, riboflavin, niacin, and ascorbic acid was more when compared to recommended dietary allowance for all the mothers.

3. Clinical picture of the lactating mothers:

Nutrition deficiency symptoms are given in Table - VII.

TABLE - VII
CLINICAL OBSERVATION OF THE LACTATING MOTHERS

S.No.	Deficiency Symptoms	Rural						Urban					
		Non-Working		Working White collar job		Working Blue collar job		Non-Working		Working White collar job		Working Blue collar job	
		N	%	N	%	N	%	N	%	N	%	N	%
1.	Thin hair & sparseness	2	4	-	-	-	-	-	-	-	-	-	-
2.	Pale conjucative	3	6	-	-	3	12	-	-	-	-	-	-
3.	Weakness & easy fatiguability	5	10	8	32	9	36	8	16	9	36	15	60
4.	No symptoms	40	80	17	68	13	52	42	84	16	64	10	40

From the above table, it is clear that, in rural area, majority of the mothers in three different categories (80 percent,, 68 percent and 52 percent) remained free without any nutritional deficiency symptoms. Only 4 percent of non-working women had thin and sparseness hair. 6 percent of non-working mothers and 12 percent of blue collar job mothers had pale conjuctiva. Weakeness and easy fatiguability were seen in 10 percent of non-working, 32 percent of white-collar job and 36 percent of blue-collar job mothers in rural area. In urban area 16 percent of non-working, 36 percent ofwhite-collar job and 60 percent of blue-collar job mothers had a complaint of weakness and fatiguability and all the others remained free without any nutritional deficiency symptoms.

4. Anthropometric profile of the lactating mothers:

Anthropometric profile such as height and weight of the lactating motehrs is given in Table - VIII.

TABLE - VIII

WEIGHT AND HEIGHT OF THE LACTATING MOTHERS

S.No.	Lactating mothers	Weight (Kg)								mean weight (Kg)	Height (cm)								Mean Height (cm)
		<45		45-54		55-64		65 & above			<145		145-154		155-164		165 & above		
		N	%	N	%	N	%	N	%		N	%	N	%	N	%	N	%	
	Rural																		
1.	Non-working	3	6	9	18	16	32	22	44	60	-	-	17	34	18	36	15	30	160
2.	Working:																		
	a. White collar job	2	8	7	28	8	32	8	32	56	-	-	4	16	17	68	4	16	163
	b. Blue collar job	2	8	6	24	15	60	2	8	52	-	-	8	32	13	52	4	16	159
	Urban																		
1.	Non-working	3	6	12	24	20	40	15	30	63	-	-	9	18	26	52	15	30	161
2.	Working:																		
	a. White collar job	4	16	7	28	10	40	4	16	57	-	-	6	24	9	36	10	40	164
	b. Blue collar job	2	8	8	32	11	44	4	16	55	-	-	7	28	12	48	6	24	163

Body weight less than 45 kg was found in 18 percent, 26 percent of the rural non-working and working mothers and 6 percent and 12 percent of the urban non-working and working mothers. Mean weight was slightly higher for the non-working mothers when compared to working mothers in both the areas. The mean body weight of the three categories of rural mothers were 60 kg, 56 kg, and 52 kg respectively as against 63 kg, 57 kg and 55 kg for the urban mothers.

Mean heights were found to be 160 cm, 168cm, and 159 cm for the different categories of rural mothers and 161 cm, 164 cm, and 163 cm for the urban mothers respectively. Thus the meanheight was found to be little low in rural mothers when compared to urban mothers. As per the criterian recommended by NFI (1988) by which the mothers are adjudged as being at risk during child birth when the height is less than 145cm, it can be deduced that no one in the selected mothers could be considered to be at risk.

D. BREAST FEEDING PRACTICES:

All the non-working mothers, in both the rural and urban area, fed their children based on demand schedule. All the working mothers in both the areas fed based on time schdule. All the selected samples fed their children from both the breasts. None of the samples

cleaned their breast before feeding,and no one had the habit of expression of milk and had any strucrual defects in the nipples.

Initiation of breast feeding, information regarding prelacteal feed, and colostrum, frequency of breast-feeding, duration of feeding, sucking pattern and position of the mother, nature of breast feeding during mother's illness, signs and symptoms of adequate milk secretion by the mothers, drugs used by the mothers for lactation, exclusive breast feeding and partial feeding and supplementary foods given to the child are given below:

1. Initiation of breast feeding:

Details regarding the initiation of breast - feeding is given in Table IX

TABLE - IX

INITIATION OF BREAST - FEEDING

S.No.	Lactating Mother	<5 Hours N	%	5-10 Hours N	%	>10 Hours N	%	Total N	%
	Rural								
1.	Non-Working	33	66	7	14	10	20	50	100
2.	Working:								
	a. White collar job	19	76	2	8	4	16	25	100
	b. Blue collar job	16	64	2	8	7	28	25	100
	Urban								
1.	Non-Working	32	64	6	12	12	24	50	100
2.	Working:								
	a. White collar job	21	84	2	8	2	8	25	100
	b. Blue collar job	13	52	7	28	5	20	25	100

Table - IX indiciats that, in rural area, majority of the mothers (66 percent, 76 percent and 64 percent) in the three different categories and in urban area, 64 percent, 82 percent and 52 percent of the three different categories initiated breastfeeding with in five hours after delivery. Twenty percent ofrural non- working and 22 percent of rural working mothers and 24 percent and 14 percent of the urban non-working and working mothers started to feed their babies only after 10 hours of delivery due to caesarian. All the remaining mothers initiated breast feeding between 5-10 hours after delivery. Similar observation was noted by Madrni, K.A. (1994) in which he observed that in Saudi Arabia, 64.1 percent of mothers started to breastfeed their babies within 6 hours of delivery.

2. Information regarding prelacteal feed and colostrum:

Prelacteal feed givento the infants is shown in Table-x and in figure - I

TABLE - X

PRELACTEAL FEED GIVEN TO THE INFANTS

S.No.	Lactating mother	No Prelacteal feed		Prelacteal feed						Total		χ^2 Value
				Sugar Water		Honey		Both				
		N	%	N	%	N	%	N	%	N	%	
	Rural											
1.	Non-Working	26	52	20	40	-	-	4	8	50	100	
2.	Working:											
	a. White collar job	6	24	12	48	7	28	-	-	25	100	
	b. Blue collar job	5	20	11	44	7	28	2	8	25	100	
	Urban											9.42
1.	Non-Working	28	56	11	22	8	16	3	6	50	100	
2.	Working:											
	a. White collar job	20	80	3	12	2	8	-	-	25	100	
	b. Blue collar job	12	48	7	28	3	12	3	12	25	100	

From the Table - X it can be observed that prelacteal feed was given by most of the rural mothers when compared to urban mothers. In rural area, 52 percent, 24 percent and 20percent of mothers in the

Prelacteal feed given

to the infants

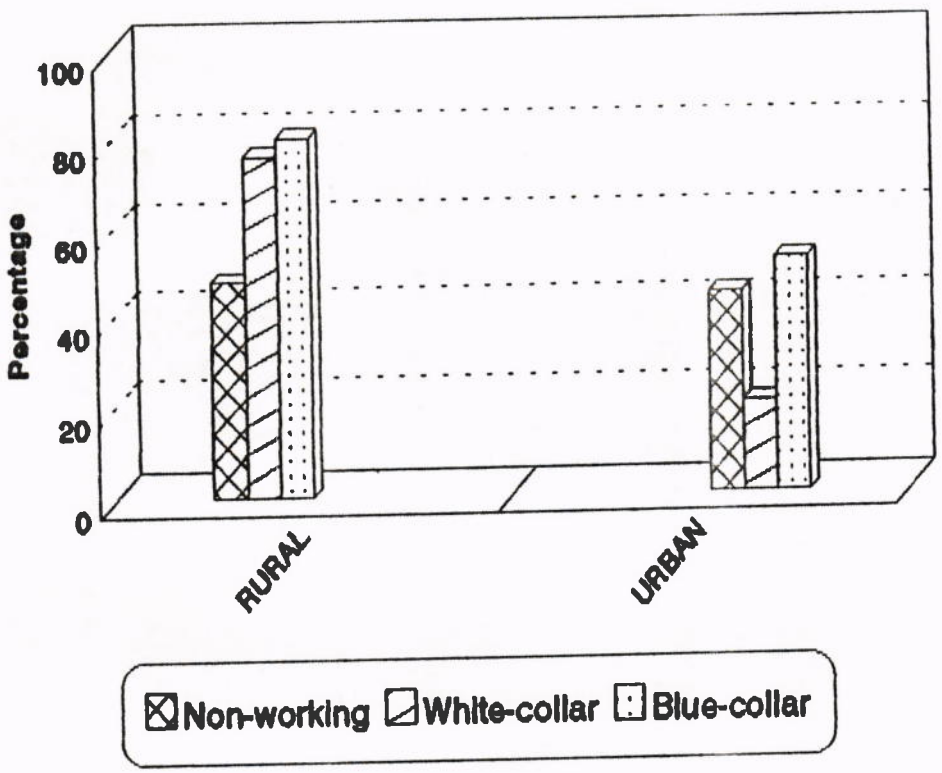


Fig. I

three different categories did not give any prelacteal feed, where as in urban area 56 percent, 30 percent, and 48 percent of mothers in the three different categories did not give anyprelacteal feed. All the remaining mothers gave either sugar water, honey orboth as prelacteal feed. Similar observations were noted by Kaur et al., (1990), they observed that in Hisar,59.3 percent gave water and honey as prelacteal feed. Statistical analysis of the data indicated a significant difference at 1 % level between the rural and urban mothers. In rural area, 52 percent, 24 percent and 20 percent of mothers in the three different categories gave colostrum to their children, whereas in urban area, 56 percent, 80 percent, and 48 percent of mothers in the three different categories gave colostrum to their children. This result indicates that most of the urban mothers gave colostrum to their children when compared to rural mothers. statistical analysis reveaveled a significant diffrerence at one percent level between the rural and urban mothers.

3. **Frequency of breast feeding:**

Almost all the mothers breastfed their babies

during day time and night time. Frequency of breast feeding was less for the infants of the working mothers when compared to the infants of the non-working mothers in both the rural and urban areas.

Ninety two percent of the rural and 82 percent of the urban non-working mothers breastfed their babies nearly 6-7 times in day as against 40 percent and 36 percent for the rural and urban working mothers. The remaining mothers in both the rural and urban areas, breast fed their babies 4 to 5 times a day. In night time all the selected mothers breast fed their babies 2-3 times. The figures of the present study are in accordance with the observations reported by Nandan et al., (1991). They obsered that in Agra, the average frequency of feeding to children were 4.53 in day time and 2.96 in night time.

4. Duration of feeding:

Majority of the mothers in rural area, (54 percent of non-working and cent percent of working) and in urban area 86 percent of non-working and 90 percent of working mothers fed their babies for 7-10 minutes. The others took 4-6 minutes per feed.

5. Sucking pattern and position of the mother:

In rural area 22 percent, 60 percent, and 20 percent of mothers and in urban area, 38 percent, 68 percent, and 12 percent of mothers in the three different categories allowed their children to suck, nipple and aneola together, all the remaining mothers in both the areas allowed their children to suck only nipple.

Fourty four percent of rural non-working 48 percent of rural working, forty six percent of urban non-working 50 percent of urban working mothers strictly followed sitting position and all the remaining mothers followed both recumbent and sitting position while feeding the baby.

6. Nature of breast-feeding during mother's illness:

In rural area, 10 non-working mothers, 9 working mothers and in urban area, 20 non-working and 19 working mothers had either fever or allergy and cold or digestive disorders during lactation period. None of the mothers fed their children during their illness. They used cow's milk, or commercial milk powders as alternative foods.

7. Signs and symptoms of adequate milk secretion by the mothers:

According to Gandhimathi.J. (1995) feeling of heaviness of breast before feeding and relief after feeding the baby, and when the child was fed in one breast, another breast started oozing the milk were the good sings of adequate milk secretion, and the children who fed with adequate amount of milk, used to sleep 2 hours in between 2 feedings and they were used to pass the urine more than 6 time a day.

Based on this, in the present study, 84 percent, 68 percent and 65 percent of rural mothers and 78 percent, 52 percent and 60 percent of urban mothers in the three different categories expressed that they had the feeling of heaviness of breast before feeding and the relief after feeding the baby. Seventy percent, 54 percent and 53 percent of rural and 72 percent, 46 percent and 52 percent of urban mothers expressed that they had the sign of oozing of milk while feeding the baby. Eighty two percent, 80 percent and 83 percent of rural and 72 percent, and 75 percent and 85 percent of urban children had more than two hourse of sleep between

two successive feedings and 86 percent , 89 percent and 90 percent of rural, 86 percent, 82 percent and 85 percent urban children passed urine more than 6 times per day.

8. drugs used by the mothers for lactation:

In rural area, 10 percent of non-working and 16 percent of working and in urban area 20 percent of non-working and 10 percent of working mothers used ayurvedhic drugs like pathiri ver, keezhanelli to imporve milk secretion.

9. Exclusive breast feeding and partial breast feeding:

Period of exclusive breast feeding and partial breast feeding is given in table-XI and in figure II

TABLE - XI

EXCLUSIVE AND PARTIAL BREAST FEEDING

S.No.	Lactating mothers	Exclusive breast feeding Duration in months								Partial Breast Feeding Duration in months							
		Upto 2		3-4		5-6		>6		Upto 2		3-4		5-6		>6	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Rural																
1.	Non-Working	8	16	36	72	6	12	-	-	-	-	-	-	44	88	6	12
2.	Working:																
	a. White collar job	25	100	-	-	-	-	-	-	-	-	-	-	25	100		
	b. Blue Collar job	25	100	-	-	-	-	-	-	-	-	-	-	25	100		
	Urban																
1.	Non-Working	15	30	30	60	5	10	-	-	-	-	-	-	45	90	5	10
2.	Working:																
	a. White collar job	25	100	-	-	-	-	-	-	-	-	-	-	25	100		
	b. Blue Collar job	25	100	-	-	-	-	-	-	-	-	-	-	25	100		

In rural area, 16 percent of non-working, cent percent of working and in urban area, 30 percent of nonworking and cent percent of working mothers had exclusively breastfed only for a period of 2 months and started giving suplementary foods. The reasons expressed for partial breast feeding were employment and milk insufficiency. Seventy two percent of rural

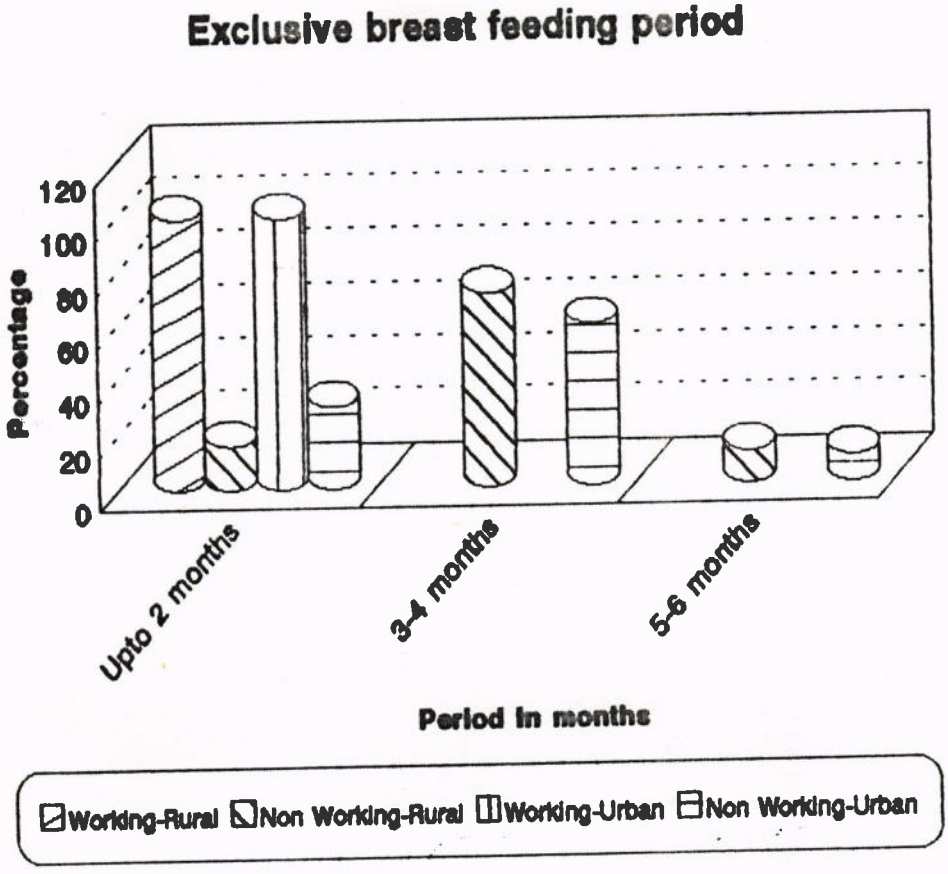

Exclusive breast feeding period
Percentage
120
100
80
60
40
20
0
Upto 2 months
3-4 months
5-6 months
Period in months
Working-Rural
Non Working-Rural
Working-Urban
Non Working-Urban

Fig. II

nonworking and 60 percent of urban non-working had exclusively breast-fed for a period of 3 months and the reason expressed for partial breast feeding was customs and cultural influences. Only 12 per cent of rural and 10 percent of urban non-working mothers had exclusively breastfed for a period of 6 months. Similar observation was noted by Ryan et al. (1990). They found that employment status was significantly associated with partial breast feeding.

10. Supplementary foods given to the child:

Except 10 percent of urban, and 12 percent of rural non-working mothers, all the remaining mothers in the present study introduced liquid or solid supplements before 6 months. Liquid supplements were introduced by all the working mothers, and 6 percent of the rural and 5 percent of the urban non-working mothers even before three months. The remaining mothers introduced liquid / solid, supplements, at the age of 3 to 6 months. Simi lar observations were also noted by Kaur et al (1990), they observed that, majority of the mothers in Hisar started artificial feeding at the age of 3 to 6 months period. The supplements in both rural and urban areas consisted of commercial milk powder, cowmilk, baby foods, ragigruel, and idly.

E. EMPLOYMENT STATUS

Employment details such as reason for employment, type of work, monthly salary of the mother, working hours per day, maternity leave benefits, creche facilities in the work spot arrangement made for child care, problem and opinion of the mothers regarding employment are given below:

1. Reason for employment:

In both the rural area and urban area, majority of the mothers in white collar job category (80 percent and 72 percent) and cent percent of blue collar job category expressed that they were working to improve the economic status. Only 24 percent and 28 percent of rural and urban white collarjob mothers had taken employment just to spend their time usefully.

2.Type of work:

All the selected samples were working as ful time workers. In rural area 80 percent of white-collar job and 60 percent of blue-collar job mothers and in urban area 78 percent of white-collar and 68 percent of blue- collar job mothers were working in a regular system. The remaining were working in shift system.

3. Duration of working hours:

Duration of working hours of the working lactating mothers studied is presented in Table-XII.

TABLE - XII

DURATION OF WORKING HOURS PER DAY

S.No.	Lactating Mothers	<8 Hours N	<8 Hours %	8 Hours N	8 Hours %	>8 Hours N	>8 Hours %	Total N	Total %
	Rural								
1.	Working :								
	a. White collar job	20	80	5	20	-	-	25	100
	b. Blue collar job	-	-	4	16	21	84	25	100
	Urban								
1.	Working:								
	a. White collar job	20	80	5	20	-	-	25	100
	b. Blue collar job	-	-	10	40	15	60	25	100

From Table - XII it can be observed that, in both the areas, majotity of the white-collar job mothers (80 percent) were working below 8 hours and the remaining 20 percent worked for 8 hours per day, whereas 84 percent of urban and 60 percent of rural blue collar job mothers worked for more than 8 hours and the remaining were worked for 8 hours. Thus working hours were more for the blue-collar job mothers when compared to white collar job mothers in both rural and urban areas.

4. Monthly salary and maternity leave benefits:

Monthly salary of the lactating mothers is given in Table - XIII.

TABLE - XIII

MONTHLY SALARY OF THE LACTATING MOTHERS

S.No.	Lactating Mothers	<1500 Rs.		Rs.1501-5000		Rs. 5000- & above		Total	
		N	%	N	%	N	%	N	%
	Rural								
1.	Working :								
	a. White collar job	-	-	8	32	17	68	25	100
	b. Blue collar job	6	24	19	76	-	-	25	100
	Urban								
1.	Working:								
	a. White collar job	-	-	5	20	20	80	25	100
	b. Blue collar job	8	32	17	68	-	-	25	100

Table - XIII shows that monthly salary was high for the white collar job mothers than the blue collar job mothers in both the rural and urban areas. Sixty eight and eighty percent of rura; and urban white-collar job mothers were earning Rs 5000 and above as monthly income and the remaining thirty two percent and 20 percent were earning between Rs 1501 - 5000 as monthly income. Whereas majority of the blue collar job mothers in both rural and urban area (76 percent and 68 percent) were earning Rs.1501-5000 as monthly income, and the remaining 24 percent and 32 percent of mothers were earning less than 1500 rupees per month.

Cent percent white-collar job mothers in both the rural and urban area, and 60 percent, 64 percent urban blue collar job mothers were given 3 months maternity leave and the remaining had maternity leave for 84 days. Only 20 percent of rural and 24 percent of urban blue- collar job mothers and 12 percent of urbam white-collar job mothers did not get the salary during their maternity leave period.

5. Arrangements made for the Child care:

None of the selected sample had creche facilities, or nursing break in their work spot. Only 28 percent of rural and 40 percent of urban white-collar job mothers left their babies in the care of servants, and twelve percent of urban white-collar job mothers left their children in the near by creches, and all the reamining mothers left their children under the care of in-laws and grand parents - only 20 percent of rural and 12 percent of urban white-collar job mothers were not satisfied by the arrangement, because these mothers left their children to their servants.

6.Problems faced by the lactating mothers:

Problems of the lactating mothers studied is given in Table- XIV.

TABLE - XIV

PROBLEMS OF THE LACTATING MOTHERS

S.No.	Problems	Rural- Working				Urban-Working			
		White collar job		Blue collar job		White collar job		Blue collar job	
		N	%	N	%	N	%	N	%
1.	Unable to look after the child during illness	18	72	16	64	16	64	15	60
2.	Inability to feed the baby in time	25	100	25	100	25	100	25	100
3.	Become tired after work	4	16	8	32	5	20	7	28
4.	Too tight work	3	12	20	80	5	20	22	88
5.	Tension	22	88	4	16	25	100	7	28

From the table-XIV it was observed that cent percent of the selected samples revealed their inability to feed their babies in time. More than 50 percent of the mothers in all the categories expressed that they were unable to look after their babies during their illness. Majority of the blue-collar job in both the areas (30 percent and 88 percent) had tight work, 88 percent and cent percent of the white collar job mothers in both the areas had tension in their working places.

7. Opinion of the mothers regarding employment:

All the working mothers expressed that, employment is necessary for the women to support their family income. They suggested that maternity leave should be extended with full pay for 2 years. They also expressed that nursing break, and creche facilities should be provided by the employer.

F.PSYCHOLOGICAL FACTORS OF THE MOTHERS:

According to Hussain and Haldar (1993) Psychological factors of the mother inhibit milk secretion. A relaxed environment usually stimulates nursing. Gandhimathi.J, (1995) reveals that the mother's emotional burdens and lack of self confidence will affect milk secretion, Confident and cheerful approach from those who attend the mother in a friendly and sympathetic environment will go a long way in creating the emotional environment in which the

psychological process of lactation can be inhibited and developed (Ebrahim G.J. (1980).

Care taken by the mothers during delivery period, family surroundings and emotional burdens of the mothers are given below.

1.Care taken during delivery period:

In both the rural and urban areas, majority of the mothers were looked after by their mothers during their delivery period. Only in urban area 6 percent of non-working and 8 percent of working mothers were looked after by the servants. All the mothers revealed that they were satisfied by the care taken by others during their delivery period. In both the rural and urban areas, majority of the mothers went to their mother's for rest after delivery and all the selected samples were satisfied with their family surroundings.

2.Emotional burdens:

Emotional burdens of the lactating mothers studied and the reason for that is given in Table - XV.

TABLE - XV

EMOTIONAL BURDENS OF THE LACTATING MOTHERS

S.No.	Lactating Mothers	No emotional burdens		Girl child		Financial Problem		Total	
		N	%	N	%	N	%	N	%
	Rural								
1.	Non-Working	47	94	3	6	–	–	50	100
2.	Working								
	a. White collar job	25	100	–	–	–	–	25	100
	b. Blue collar job	20	80	5	20	–	–	25	100
	Urban								
1.	Non-Working	35	70	8	16	7	14	50	100
2.	Working								
	a. White collar job	25	100	–	–	–	–	25	100
	b. Blue collar job	23	92	2	8	–	–	25	100

In rural area 6 percent of non-working and 20 percent of working mothers and in urban area 16 percent of non-working and 8 percent of working mothers had emotional tension because of the girl child only 14 percent of urban non-working mothers revealed that they had financial problem. All the remaining mothers were free without any emotional problem. All the selected samples revealed that they got moral support form their husbands, among the 25 emotionaly tensed mothers, 19 mothers expressed that they had poor milk secretion.

G.Prolactin Profile:

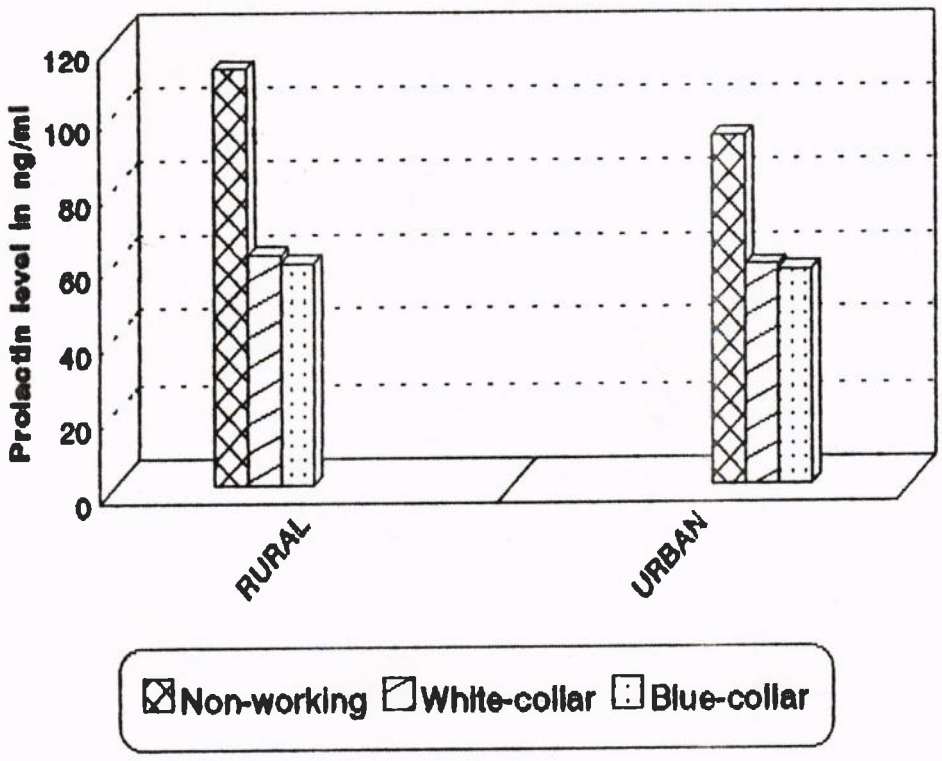
Mean serum prolactin Level of mothers is given in Table - XVI and in figure - III.

TABLE - XVI
MEAN SERUM PROLACTIN LEVEL

S.No.	Lactating mothers	Normal value ng/ml (NIN 1980)	Mean Serum prolactin value ng/ml	Comparision	't' Value
	Rural				
1.	Non-Working		112.3		
2.	Working:				
	a. White collar job		61.4	1 VS2	2.88 *(S)
	b. Blue collar job	53.2	59.5		
	Urban				
1.	Non-Working		93.5		
2.	Working:				
	a. White collar job		58.5	1 VS2	1.76 *(NS)
	b. Blue collar job		57.4		

*S- Significant *NS- Not significant

Mean Serum Prolactin level of mothers



Scale 1 cm = 20 ng/ml

Fig. III

Prolactin is the important lactogenic hormone in milk secretion. The basal level of serum prolactin level was found to be 53.2 ng/ml at 1-2 months of lactation with no significant change subsequently during lactation (NIN 1980). In the present study mean prolactin level was 112.3 ng/ml, 61 ng/ml and 59.5 ng/ml for the rural and 93.5 ng/ml, 58.5 ng/ml and 57.4 ng/ml respectively for the urban in all the three categories. This indicates that prolactin level was much higher for the non-working mothers when compared to working mothers. Nikitina et al (1992) observed that early initiation and repeated breast feeding were correlated with higher blood prolactin and increased milk out. In the present study frequency of feeding was higher for the non-working mother when compared to working mothers and this may be the reason for the higher prolactin level among the non-working mothers. Statistical analysis of Serum prolactin levels indicated a significant difference between rural non-working and working mothers and non-significant for the urban non-working and working mothers.

Summary and Conclusion

V. SUMMARY AND CONCLUSION

The present study entitled "Breast Feeding Pattern among rural and urban mothers" is an attempt to compare the breast feeding practices of the rural and urban lactating mothers. Two different areas namely Thudiyalur (rural) and North Coimbatore (urban) situated in Coimbatore District were selected for this study. For this 200 lactating mothers who had babies between 0 to 6 months were selected. In this one hundred lactating mothers (50 working and 50 non working) from rural area and another one hundred mothers (50 working and 50 non working) from urban area. The samples selected for the working nursing mothers were belonging to white collar job such as teachers, nurses and supervisers (25) and twentyfive mill workers (blue collar job) in both rural area and urban area. These mothers belonged to the age group of 20-30 years.

Information regarding socio-economic back ground, maternal status, nutritional status, employment status and psychological factors of the mothers were gathered through the schedule prepared for this purpose. Breast feeding practices such as initiation of breast feeding, prelacteal feed, frequency of breast feeding, duration of feeding, exclusive breast feeding, supplementary foods given to the children, drugs used by the mothers for lactation were obtained through the survey. Since prolactin hormone is responsible for milk secretion,

serum prolatin level was assessed on 30 nursing mothers.

FINDINGS OF THE STUDY:

1. All the 200 nursing mothers belonged to the age group of 20-30 years. Joint family system was adopted by large number of rural mothers when compared to urban mothers.

2. Illiteracy was found only in the non-working mothers of rural and urban area. Twenty percent of rural non-working and 16 percent of urban non-working mothers were illiterates. All the remaining mothers had primary, high school, higher secondary and university education.

3. Only twenty percent of the rural non-working lactating mothers and 16 percent of the urban blue collar job mothers were in the low income group and the remaining mothers were in the middle income group or high income group.

4. Teenage pregnancy was found more in the rural area when compared to urban area. Sixty percent of non - working and 32 percent of working rural mothers had their first pregnancy before 20 years of age whereas in urban area only 4 percent of non- working and 12 percent of working mothers had their first pregnancy below 20 years.

5. Small family norm was adopted by most of the urban mothers when compared to rural mothers.

6. Mean birth spacing was more for the working mothers when compared to non-working mothers.

7. Majority of the mothers were non-vegitarians by habit, Traditions and mistaken beliefs still prevent lactating mothers from consuming nutritious foods like egg, meat and mango.

8. All the mothers in the present study had consumed cereals more than the recommended level. Protective foods like pulses, green leafy vegetables, milk and milk products and fruits were below the recommendation level in both rural and urban area.

9. The mean nutrient intake was more or less optimum in both rural and urban area except for protein, fat retinol and thiamine.

10. Eight percent of non-working, 68 percent and 52 percent of working rural mothers and 88 percent, 64 percent and 40 percent of the urban mothers remained free without any nutritional deficiency symptoms.

11. Mean weight was slightly higher for the non-working mothers when compared to working mothers in both the areas. The mean weight of the three categories of rural mothers were 60 kg, 56 kg and 52 kg respectively as against 63 kg, 57 kg and 55 kg for the urban mothers.

12. In rural area 66 percent, 76 percent and 64 percent respectively for the three different categories and in urban area 64 percent, 82 percent and 52 percent mothers initiated breast feeding soon after delivery.

13. Prelacteal feed was given by most of the rural mothers, when compared to urban mothers. The common prelacteal feeds reported to have given were sugar water and honey.

14. In rural area, 52 percent, 24 percent and 20 percent of the mothers in the three different categories and in urban area, 56 percent, 80 percent and 48 percent of the mothers gave colostrum to their children.

15. All the mothers in both rural and urban breast fed their babies during day time and night time. Frequency of breast feeding was less for the infants of the working mothers when compared to the infants of the non-working mothers.

16. In rural area, 22 percent, 60 percent and 20 percent of mothers and in urban area, 38 percent, 68 percent and 12 percent of mothers in the three different categories allowed their children to suck nipple and areola together.

17. None of the mothers breast fed their babies during their illness.

18. Eightyfour percent, 68 percent and 65 percent of rural mothers and 78 percent, 52 percent and 60 percent of urban mothers in the three different categories expressed that they had the feeling of heaviness of breast before feeding and relief after feeding the baby.

19. Twelve percent of rural and 10 percent of urban non-working mothers had exclusively breast fed for a period of 6 months.

20. Liquid supplement was introduced by all the working mothers, 6 percent of the rural and 5 percent of the urban non-working mothers even before three months due to employment and milk insufficiency.

21. In both the rural and urban area, majority of the mothers expressed that employment is necessary for women to improve the economic status of the family.

22. None of the selected sample had creche facilities or nursing break in their places of work.

23. Cent percent of the selected working mothers revealed their inability to feed their babies in time.

24. In rural area, 6 percent of non-working and 20 percent of working mothers and in urban area 16 percent of non-working and eight percent of working mothers had emotional tension. Among the 25 emotionaly tensed mothers, 19 mothers expressed that they had poor milk secretion.

25. A significant increase in the prolactin content was observed among the non-working mothers. Mean serum prolatin levels were 112.3 ng/ml, 61.4 ng/ml and 59.5 ng/ml for the rural mothers and 93.5 ng/ml, 58.5 ng/ml and 57.4 ng/ml respectively the urban mothers.

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Appendices

APPENDIX - I

AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION
FOR WOMEN (DEEMED UNIVERSITY)
COIMBATORE - 641 043

INTERVIEW SCHEDULE TO ELICIT INFORMATION REGARDING BREAST FEEDING PRACTICES

I Demographic Status :

1. Study center : Rural [ ] Urban [ ]
2. Name of the interviewee :
3. Are you a Housewife [ ] Working women [ ]
4. Age :
5. Address :
6. Religion :
7. Community :
8. Educational status of the mother:
9. Total income of the family :
10. Type of the family : Joint [ ] Nuclear [ ]

II Marital status

1. Mother's height (cm) :
2. Mother's weight (kg) :
3. Age at marriage
4. Age at first pregnancy :
5. Number of children :
6. Original position of the present child :
7. Birth spacing :

8. Have you taken regular immunization during pregnancy?
   Yes [ ] No [ ]

9. Place of delivery :

   a. House : [ ]

   b. Hospital : [ ]

   c. Maternity center : [ ]

III Breast feeding Practices:

1. Are you particular in breast feeding ?
   Yes [ ] No [ ]
   Give reason

2. Did you breast feed your baby soon after birth?
   Yes [ ] No [ ]
   If no,

   a. Indicate the duration of the delay :

   b. Reason for the delay :

3. Did you give prenatal feed ?
   Yes [ ] No [ ]

   If yes, what did you give ?

4. Was our baby fed with cholestrun?
   Yes [ ] No [ ]

5. Do you clean the breast before you feed the baby?
   a. Demand [ ] b. Time schedule [ ]

7. Specify the number of breast feeding per day

S.No	Months	Number of feeds per day
1.	I Month	
2.	II Month	
3.	III Month	
4.	IV Month	
5.	V Month	
6.	VI Month	

8. Duration of breast feeding per feed :

9. Do you feed the baby during nights?
   Yes [ ] No [ ]
   If yes, how many times?

10. Do you feed you baby from one or both breast at each feed?

11. Do you allow the baby to suck only the nipple or aneola and nipple together?

12. Do you follow any particular posture during breast feeding?
   Yes [ ] No [ ]

   If yes, specify

13. Do you have the habit of expression of milk ?

Yes [ ] No [ ]

If yes, which of the following method you used?

a. Hand method : [ ]

b. Mechanical aids method : [ ]

14. How many months did you exclusively breast feed your baby ?

15. Do you feel heaviness of breast before feeding ?
Yes [ ] No [ ]

16. Do you feel free from heaviness of breast after feeding?
Yes [ ] No [ ]

17. Do the other breast oozes milk when the baby is fed in one breast ?
Yes [ ] No [ ]

18. Do you have any structural defect in your nipples?
Yes [ ] No [ ]

If yes, specify

a. Flat nipples : [ ]

b. Inverted nipples : [ ]

c. Short and non proctractile nipples : [ ]

d. others

19. Do you use any mechanical aid to get retard this problem?
Yes [ ] No [ ]

if yes, specify

a. Nipple shell : [ ]

b. Nipple shield : [ ]

c. Rubber nipple : [ ]

20. Do you take any drugs for lactation ?
Yes [ ] No [ ]

21. Did you feed your child during you illness?
Yes [ ] No [ ]

If no, what did you give supplement in the place of breast milk.

22. How many times the child passes urine per day?

23. How long the child sleeps in between 2 feeding?

24. Do you supplement your child with any other food?
Yes [ ] No [ ]

S.No.	Type of food	Quantity	Age of introduction	Reason
1.	Liquid supplementation			
2.	Solid supplementation			

IV **Nutritional Status :**

1. Are you Vegetarian [ ] Non-Vegetarian [ ]

2. Do you take any special food to promote milk secretion?
Yes [ ] No [ ]

If yes, indicate

S.No.	Special foods taken	Frequency				Reason
		Daily	Weekly	Monthly	Rarely	

3. Do you increase the food amount during lactation?
   Yes [ ] No [ ]

4. Do your avoid any food due to taboos and superstitious belief?
   Yes [ ] No [ ]

   If yes, indicate

S.No.	Item avoided	Reason

5. Clinical observation:

Deficiency symptoms	Whether present
1. Thin hair and sparseness	
2. Pale conjucativa	
3. Angular stomatitis	
4. Cheiliosis	

5. Bleeding gum

6. Dental caries

7. Flurosis

8. Rough and dry skin

9. Pellagra

10. Dermatitis

11. Kilonchia

12. Palpitation

13. Weakness and Fatiguability

14. Bone deformities

15. No symptoms

6. After delivery did you suffer from any illness?
Yes [ ] No [ ]
If yes, specify

V **EMPLOYMENT STATUS:**

1. Reasons for employment:

2. Type of work:

   a. Meanial job _____

   b. Office work _____

   c. Professionals _____

3. System of work:

   a. Regular _____

   b. Shift _____

4. Monthly income:

5. How long do you work per day

6. Duration of maternity leave given/taken:

7. Whether the salary is given during leave period?

8. Is there any creche facilities in your work place?

   Yes _____ No _____

9. Is any nursing break given?

   Yes _____ No _____

10. Any other maternal benefits given by the employer organisation

    Yes _____ No _____

    If you yes, mention

11. What arrangements you have made for your child care?

    a. Creche _____

    b. In_laws _____

    c. Grand parents _____

    d. Servants _____

12. Are you satisfied by the arrangement you have make for the care of your baby?

    Yes _____ NO _____

13. Are you tensed in any way by your employment?

    Yes _____ No _____

    If yes, in what way?

14. List the problems faced by you in looking after your baby because of employment

15. Opinion of mothers regarding employment:

VI Psychological Factors:

1. During your delivery period, who looked after you?

   a. Mother _____ b. Mother-in-law

   c. Servant ---------- d. Any other

2. Are you satisfied with the care taken by them?

   Yes _____ No _____

3. After delivery, where did you go for rest?

   a. Mother's house ----------

   b. In-law's house ----------

   c. Others

4. Are you satisfied with your family surroundings?

   Yes _____ No _____

   If no, why?

5. Do you have any emotional burdens during lactation?

   Yes _____ No _____

   If yes, specify

6. Do you get moral support from your husband?

   Yes ---------- No _____

   If yes,
   a. Always b. Some times c. Rarely d. Very rarely

   If no, give reason

APPENDIX-II

SRI AVINASHILINGAM DEEMED UNIVERSITY

COIMBATORE- 43

SCHEDULE FOR FOOD AND NUTRIENT INTAKE

S.NO.	MENU	WEIGHT OF RAW INGREDIENTS	WEIGHT OF TOTAL FOOD COOKED (g)	WEIGHT OF FOOD TAKEN BY SUB(g)	RAW EQUIVALENTS