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Infant feeding practices among working mothers of children aged 6 to 24 months: An overview

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Abstract
Breastfeeding yields important long-term health benefits for infants and their mothers, including positive impact on children's cognitive development and well-being. Workplace barriers contribute to low rates of breastfeeding. Employment of mothers outside home, especially full-time employment has a negative influence on duration of breastfeeding. Women frequently attribute early weaning to unsupportive work environments. Lack of privacy and adequate time to express breast milk are cited as barriers. Other limitations include employers' perception that the presence of infants in the workplace reduces mothers' productivity, regulations and other rules that bar children from the workplace, and a lack of child care close to the workplace. Field recording on infant's clinical assessments, anthropometric measurements and immunization schedule family behaviours was carried out. Present study demonstrates a survey on working mothers of 6-24 months old children and their knowledge/awareness/practices towards breast feeding, complementary feeding and healthcare of infant /young children.

Keywords: Breastfeeding, complementary feeding, working mothers, healthcare, Anganwadi centre

Introduction
Exclusive breastfeeding of infants from birth through initial six months using breast milk is important for their optimal health, growth, and development.
The period during which other foods (liquids/semi solids) are initiated along with breast milk is the period of weaning/complimentary feeding. It refers to the timely introduction of safe and nutritious foods in addition to breast-feeding (BF) i.e. clean and nutritionally rich additional foods introduced at about six months of infant's age.
As the newborn grows and turns to be progressively active after the initial half year of life, breast milk alone fails the mark concerning giving the full nourishing necessities - where the gap continues growing with the advancing age of the infants/young children. Complementary feeding plays critical role in bridging these gaps in children during this age. Introducing timely weaning is an essential element in the care of young children. Complimentary feeding is defined by World Health Organization (WHO) as "a process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods (semi solids/solids) are needed, along with breast milk." Malnutrition during childhood is prevalent in low- and middle-income countries and is associated with childhood deaths, diseases and infections, as well as delayed mental and motor development in children. According to National Family Health Survey-3 data of India, about 20 million children are not able to receive exclusive breastfeeding (EBF) for the first six months, and about 13 million do not get good, timely and appropriate complementary feeding along with continued breastfeeding. According to National Family Health Surveys of Delhi, the children under age 6 months exclusively breastfed were 49.6% (NFHS-4) and 64.3% (NFHS-5). Children aged between 6-8 months receiving solid/semi-solid food and breastmilkwas 35.4% (NFHS-4) and 62.9% (NFHS-5). Breastfeeding of infants and young children (IYC) aged between 6-24 months receiving an adequate diet were 4.3% (NFHS-4) and 18.8% (NFHS-5). Non-breastfed IYC aged between 6-24 months receiving an adequate diet were 9.4% (NFHS-4) and 9.5% (NFHS-5).

Review of Literature

Infant feeding practices are an important part of child rearing. According to Upadhyay *et al.* (2018), despite global efforts to improve maternal and child health and several initiatives such as Integrated Child Development Services (ICDS), child malnutrition remains a significant problem in India.

After discontinuing mother's milk, inclusion of semi-solid food becomes most important, as it plays a vital role in the growth/development of the child. Further at the age of 9-12 months, the baby should be given solid food consisting of cereals, pulses, vegetables and fruits. In India, according to the study by Chinnasamy *et al.* (2016); it was a traditional practice that 80% of home-cooked meals were fed to children for a long time, especially in rural areas. In urban societies, Cerelac was included, rather preferred by 90% for infant's diet. This study also reported that in India, 32.6% started giving semi solid food at 4 - 6 months and 33.5% began giving semi solid food at 6 to 9 months. Infants need calories and fortified nutrition and weaning gives the infant a complete opportunity for proper growth and development. (Pandey *et al.*, 2015)

WHO (2000-2004) recommends a gradual weaning period to 6–24-month old children and suggests that the baby receives the benefits of breastfeeding, along with essential nutrients from complementary foods. Poor infant underfeeding practices directly or indirectly contribute to under nutrition, morbidity and mortality. According to the study by Maiti *et al.* (2015), the proportion of underweight, stunting and wasting among children below 3 years of age is 47 percent, 45 percent and 16 percent respectively. Therefore, an optimum intake and timely initiation of weaning practices are important factors for babies below one of age.

Having a child in the family is a delightful experience. Taking good care of and nurturing him smoothly is further satisfying. There are many important milestones in the development of infants; out of these weaning is often-misunderstood. According to Sheth *et al*. (2006) weaning may be referred to as a "mixed diet", happening in stages, from liquids to solids, and from one method of feeding to another. From an average weight of 3 kg at birth, the weight of the baby increases to about 5 kg by the end of 3 months. From birth to 1 year is the time of fastest growth of the child. Mother's milk alone may not fully meet the needs of the child and the child may not develop at a rapid rate. Walker *et al.* (2006) were of the view that weaning should be started at a suitable time. Mixed feeding may be introduced early into infant's diet (2 months after birth) depending on the infant's growth pattern. Also, it's easier to get babies accustomed to new foods earlier than when they grow older. However, weaning should definitely start around 3 months.

Infants and young children are at an increased risk of malnutrition from six months of age onwards, when breast milk alone is no longer sufficient to me *et al.* l their nutritional requirements and complementary feeding should be started. Hence, this study was undertaken to assess the practices of breast feeding and complementary feeding.

Working women face a range of problems with optimal infant and child feeding practices that have a significant impact on the growth and development of a child especially during first 2 years (Zaheeruddin *et al*., 2016). It was evident that working mothers were performing three important responsibilities: infant/child care, the household chores and attending their workplace. Only a few months after the birth of the baby, they had to go out of the house for their work (especially those in unorganised sector), and thus were unable to practice exclusive breastfeeding during initial six months. Once back to work, mothers often have little time left for care of their children (WHO, 1999). A supportive spouse, cooperative family members (in laws and extended family members), friends/neighbours all play an important role in the success of optimum breastfeeding/complementary feeding.

Objective of the study was to get an overview of the infant feeding practices and child care among working mothers of children aged 6 months to 24 months.

Methodology

Locale of the Study

The geographical area selected for the present study was East-Delhi. According to Delhi Government, there are 11 districts in Delhi. For the present study, East-Delhi district was selected. The present study was conducted in two Paediatrics OPD units of Government Dispensaries, Bhajanpura (East-Delhi district).

Selection of Sample

The researcher selected two paediatrics OPD units of the Government Dispensaries, Bhajanpura (East-Delhi district). 250 working mothers having children aged between 6-24 years was drawn. An interview schedule was followed to gather information on the following:

1. Socio demographic profile of the working mother
2. Information related to the type/nature of employment of the working mother
3. Information from mothers regarding breastfeeding practices of infants
4. Information from mothers regarding complementary feeding for infants/ young children
5. Information received regarding the rearing of the children
6. Regular health check-up and immunisation related information of children
7. Information on support provided by spouse/family.
8. Information related to counselling / awareness (if any) provided by Anganwadi centres or ANM workers

During the survey, information was received from working mothers that mothers go to the Anganwadi centre for counselling. Mothers of young children and pregnant women were given iron and calcium supplements and children up to 5 years of age were provided free vaccination. Children were provided cost free food like porridge, gram, murmura etc. Mothers took advantage of all these facilities. It was observed that Anganwadi workers guided mothers about feeding their babies according to their age and also how to introduce complementary foods to young children. Mothers visited Anganwadi centres to get the regular health check-ups of the children done. Hence these centres were chosen for interacting and obtaining the detailed information from the mothers and other family members.

Results and Discussion

The study explored the knowledge, attitude and practices of working mothers of infant / young children towards breast feeding and complementary feeding practices. Data provided an insight into the outcome and challenges faced by these working mothers.

Table 1: Socio demographic profile of the working mothers

(N=250)

Age of mother 18-35 (years)	Responses N (%)
18-24	54 (21.6)
25-29	138 (55.2)
30 – 35	58 (23.2)
Education qualifications	**Responses N (%)**
Illiterate	3 (1.2)
Primary	6 (2.4)
Intermediate	69 (27.6)
Graduate	104 (41.6)
Postgraduate	68 (27.2)
Family type	**Responses N (%)**
Nuclear	104 (41.6)
Joint	146 (58.4)
Type of occupation	**Responses N (%)**
Service	186 (74.4)
Business	46 (18.4)
Labourer	18 (7.2)
Type of employment	**Responses N (%)**
Full day	202 (80.8)
Half day	44 (17.6)
Part time	4 (1.6)
Monthly income (in Rs)	**Responses N (%)**
<Rs 25,000	180 (72)
Rs 25,000 – 50,000	44(17.6)
Rs 50,000 and above	26 (10.4)

Table 2: Gender and Age wise distribution of Infants/young children

N=250

Gender of the child	Responses N (%)
Male	138 (55.2)
Female	112 (44.8)
Place of delivery	**Responses N (%)**
Private Hospital	143 (57.2)
Government Hospital	95 (38)
Home	12 (4.8)
Age of child (in months)	**Responses N (%)**
0 – 6	0 (0)
6 -12	154 (61.6)
12-18	56 (22.4)
18–24	40 (16)

Table-1 depicts that age of 21.6% mothers was < 25 years; 55.2% were between 25-29 years while remaining 23.2% were 30years or above. Data depicted that 3.6% of mothers were totally illiterate, about 27.6% had taken school education, 41.6% of mothers were graduates and only 27.2% had completed their post graduate education. 41.6% lived in nuclear setups while 58.4% of mothers had joint family background.

Survey data on their employment status shows that almost 74.4% working mothers were engaged in service such as working in government jobs, private companies, as private school teachers, showroom workers; 18.4% working mothers were engaged in self-business and 7.2% were employed as labour workers. Type of employment indicated that80.8% were working full time at government jobs, private companies, at local beauty parlour / cosmetics shop;17.6% working mothers reported that they were working half day and only 1.6% was in part time employment. Income/salary details showed 72% working mothers were drawing Rs. 0-25,000pm income, 17.6% were in the range of 25,000 pm to 50,000 pm and 10.4% were belonging to income group of Rs. 50,000 and above. Majority of the mothers in nuclear set ups, especially those working in unorganised sector had to compromise on breast feeding as they were to join back within few days after delivery or else lose their jobs.

Table 2 shows distribution of children on gender basisas55.2% males and 44.8% females. Survey data on their place of delivery shows that 57.2% births took place in private hospital, 38% were born in government hospital and 4.8% were delivered at home. Age wise distribution of children indicated 61.6% in 6–12-month age range, 22.4% were between 12-18 months and 16% of the children belonged to 18-24 month of age.

Table 3: Data on Breast feeding practices

(N = 250)

Whether Colostrum was given	Responses N (%)
Yes	168 (67.2)
No	82 (32.8)
Breastfeeding after child birth	**Responses N (%)**
After1h	59 (23.6)
After (2-4)h	147 (58.8)
After (5-6)h	25 (10)
After 7 h and more	17 (6.8)
Did not Breastfeed at all	2 (0.8)
Data on feeding practices	**Responses N (%)**
Exclusively breastfed for 6 months to 1 year	196 (78.4)
Mixed feeding (breast milk & top feed)	52 (20.8)
Never breast fed	2 (0.8)

Table-3 shows that majority (67.2%) of the mothers had given colostrum to their babies. This was an indication that importance of colostrum is being stressed upon and families are accepting it.

However, more emphasis needs to be laid upon by the hospital set ups and anganwadi centres to make the enrolled pregnant women as well as their immediate family members aware towards the advantages of colostrums. Nearly 23.6% initiated breast feeding within an hour of the birth of baby. Another 58.8% too started to feed after 2-4 hours. About 10% took 5-6 hours due to personal reasons. A small number (0.8%) reported not having breast fed at all. 78.4% infants were exclusively breast fed for a period of 6 months to 1 year from birth. 20.8% infants were on mixed feeding (breast milk and top milk both) and 0.8% infants did not receive breast milk at all and were dependant completely on top milk. Most common reasons reported for discontinuing breast feeding early was not getting leave from work place and at times insufficient milk production. A few mothers from joint families also stated lack of family support due to which there was pressure of household chores and this subsequently did not leave enough time for breast feeding

Table 4: Data on complementary feeding

(N=250)

Age of Introducing complementary foods	Responses N (%)
2–3 months	18 (7.2)
3-5 months	124 (49.6)
5-8 months	105 (42)
8-12 months	3 (1.2)
Number of meals given to child	**Responses N (%)**
1-2	3 (1.2)
3-4	184 (73.6)
5-6	63 (25.2)
Whether homemade weaning foods given	**Responses N (%)**
Yes	219 (87.6)
No	27 (10.8)
Some time	4 (1.6)

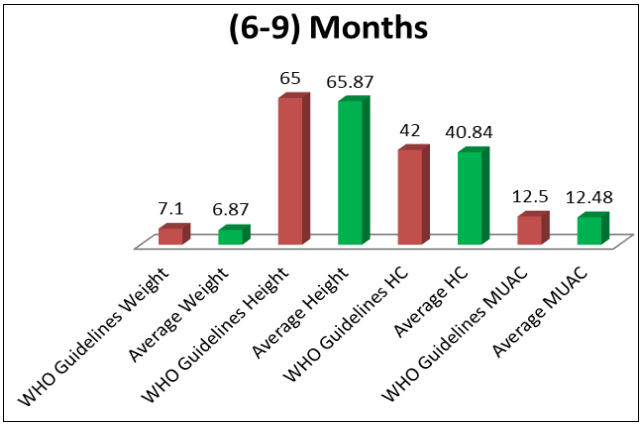
Table-4 depicts nearly half of the mothers started weaning at 3-5 months, another 42% gave complementary foods between 5-8 months and a small number began at almost one year's age. Nearly ¾th of the working mothers were giving 3-4 meals of complementary foods per day. 87.6% were giving home cooked preparations. Early weaning in few cases was reported for the reason that working mother was not available for breast feeding and hence infant was given other liquid/semisolid foods by family members taking care. They reportedly prepared rice kanji or gruel (boiled broken rice with salt preparation) and dal rice (combination of mashed rice and dal with salt and ghee). Other commonly used weaning/complementary foods were mashed idli (steamed fermented batter of rice and urad dal) with dal / seasonal vegetables, fruit pulp/ juices. Most common reason reported for delayed complementary feeding was unsuccessful attempts at feeding. The commonest reason reported by the mothers and immediate family members taking care of the infant was "The child vomits out everything". It was explained that actually it is not vomiting but the fact that the child tries to bring out the food put on the front of the tongue. Hence, the mothers/family members need to be made aware that child has to develop the taste of the food and if they attempt and keep the food on child's tongue, the child will slowly start liking it and gradually start swallowing. Small quantities need to be attempted when weaning is to be done.

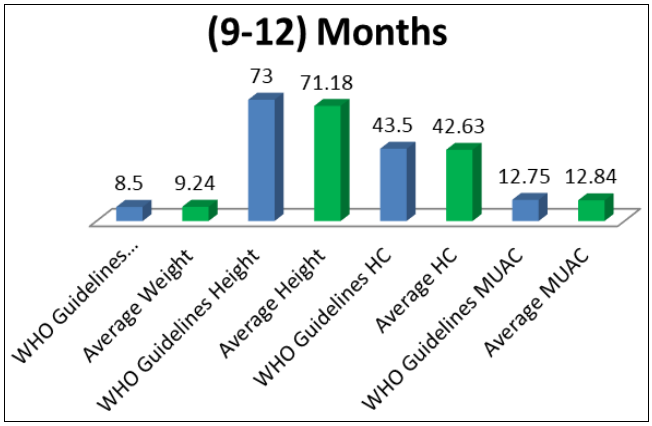
Table 5: Data related to Vaccination/Immunization of the Infant/Young child

Infant/Young child monthly anthropometry	**Responses N (%)**
On time	122 (48.8)
Not on time	16 (6.4)
Some times as per schedule	72 (28.8)
Whenever time available	40 (16)
Polio Immunization	**Responses N (%)**
Yes	247 (98.8)
No	3 (1.2)
DPT at Birth	**Responses N (%)**
Yes	205 (82)
No	45 (18)
Total Vaccination/Immunization schedule followed	**Responses N (%)**
Yes	222 (88.8)
No	28 (11.2)
Vaccination/Immunization done at right time	**Responses N (%)**
Yes	201 (80.4)
No	49 (19.6)

Table 5: Shows that (48.8%) working mothers were particular about health visits (getting anthropometry done) for their children at the advised time. 16% of working mothers got it done if and when time available. 98.8% of working mothers had given their children polio immunization at the right time. Data reported that 82% had their children vaccinated for DPT at birth.

88.8% of the children had received all vaccinations. 80.4 *%* working mothers managed somehow although with great difficulty to provide immunization facilities to at the right time.





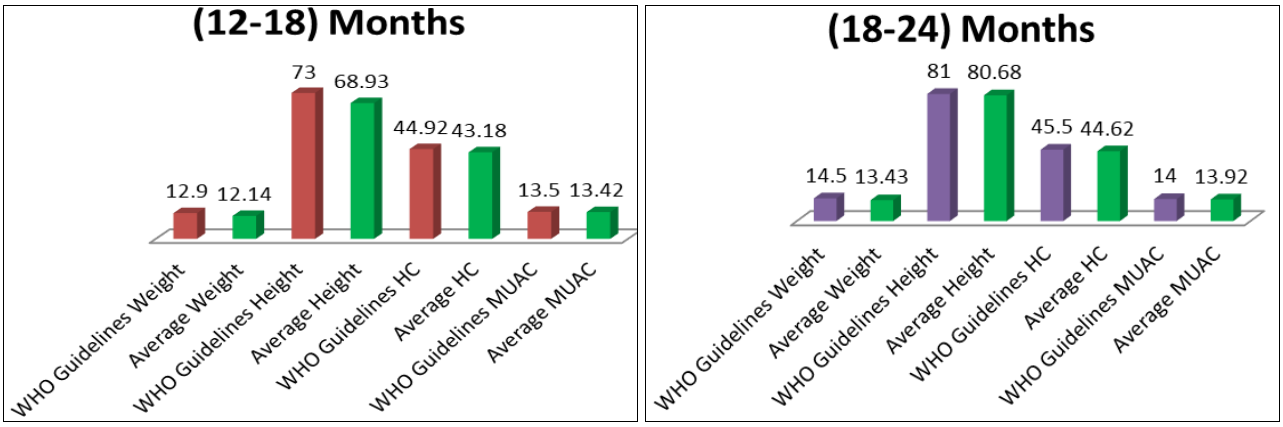


Fig 1: Data on Anthropometric measurements of the Infants/Young children (N=250) in comparison to the WHO guidelines

Data on anthropometry indicated slightly lesser average weight, height/length, head circumference and mid upper arm circumference as compared to the WHO guidelines as seen in the Fig 1.

Table 6: Attitude of family members/family support (N=250)

Whether husband supportive towards employment& child care	
Yes	228 (91.2)
No	22 (8.8)
Attitude of other family members towards mother's employment	
Yes	81(32.4)
No	169 (67.6)
Whether other family members supportive towards child care	
Yes	164 (65.6)
No	86 (34.4)

It was heartening to know that 91.2% of husbands supported their wives as far as their job was related (Table 6), but assistance in household chores, child-care activities and other family responsibilities was not there in most of them. 65.6% mothers reported that their family members did support them but at the same time 32.4% said that the family attitude towards their employment was positive. The remaining felt that the family members did not appreciate their being independent.

Conclusion

The study concludes that there is an urgent need of awareness to be brought about among women in employment as well as for their spouses and other family members regarding breast feeding and complementary feeding practices. Working mothers need an encouraging environment; hence a favourable support from spouse and the family members will help in healthy upbringing of the infant / young child. During the survey, it was felt that proper awareness about infant feeding practices, regular monitoring of growth, timely immunization regime should be given to the mothers/family members by trained health workers/Anganwadi workers in individual and group settings. Information on low cost and easy to prepare nutritious weaning foods for infants may be given to promote proper complementary feeding practices; such that it can have a positive impact on family physical and psychological well-being. It is equally important to include all family members in these educational awareness/counselling sessions, since it infant rearing is a shared responsibility in the family, especially if the mother is in employment. It was felt that the mothers working in unorganized sector were not able to avail sufficient days leave for infant care after delivery. This impacted the infant feeding practices, breast feeding and complementary both. Family support here becomes more important, so that spouse and other family members can contribute in healthy rearing of the infant while mother is away for work. The well-being of mother and child is largely influenced by the social and emotional environment at home, so the support of spouse/other family members/carers can go a long way in contributing to the field of child nutrition.

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