

## Original Research

# A study on Infant and Young Child feeding practices of mothers visiting District Civil Hospital

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### Abstract:

**Objective:** To investigate the infant and young child feeding practices among mothers attending Pediatric OPD of a District Hospital in Gurugram.

**Methods:** A total of 85 mother-infant (6 months) dyads attending Pediatric OPD of District Civil Hospital, Gurugram were selected purposively. Infants aged 6±0.5 months, single birth, normal birth weight, full term, breastfed infants and infants without any severe chronic disease or disorder were enrolled. A questionnaire was developed to record the participants' socio-demographic profile and information on IYCF. Retrospective data was collected for early and exclusive breastfeeding practices.

**Results:** It was highlighted that only 38.8% of the infants were breastfed within one hour of birth even after 95.3% institutional delivery rate. Exclusive breastfeeding for six months was reported amongst only 30.6% of infants. The main reason for discontinuing breastfeeding before six months was lack of breastmilk. Top-feeding and complementary feeding was documented amongst 65% of the infants, of which 18.8% infants received complementary feeding at an appropriate age of 6 months. Complementary foods commonly given included semi-solid foods (21.2%) mainly cerelac, animal milk (20%), daalkapaani (14.1%) and infant formula milk (9.4%).

**Conclusion:** IYCF practices in India are extremely poor which maybe because of the lower literacy rates, lack of IYCF education among mothers and dearth of IYCF counseling and

support. Mothers also bears wrong perceptions and false beliefs of towards the age for initiating the complementary feeding which exhibits lack of IYCF education. Community level campaigns should be organized so as to create mass level awareness amongst the caretakers.

**Keywords:** Complementary feeding, Counseling, Exclusive Breastfeeding, Infant and Young Child Feeding

### Introduction:

Nutrition during early years of life is crucial for children to survive, grow and develop into healthy adults who can lead rewarding lives and productively contribute to their communities. The period from birth to two years of age is considered as a “critical window” of opportunity as during this period the foundation for healthy growth and development in later years is laid down. Thus, adequate nutrition through this period has been recognized as national and international priority.<sup>[1]</sup>

Infant and Young Child Feeding (IYCF) is a critical component of care in childhood. It is a major determinant of short- and long-term health outcomes in individuals, and hence of social and economic development of communities and nations.<sup>[2]</sup> Realizing this need, World Health Organization

(WHO) recommends that optimal nutrition practices for infants and children include early initiation of breastfeeding i.e. within one hour of birth, exclusive breastfeeding for the first six months of life, followed by the addition of nutritionally adequate, safe, and appropriate complementary foods with continuation of breastfeeding for one year and longer.<sup>[3]</sup> However, even after constantly emphasizing the importance of implementing these recommendations, the nation fails to elevate the status of Infant and Child Feeding which is necessary for attaining a better and yielding future.

Even with continuous improvement and decades of work in healthcare facilities, National Family Health Survey- 4 (2015-16) highlighted that Infant Mortality Rate (IMR) and Under-Five Mortality Rate (U5MR) in India is 41 per cent and 50 per cent, respectively. Further, malnutrition still remains high with 38 per cent of children under five years of age reported stunted and 36 per cent reported as underweight. Even in the highest wealth quintile 22 per cent and 20 per cent of the children under five years of age have been reported stunted and underweight, respectively.<sup>[4]</sup> This state of malnutrition can be attributed to the poor feeding practices combined with repeated infection due to lack of hygiene and sanitation in India. Scientific evidences suggests a link between early childhood nutrition and childhood mortality.<sup>[5]</sup> Infant and young child feeding practices directly impact the nutritional status and, ultimately the child survival of children less than two year of age.<sup>[6]</sup> Malnutrition rates tends to increase between 6 and 18 months of age. Stunting which occurs at six months is irreversible and can have long-term effects on cognitive development, school achievement, and economic productivity in adulthood and maternal reproductive outcomes.<sup>[7]</sup>

Regarding the IYCF practices, the situation is rather dismal as NFHS-4 (2015-16) shows that only 41.6 per cent of the children are breastfed within first hour of the birth in spite of a substantial increase in the rates of institutional deliveries from 38.7 per cent (NFHS-3) to 78.9 per cent (NFHS-4) during a

span of ten years. Also, nearly half (45.1%) of the children under six months of age are not exclusively breastfed for the first six months. Complementary feeding practices presents the worst situation as the percentage of children, aged 6-8 months, receiving solid or semi-solid food and breastmilk has fallen from 52.6 per cent (NFHS-3) to 42.7 per cent (NFHS-4) instead of showing an improvement. Also only 9.6 per cent of the total children, aged 6-23 months, receive an adequate diet (Breastfed children receiving 4 or more food groups and a minimum meal frequency, non-breastfed children fed with a minimum of 3 Infant and Young Child Feeding Practices). The timely complementary feeding (CF) rate for India, as a whole is only 31%.<sup>[4]</sup> These statistics point out that IYCF practices are not appropriate in India and there are various factors mainly at maternal/caregiver and family level which are responsible for the failure in achieving the IYCF goals. It is crucial to identify the key determinants affecting and hindering the appropriate IYCF practices and to address each by developing a targeted strategy. Thus the present study aims to investigate the infant and young child feeding practices among mothers attending Pediatric Out Patient Department of a District Hospital in Gurugram, Haryana state.

#### **Methods:**

For the present study, a total of 85 mother-infant (6 months) dyads attending Out Patient Department of the District Civil Hospital in Gurugram were selected purposively during September to October 2017 to assess the Infant and Young Child Feeding Practices prevalent among the mothers/caregivers in Delhi-NCR. Infants aged less than or more than 6±0.5 months, infants suffering from any severe chronic disease or disorder, twins, low birth-weight, pre-term and non-breastfed infants were not included in the study.

A detailed questionnaire cum interview schedule was developed to record the participants' socio-demographic profile, infants' details, maternal

details, immunization details, information regarding early initiation of breastfeeding, exclusive breastfeeding for six months and initiation of complementary feeding.

Ethical clearance was obtained from the Institutional Ethics Committee of the Institute of Home Economics, University of Delhi. Patient information sheet was given to the enrolled participants and written informed consent was obtained from the participants. Written permission was also obtained from the District Civil Hospital, Gurugram for the data collection.

*Statistical analysis:* Data coding and data entry was done using MS Excel. Frequency and percentages were calculated for the participants' socio-demographic profile, infants' details, maternal details, immunization details, IYCF practices. Mean and standard deviations were calculated for continuous variables.

### Results:

The results of the present study reported that amongst the total 85 infants enrolled, 68.2 per cent were males and 31.8 per cent were females. The mean (SD) age of the male and female infants was  $6.11 \pm 0.47$  months. Mean (SD) birth weight of the infants (both males and females) was  $2.78 \pm 0.54$  kg. Table 1 highlights the characteristics of the infants 6 months of age visiting the OPD, District Civil Hospital, Gurugram. Majority (90.6%) of the infants were Hindu and only 9.4 per cent were Muslims. Regarding the place of delivery, 84.7 per cent of the infants were delivered at Government Hospital, 10.6 per cent at private hospitals and only 4.7 per cent at home with birth attendant. Normal delivery and C-section delivery were found to be 70.6 per cent and 29.4 per cent, respectively. Almost half of the total infants were first born, 25.9 per cent were second born, 17.5 per cent were third born and six per cent were fourth born baby.

**Table 1. Characteristics of infants 6 months of age visiting the OPD, District Civil Hospital, Gurugram**

	N	%
Total	85	100
Males	58	68.2
Females	27	31.8
Religion		
Hindu	77	90.6
Muslim	8	9.4
Place of delivery		
At home with Birth attendant	4	4.7
Private Hospital	9	10.6
Government Hospital	72	84.7
Type of delivery		
Normal	60	70.6
C-section	25	29.4
Birth Order		
First	43	50.6
Second	22	25.9
Third	15	17.5
Fourth	5	6.0

The mean (SD) age of the mothers was  $24.83 \pm 3.6$  years. Over one fourth (25.8%) of the mothers had intermediate school education, 15.3 per cent were graduated and 2.4 per cent had post-graduate level education. Only 8.2 per cent of the mothers were employed at the time of the study, of which majority were engaged in labor work. Almost 50 per cent of the mothers were primiparous and amongst those with more than one child, 40 per cent had a parity of more than two years between two births. Majority (61.2%) of them had a nuclear family and 42.6 per cent had four to six family members.

**Table 2. Characteristics of mothers of infants 6 months of age attending OPD, District Civil Hospital, Gurugram**

	N	%
Education		
Illiterate	17	20
Primary school	5	5.9
Middle school	16	18.8
High School	10	11.8
Intermediate	22	25.8
Graduation	13	15.3
Post-graduation	2	2.4
Livelihood		
Working	7	8.2
Non-working	78	91.8
Working Hours		
<5 hours	4	57.1
5-10 hours	1	14.3
>10 hours	2	28.6
Work Shift		
Morning	6	85.7
Evening	1	14.3
Parity		
1	42	49.4
2	23	27.1
>2	20	23.5
Birth Interval		
No previous birth	42	49.4
1 year	3	3.5
1-2 year	6	7.1
>2 years	34	40

N	%	
Type of Family		
Nuclear	52	61.2
Joint	33	38.8
Size of Family		
<4	31	36.5
4 to 6	36	42.4
>6	18	21.1

*Early Breastfeeding Practices (At birth):*

Table 3 shows that among the total 85 infants aged 6 months at the time of interview, 14.1 per cent were put on breast immediately after birth, 24.7 per cent were initiated with breastfeeding within first one hour of birth and 25.9 per cent babies received breastmilk after two or more days. In C-section deliveries, only 28 per cent infants were breastfed within first hour of the birth. Amongst the infants who received breastmilk after two days or more, majority (45.5%) were fed with infant formula milk followed by animal milk (31.8%) other than cow's milk (18.1%). Almost 95 per cent of the infants received colostrum and the reason reported by 83.7 per cent of the mothers for feeding colostrum was that doctor/health worker advised it. Only 15 per cent mothers knew about the benefits of feeding colostrum to the baby. Prelacteals mainly honey as a traditional practice followed by the family was given to 8.2 per cent of the infants.

**Table 3. Early breastfeeding practices amongst mothers of infants 6 months of age attending OPD, District Civil Hospital, Gurugram**

Breastfeeding Practices (At Birth)	N	%
Initiation of breastfeeding after birth		
Immediately	12	14.1
In first 1 hour	21	24.7
In first 24 hours	30	35.3
After 2 days or more	22	25.9
Feed given to babies if breastfeeding initiated after 24 hours or more		
Cow's Milk	4	18.1
Infant Formula Milk	10	45.5
Other Animal Milk	7	31.8
Other Fluids like <i>daalkapaani</i>	1	4.6
Colostrum given		
Yes	80	94.1
No	5	5.9

<b>Breastfeeding Practices (At Birth)</b>	<b>N</b>	<b>%</b>
Reason to feed colostrum		
Good for immunity and growth	12	15
Doctor/health worker advised	67	83.7
Self knowledge	1	1.3
Reasons for not feeding colostrum		
Bad for baby	2	40
Doctor advised	2	40
Lack of Milk	1	20
Prelacteals		
Yes	7	8.2
No	78	91.8
Prelacteals given		
Honey	5	71.4
Ghutti	1	14.3
Ajwain Water	1	14.3
Reasons for giving prelacteals		
Traditional practice	5	71.4
Mother/mother-in-law advised	2	28.6

***Breastfeeding practices at 6 months:***

Majority (94.1%) of the mothers were breastfeeding at the age of six months and those who discontinued breastfeeding before six months reported lack of breastmilk secretion as the main reason for it (Table 4). Nearly half (42.4%) of the infants were breastfed 9 to 12 times in a day and the mean (SD) duration of breastfeeding at a time was 9.54±5.45 minutes. Sixty per cent of the mothers thought that breast milk is not sufficient at 6 months of age to fulfill child's growing nutritional needs and other foods and hence beverages should be given to the child.

**Table 4. Breastfeeding practices amongst mothers of infants at 6 months of age attending OPD, District Civil Hospital, Gurugram**

<b>Breastfeeding Practices (At 6 months)</b>	<b>N</b>	<b>%</b>
Breastfeeding at 6 months		
Yes	80	94.1
No	5	5.9

<b>Breastfeeding Practices (At 6 months)</b>	<b>N</b>	<b>%</b>
Frequency of breastfeeding		
< 3 times	1	1.2
3-6 times	5	5.9
6-9 times	14	16.4
9-12 times	36	42.4
> 12 times	24	28.2
Not applicable	5	5.9
Duration of breastfeeding before discontinuation		
< 3 months	1	20
3-4 months	4	80
Reasons to discontinue breastfeeding		
Child stopped himself/herself	1	20
Insufficient breast milk secreted	4	80
Breast milk sufficient at 6 months (mother's perception)		
Yes	34	40
No	51	60

*Complementary feeding practices:*

Results (Table 5) of the present study documented that 65 per cent of the infants were receiving top-feeding/ complementary feeding and of those only 18.8 per cent infants were given complementary foods at an appropriate age i.e. at the age of 6 months while 57.8 per cent of the infants were given complementary foods before the age of 6 months. Majority (41.5%) of the infants received feeds other than breastmilk at birth as pre-lacteals or animal milk/infant formula milk which is a major reason for non-exclusive breastfeeding. The most common reason for giving complementary foods to their babies as reported by majority of the mothers (24.6%) was that the baby was hungry even after breastfeeding, followed by 10.8 per cent where doctor/health worker advised it. On the other hand, the reason for not initiating complementary feeding was that the mothers (75%) felt that breastmilk is sufficient for baby.

When asked why complementary feeding has not been not started at six months, one of the mother said that “the age of six months is too early while another mother was of the view that feeding will be started once there are eruption of teeth”.

Apart from breastmilk, the most common foods given to infants were semi-solid foods (25.9) mainly cerelac, animal milk (32.9%), *daalkapaani* (8.2%) and infant formula milk (8.2%). Majority of the mothers (29.4%) started giving these foods on doctor's/health worker's advice, followed by 27.6 per cent mothers who gave these foods as they thought the child was thirsty or hungry even after breastfeeding and 24.1 per cent mothers who reported that their mother-in-law advised it. Bottle feeding was documented amongst 25.8 per cent of the mothers.



**Table 5. Complementary feeding practices amongst mothers of infants 6 months of age attending OPD, District Civil Hospital, Gurugram**

<b>Complementary Feeding Practices</b>	<b>N</b>	<b>%</b>
Top feed/complementary feeding started		
Yes	65	76.5
No	20	23.5
Age of initiating top feeds and complementary feeding		
Before 6 months	49	57.6
At 6 months	16	18.8
Not started	20	23.5
Reasons for initiating top feeds and complementary feeding		
Pre-lacteal/feed other than breastmilk given at birth	27	41.5
Baby was hungry after feeding breast milk	16	24.6
It was the correct age	4	6.2
Mother-in-law advised it	5	7.7
Doctor/health worker advised it	7	10.8
No breast milk left	4	6.2
Information through media	1	1.5
Relatives/friends advised	1	1.5
Reasons for not initiating complementary feeding		
Breast milk is sufficient	15	75
It is not correct age	2	10
Mother-in-law advised it	1	5
Relatives/friends advised	2	10
Feeds given to babies in last 24 hours		
Only mother's milk	32	37.6
Infant Formula Milk	7	8.2
Animal Milk	28	32.9
Fruit juice	2	2.4
Semi-solid foods	22	25.9
<i>Daalkapaani</i>	7	8.2



Complementary Feeding Practices	N	%
Reasons for giving these foods to child		
Child liked it	1	1.7
Mother-in-law advised it	14	24.1
Husband advised it	5	8.6
Friend/Relative advised it	4	6.9
Child was thirsty or hungry	16	27.6
Lack of milk	1	1.7
Doctor/Health Worker Advised	17	29.4
Method of feeding		
Bowl and spoon	40	69
Bottle	15	25.8
Both	3	5.2

### Discussion:

The present study highlighted a high rate of institutional deliveries i.e. 95.3 per cent which is comparable to NFHS-4 data which has reported 78.9 per cent institutional deliveries in India.<sup>[4]</sup> Despite a higher number of institutional deliveries, the study results reported lower rates of early initiation of breastfeeding i.e. within first one hour of birth which was only 38.8 per cent in normal deliveries and 28 per cent in C-section deliveries. A community based study by Reddy and Sreeramareddy to assess the perinatal care practices in home deliveries in rural Bangalore, India also reported delayed initiation of breastfeeding among 73.3 per cent of the mothers.<sup>[8]</sup> Major barriers to early initiation of breast feeding includes lack of awareness regarding proper technique of breastfeeding and benefits of colostrum, breast abnormality like inverted/retracted nipples, obstetric/neonatal complications requiring specialized care, and cultural practices like giving pre-lacteals and gender discrimination.<sup>[9]</sup> Contrary to this, Patel et al. reported that amongst 781 mothers in Gujarat, 57.5 per cent started feeding within an hour of birth.<sup>[10]</sup>

Exclusive breastfeeding for first six months was found to be 30.6 per cent in the present study which is far less than the figure (54.9%) reported in NFHS-4.<sup>[4]</sup> This lack of exclusive breastfeeding, to a major extent, is because of the pre-lacteals given as traditional practice or milk other than breastmilk given to infant at birth when the mother was unconscious in case of C-section deliveries or when it was presumed that there is no secretion of breastmilk.. Another reason for this is early initiation of complementary feeding which is mainly because of the mothers' or family members' perception that breastmilk is not enough for the infant and thus it should be supplemented with animal milk. In another similar study done by Velusamy et al., it was reported the prevalence of exclusive breastfeeding for the first six months was 11.4 per cent only among mothers in urban slums of Vellore, Southern India.<sup>[11]</sup> Another study from Northern India reported that exclusive breastfeeding for six months was practiced by only 5% mothers.<sup>[12]</sup> On the contrary Mahmood et al. found that amongst 123 mothers in Uttar Pradesh, about 75 per cent exclusively breastfed their child.<sup>[13]</sup> Difficulty in positioning and attaching the infant to the breast (88.5%), followed by breast and nipple

problems (30.3%) are some of the predictors identified leading to failure of Exclusive Breastfeeding among infants.<sup>[12]</sup>

In the present study only 18.8 per cent of the mothers introduced complementary feeding at an appropriate age of six months and it was found that majority of infants (32.9%) received animal milk as the complementary food followed by semi-solid foods (25.9%) such as cerelac, biscuits, banana etc. Majority of the mothers begin complementary feeding before the age of six months which reflects the lack of awareness regarding IYCF practices and to a certain extent the impact of family members on infants feeding practices. The fear about insufficient breast milk was a major concern for the grandmothers who recommended their daughter/daughter-in-law to start giving the child other foods before six months.<sup>[15]</sup> Similar results were seen in a study by Aggarwal et al. where only 17.5% mothers of 200 started complementary feeding at the recommended time.<sup>[14]</sup> On the other hand, a study done by Meshram et al. delineated that of 805 infants (6-11 months), 58 per cent received complementary feeding at 6-9 months of age.<sup>[16]</sup> In another hospital-based study in Mangalore, out of 200 mothers, 77.5 per cent started complementary feeding at the recommended age of six months.<sup>[17]</sup> Study done by Spara et al. found that 73 per cent of the infants were given animal milk other and foods like mashed dal and rice, mashed seasonal fruits, vegetables and biscuit with milk were given to most of the children.<sup>[18]</sup>

### Conclusion:

It can be concluded that in India the three recommendations of IYCF i.e. early initiation of breastfeeding within one hour of birth, exclusive breastfeeding for first six months and introduction of complementary foods at the age of six months are extremely poor. This could be because of the lower literacy rates of the mothers, dearth of awareness about IYCF and scarcity of appropriate IYCF counseling of mothers by the health workers. Another reason for the deficient IYCF practices in

the present study could be the young age of the mothers and majority of mothers being the primiparous lack the appropriate experience and knowledge of infant feeding. The study also reflects the wrong perceptions and false beliefs of mothers towards the age for initiating the complementary feeding. Improvement in IYCF practices requires the strong institutional counseling of the mothers as well as the other family members who influences the mothers. Mother and family should be motivated, encouraged, educated and supported regarding proper infant feeding practices so as to sustain and maintain infant health. Infant feeding should be a part of comprehensive child-care, so child should be cared for all its health needs simultaneously. Appropriate nutritional practices play a pivotal role in determining health and development of children. Community level campaigns should be organized so as to create mass level awareness amongst the caretakers.

**Contribution of each author:** UM designed the study, collected data, analyzed the data and led the preparation of manuscript. Associate Professor SP and TKR assisted with study design and preparation of manuscript. BSY assisted with data collection and reviewed the manuscript. SKT reviewed the manuscript.

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**Conflict of Interest:** NA

### References:

1. Dewey KG and Begum K. Long-term consequences of stunting in early life. *Matern. Child Nutr.* 2011; 7: 5–18.
2. WHO. Implementing the global strategy for infant & young child feeding. Geneva, 2003.
3. World Health Organization; UNICEF. Strengthening Action to Improve Feeding of Infants and Young Children 6–23 Months of Age in Nutrition and Child Health Programmes; World Health Organization:

- Geneva, Switzerland, 2008.
4. International Institute for Population Sciences (IIPS) and Macro International. 2017. National Family Health Survey (NFHS-4), 2015-2016; India. Mumbai: IIPS.
  5. Lutter KC, Daelmans MEGB, Mercedes de Oriet al. Undernutrition, Poor Feeding Practices and Low Coverage of Key Nutrition Interventions. *Pediatrics* 2011, 1418e- 1427e.
  6. Lauer JA, Betran AP, Barros AJD, Onis MD. Deaths and years of life lost due to suboptimal among children in the developing world: a global ecological risk assessment. *Public Health Nutr* 2006; 673-685.
  7. Guidelines for enhancing optimal and young child feeding practices. Ministry of health and family welfare, Government of India, 2013.
  8. Reddy NR and Sreeramareddy CT. Perinatal care practices in home deliveries in rural Bangalore, India: A community-based, cross-sectional survey. *WHO South East Asia J Public Health*. 2017 Apr;6(1):75-81.
  9. Majra1 JP and Silan VK. Barriers to Early Initiation and Continuation of Breastfeeding in a Tertiary care Institute of Haryana: A Qualitative Study in Nursing Care. *J ClinDiagn Res*. 2016 Sep; 10(9): LC16–LC20.
  10. Patel DV, Bansal SC, Nimbalkar AS, et al. Breastfeeding Practices, demographic variables, and their association with morbidities in children *AdvPrev Med*. 2015; 892825.
  11. Kishore SS, Kumar P, Aggarwal AK. Breastfeeding knowledge and practices amongst mothers in a rural population of North India: a community-based study. *Journal of Tropical Pediatrics*. 2009; 55(3): 183-88.
  12. Suresh S, Sharma KK, Saksena M, et al. Predictors of breastfeeding problems in the first postnatal week and its effect on exclusive breastfeeding rate at six months: experience in a tertiary care centre in Northern India. *Indian J Public Health*. 2014 Oct-Dec;58(4):270-3.
  13. Mahmood SE, Srivastava A, Shrotriya VP, Mishra PJ. Infant feeding practices in the rural population of north India. *Family Community Med*. 2012 May;19(2):130-5.
  14. Aggarwal A, Verma S, Faridi MMA, Dayachand. Complementary feeding reasons for inappropriateness in timing, quantity and consistency. *Indian J Pediatr*. 2008; 75:49-53.
  15. Fjeld E, Siziya S, Katepa-Bwalya M, et al. 'No sister, the breast alone is not enough for my baby' a qualitative assessment of potentials and barriers in the promotion of exclusive breastfeeding in southern Zambia. *Int Breastfeed J*. 2008, 3: 26.
  16. Meshram II A L, Venkaiah K, Brahmam GNV. Impact of feeding and breastfeeding practices on the nutritional status of infants in a district of Andhra Pradesh, India. *Natl Med J India*. 2012 Jul-Aug;25(4):201-6.
  17. Rao S, Swathi PM, Unnikrishnan B, Hegde A. Study of Complementary Feeding Practices among Mothers of Children Aged Six Months to Two Years – A Study from Coastal South India. *AMJ*. 2011; 4(5): 252-257
  18. Sapra D, Ray S, Jindal AK, YSM, Patrikar S. Infant and young child feeding practices amongst children referred to the paediatric outpatient department. *Medical Journal Armed Forces India*. 2015; 71: 359–362.

