J. Indian Dietetic Association Volume 39, No.2, pp. 41-50, 2016

Infant and Young Child Feeding (IYCF) Practices Amongst Mothers of Chandigarh, India

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ABSTRACT

BACKGROUND:

Poor feeding practices in infancy and early child hood results in malnutrition.

OBJECTIVES:

To investigate the infant feeding practices among mothers of infants.

METHODOLOGY:

A total of 300 mothers, with infants aged 6 to 24 months, who visited the Pediatric O.P.D. of a Government and private hospital of Chandigarh, were randomly selected and interviewed. The self developed, pre tested questionnaire was used for data collection. and informed consent was taken from the participants.

RESULTS:

Out of 300 mothers interviewed, 87.6% (n= 263) and 40.7%(n=122) mothers knew about exclusive breastfeeding and weaning foods, respectively. The proportions of infants with exclusive breastfeeding under six months (78%) and infants who received complementary feeding at the age of 6-8 months (81.7%) were high. 86.7% and 60% infants were continuing with breast feeding till the age of 6 12 months and 12 24 months, respectively. Mother was the primary care giver (73percent). Doctors (66.7%) were major source of information for mothers regarding weaning foods. Home made weaning foods were commonly given to infants. 25% mothers included green leafy vegetables like spinach in weaning foods. Weight monitoring was done for all infants..56.7% followed a time table for giving food to their children.81.7% respondents included fat and sugar to make weaning foods energy dense. 28.7% infants were given nutritional supplements and tonics.

CONCLUSION:

Nutrition education regarding exclusive breast feeding and healthy complementary feeding will go a long way in improving and achieving optimal nutritional status and reducing malnutrition.

KEY WORDS: Infants, complementary feeding, nutritional status, nutritional supplements.

The first years of life are crucial in laying the foundation of good health. At this time certain specific, biological and psycho-social needs must be met to ensure the survival and healthy development of the child and future adult. The immediate consequences of poor nutrition during these formative years include significant morbidity and mortality and delayed mental and motor development. In the long term, early nutritional deficits are linked to impairments in intellectual performance, work capacity, reproductive outcomes and overall health during adolescence and adulthood.

Adequate nutrition during infancy and early childhood is fundamental to the development of the each child's full human potential. It is well recognized that the period from birth to 2 years of age is a "critical window" for the promotion of optimal growth, health and behavioral development and during this period, infant feeding practices comprising of both the breastfeeding as well as complimentary feeding have major role in determining nutritional status of the infants. Also,breast feeding has been accepted as most vital intervention for reducing infant mortality and ensuring optimal growth of the children .This is important in context of Infant and Young Child Feeding in developing countries particularly India, here breast milk is the safest ,most easily available and most economical form of feeding options for the infant.More than 24lakh child deaths could be averted in India by implementing optimal feeding practices.

Only 46% are exclusively breast fed and only 55% are put to breast within first day of life (NFHS2005-2006). Initiation of breast feeding within one hour of birth is only 24.5 percent . The District Level Household Survey(DLHS-3) shows little encouraging trend in initiation of breast feeding which is about 40 percent .

Therefore, the present study was conducted to investigate the existing trend with regard to IYCF practices amongst the population.

METHODOLOGY

The present **c**ross sectional, community based, descriptive study was conducted on mothers of infants low, middle and high socio economic status familes, (Kuppuswamy Scale, 2007) residing in Chandigarh city. The study was carried out by conducting daily visits to the Pediatric O.P.D. of a Government Hospital and private hospital of Chandigarh. A total of 300 mothers, with infants aged 6 to 24 months, who visited the hospitals, were purposively selected and interviewed.

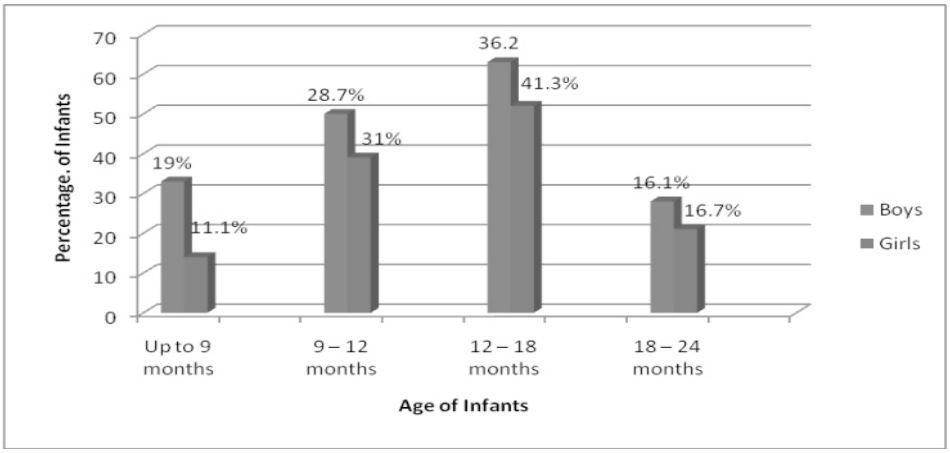
For collecting the data for the study, permissions were taken from both the hospitals .The proposed sample was studied with the help of a self designed questionnaire that included ~~various parameters such as~~ general information of the infant, socio-economic status of the family, anthropometric measurements, optimum duration of breastfeeding and type of top feed given, initiation of weaning foods, type and frequency of weaning foods given. Anthropometric measurements were taken using standardized techniques and using standardized equipments.

RESULTS AND DISCUSSIONS

Out of the total 300 infants, 58% (174) were Boys and 42% (126) were Girls.

Majority of the mothers i.e. 75.3% were non - working and 24.7% mothers out of 300 were working.

Fig 1: Distribution of the Infants according to their Age and Sex



The **Fig 1** above shows age and sex wise distribution of the infants who were part of this study. The data below represents the distribution of sample according to the awareness of mothers about Exclusive Breastfeeding.

Table 1: Awareness of mothers about Exclusive Breastfeeding.

S.No.	Awareness about Exclusive breastfeeding	N (%)
1	Know about exclusive breastfeeding	263 (87.6)
2	Do not know about exclusive breastfeeding	37 (12.3)
	Total % of mothers	300 (100.0)

According to the National Guidelines on Infant and Young Child Feeding (2006), exclusive breastfeeding is recommended for first six months of life after birth. The data below reveals the distribution of study sample according to the duration for which the infants were exclusively breastfed.

Table - 2: The Duration for which Infants were breastfed.

S.No.	Duration of exclusive breastfeeding	N (%)
1	0-3 months	49 (16.3)
2	3-6 months	234 (78.0)
3	6-9 months	12 (4.0)
4	No exclusive breastfeeding	5 (1.7)
	Total % of infants	300 (100.0)

Majority of infants were exclusive breast fed till six months of age. **Significant** difference was found in the rate of exclusive breast feeding of infants till 3 months amongst lower, upper and middle economic status (P value: 0.026 and Pvalue:0.012). The rate of duration of exclusive reast feeding for LES, MES and HES was found to be 8%, 20.2% and 20.8% respectively.

Table 4 represents that majority of the infants i.e. 81.7% were introduced weaning foods at the age of 6 months which is according to the World Health Organization (WHO, 2001) recommendation. 12.7% of the infants were introduced weaning foods at a little early age i.e. at the age of 4 months. 5.7% of the remaining infants were introduced weaning foods at the age of 8 months.

According to the below table, there is a highly significant difference found in the time of introduction of weaning foods among families of upper and lower socio economic groups in the age group of 4 6 months and 8 10 months ($p < 0.05$). It was found that weaning foods were introduced to 16.8% infants belonging to

Table 3: Distribution of sample according to the time of introduction of weaning foods in different socio economic groups.

S.No.	Age of infants	Socio economic status			Total	p-value (M/L)
		Lower N (%)	Middle N (%)	Upper N (%)		
1	4 – 6 months	6 (6.0)	15 (15.2)	17 (16.8)	38 (12.7)	0.065
2	6 – 8 months	83 (83.0)	78 (78.8)	84 (83.2)	245 (81.7)	
3	8 – 10 months	11 (11.0)	6 (6.1)	0 (0.0)	17 (5.7)	
	Total	101 (100.0)	99 (100.0)	100 (100.0)	300 (100.0)	
p-value (U/L)		**0.05** (0.000)**				

**** Highly significant**

Table 4: Distribution of subjects according to the family members by whom the child was normally fed.

S.No.	Family members who feed the child	N (%)
1	Only Mother	219 (73.0)
2	Mother, grandmother	52 (17.3)
3	Mother, grandmother, father	8 (2.7)
4	Mother, father	4 (1.3)
5	Mother, maid	4 (1.3)
6	Only grandmother	11 (3.7)
7	Only maid	2 (0.7)
	Total % of families	300 (100.0)

families of upper socio economic group at the age of 4 months whereas there were just 6% infants in the low socio economic group who's weaning started at the same time. On the other hand, it was also observed that weaning foods were introduced to 11% infants from low socio economic group at the age of 8 months followed by 6.1% infants from middle income group and there was no infant from upper socio economic group whose weaning started so late.

It was also observed that with the increase in infant's age, there was a decrease in frequency of breastfeeding.

According to the above table-4, majority of the infants i.e. 73% (219) were generally fed by their mothers confirming the fact that the responsibility of feeding the child remains with mothers only. However, 26.3% infants were also fed by other members in the family like grandmother and father. This is because the mothers were working and belonged to joint families. There were just 0.7% infants who were fed only by the maids.

Table-5 reveals the number of infants whose height and weight was monitored regularly. According to this, weight of all the Infants ~~i.e. 100%~~ was monitored regularly at general hospital and aganwadis (42.7%), nursery homes (41.3%) private clinic and dispensaries (16%).. On the other hand, height of almost 50% infants was monitored.

According to table 6, it was interesting to note that 62.7% of the total infants were not introduced any commercial weaning foods and were weaned using home made foods only.

Table 5: Distribution on the basis of regular monitoring of height and weight of Infants.

	Height		Weight	
	Yes N (%)	No N (%)	Yes N (%)	No N (%)
No. of Infants (%)	148 (49.3)	152 (50.7)	300 (100.0)	0 (0.0)
Total Infants	300 (100.0)		300 (100.0)	

Table 6 : Introduction of market products to the infants.

S.No.	Type of marketed products	N (%)
1	Home made weaning food(no market product0	188 (62.7)
2	Market/Commercial Weaning Food	112 (37.3)
	Total	300 (100.0)

According to Table 6, it was interesting to note that 62.7% of the total infants were not introduced any commercial weaning foods and were weaned using home made foods only.

Table 7: Intake of various food items by infants of different socio economic groups.

S.No	Food item	Intake	Socio economic status			Total	P-value
			Lower N (%)	Middle N (%)	Upper N (%)		
1	Daal	Yes	91 (91.0)	87 (87.9)	79 (78.2)	257 (85.7)	P value 0.026
		No	9 (9.0)	12 (12.1)	22 (21.8)	43 (14.3)	
2	Chapaati	Yes	59 (59.0)	54 (54.5)	60 (59.4)	173 (57.7)	P value 0.74
		No	41 (41.0)	45 (45.5)	41 (40.6)	127 (42.3)	
3	Stuffed Roti	Yes	8 (8.0)	15 (15.2)	23 (22.8)	46 (15.3)	P value 0.015
		No	92 (92.0)	84 (84.8)	78 (77.2)	254 (84.7)	
4	Curd	Yes	73 (73.0)	74 (74.7)	79 (78.2)	226 (75.3)	P value 0.68
		No	27 (27.0)	25 (25.3)	22 (21.8)	74 (24.7)	
5	Eggs	Yes	19 (19.0)	27 (27.3)	34 (33.7)	80 (26.7)	P value 0.072
		No	81 (81.0)	72 (72.7)	67 (66.3)	220 (73.3)	
6	Custard	Yes	0 (0.0)	27 (27.3)	41 (40.6)	68 (22.7)	P value 0.000
		No	100 (100.0)	72 (72.7)	60 (59.4)	232 (77.3)	
7	khichadi	Yes	81 (81.0)	82 (82.8)	77 (76.2)	240 (80.0)	P value 0.48
		No	19 (19.0)	17 (17.2)	24 (23.8)	60 (20.0)	
8	Dalia	Yes	49 (49.0)	45 (45.5)	54 (53.5)	148 (49.3)	P value 0.45
		No	51 (51.0)	54 (54.5)	47 (46.5)	152 (50.7)	
9	Fruits	Yes	75 (75.0)	77 (77.8)	82 (81.2)	234 (78.0)	P value 0.57
		No	25 (25.0)	22 (22.2)	19 (18.8)	66 (22.0)	

Dal, chapatti, stuffed roti and eggs, khichadi, dalia and fruits are some of the food item given as weaning foods to the infants. However, the frequency varied among all socio -economic groups.

According to table 7, it is observed that there are few food items that are given to almost all infants as weaning foods like daal, chapatti, stuffed roti, curd, eggs, dalia, khichadi, fruits etc. These are given to them irrespective of socio economic status but the number of infants varies in each group. There is a significant difference found in giving daal, stuffed roti and custard as weaning foods to the infants belonging to upper and lower and middle and lower socio economic groups ($p<0.05$). Daal being the staple diet of our country and irrespective of its cost was preferred by majority (91%) of low socio economic status families to feed their children as compared to families (78.2%) of upper socio economic group as a weaning food. It was observed that stuffed roti/parantha was given to 22.8% infants of upper socio economic group followed by 15.2% infants of middle socio economic group and just to 8% infants of low socio economic group. Similarly, Custard was preferred more among upper and middle socio economic group as compared to lower group. It was observed that 68 infants received custard and among them 41 belonged to upper and 27 belonged to middle socio economic group. No infant from low socio economic group received custard as weaning food. More than half of the mothers(56.7%) followed timetable for feeding their children.

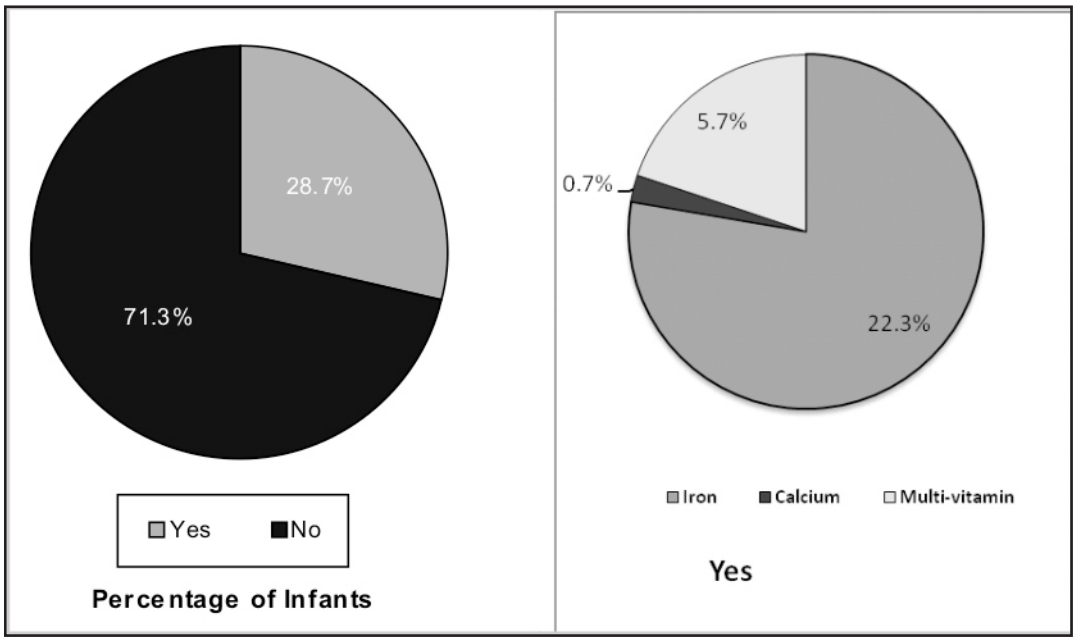
Only 25% of the total infants had weaning foods which included green leafy vegetables in different forms like soup, stuffed chapatti etc. Spinach was the most commonly used green leafy vegetable in the weaning diet of the child. Above is the study 81.7% of the total infants were those whose weaning diet included both the energy dense foods i.e. oil/ghee and sugar/jaggary etc. 9.7% of the infants were those whose weaning diet included only sugar as energy giving food item and 3.3% were those whose diet only included oil/ghee. Remaining 5.3% of the infants were those whose weaning diet was lacking in both the food items i.e. sugar as well as ghee/oil.

Food was fed from family pot to 28% infants and for other 18% weaning food was prepared seperately. However, majority were fed both from the family pot or weaning food was prepared seperately for them depending on the convinience or facilty.

Table 8: Consumption of energy dense food items in the weaning diet of the child.

S.No.	Presence of energy dense foods	N (%)
1	Only Oil/ghee	10 (3.3)
2	Only Sugar/jaggery	29 (9.7)
3	Both food items	245 (81.7)
4	None of the above	16 (5.3)
	Total	300 (100.0)

Fig 2: Supplement or tonics given to infants.



According to the above **fig 2**, majority of the infants i.e. 71.3% were not given any type of supplements or tonics whereas 28.7% infants were given supplements and tonics like iron (22.3%), calcium (0.7%), multivitamins (5.7%) etc. The supplements given to the infants were mainly suggested by the doctors or child specialists i.e. 77.9%. It was interesting to note that some mothers(nearly 20%) were also taking supplements on their own.

Discussion

Exclusive breast feeding is an indespensible component of IYCF and the present study demonstrates that majority **of the infants i.e. 78% (234) were exclusively breastfed till the first 6 months after birth** and only 16.3% of the total infants received exclusive breastfeeding only till the first 3 months.

Major reason behind discontinuing exclusive breast feeding was joining back the work place and no provision to facilitate breast feeding at the work place.Shifting of the baby to top milk is the commonest solution and a biggest hurdle that working women face in continuing with the breast milk.

A study conducted by Swami et al (2005) in Hyderabad revealed that out of 280 infants, 55.3% were exclusively breastfed till six months. Another study conducted by Chudasama et al (2009) in Rajkot revealed that out of 462 infants, prevalence of exclusive breastfeeding reported at 3 months was 97% and 62% infants were exclusively breastfed till 6 months.

However in the present study the exclusively breastfed children were 78%. This is because of high awareness of mothers about exclusive breastfeeding i.e. out of 263 mothers who knew about the term exclusive breastfeeding, 260 of them i.e. 98.9% knew the meaning of exclusive breastfeeding that is just feeding of the breast milk to the infant and nothing else along with that not even water. Provision of maternity leaves, availabilty of creches and child care

facility at workplace , teaching and educating the mothers the use of expressed milk would provide practical solutions to adress the issue of exclusive breast feeding.In the present study a very high percentage of mothers knew about exclusive breast feeding (87.6%) and weaning (40.7%) and were exclusively breast feeding the child for six months (78%) and complementary feeding due to high level of awareness as they were belonging to urban area and also due to regular visit to the hospitals or dispensaries for weighing and counselling which is supported by other studies conducted by Arya et.al 1991, Rashid et. al. 2000 and Smith and Haddad, 2003.

Complementary feeding is another very crucial component of IYCF and timely and appropriate introduction of complementary feeding plays a very significant role in preventing growth faltering and decreasing risks of micronutrient deficiencies and malnutrition.

According to the study conducted by Galhotra et.al. 2008 on 210 lactating mothers in Chandigarh reveal that 80% mothers were found to be aware of complementary foods. . In present study too majority of Infants (81.7percent) received complementary feeding at the age of 6-8 months. This age has been recommended and found to be appropriate as per the norms of Infant and Young child feeding (WHO 2004). The results of the present study are corroborated by the studies conducted by Banik 2001 and Madhu et.al. 2009. Contrasting results have been reported by NFHS-3 (2005-2006) where in India only 55% of infants receive semi solid and good food in addition to breast milk during 6-8months of age. The mothers had not only initiated timely complementary feeding but also made the food calorie dense as majority nearly 82 percent were adding either ghee or sugars or both to the weaning food however weaning foods were lacking in micronutrient s as no green leafy vegetables were added by very few(25%) suggesting a high level of awareness but also suggesting scope for addition and improvement.

CONCLUSION :

In the present study various indicators such as exclusive breast feeding , complementary feeding are comparable with many studies and better in comparision to NFHS 3. However , much needs to be done to reach the universal coverage level and to maintain it. Adequate resources must be made available for providing support to women at family and work places, providing skilled health care support and decreasing the promotion of commercial weaning foods in behaviour communication needs to be emphasised and promoted for exclusive breast feeding and healthy complementary feeding so as to achieve significant progress in achieving and practicing IYCF practices optimally and thus improving nutritional status and reducing malnutrition.. Also there is a need and scope for building positive environment for adopting correct IYCF practices through mass media.

Bibliography

1. Arya A, Devi R. Influence of maternal literacy on the nutritional status of preschool children. Indian Journal of Pediatrics, 1991; 58(2): 265-268.
2. Banik N.D. Breast feeding and weaning practices of Indian preschool children. Indian Journal of Community Medicine, 2001; 109- 116.
3. Chudasama RK, Patel PC, Kavishvar AB. Determinants of Exclusive Breastfeeding in South Gujrat region of India. Journal of Clinical Medical Research, 2009; 1(2).
4. Dr. Ghosh S: 1992. The Feeding and Care of Infants and Young Children, Voluntary Health Association of India, New Delhi. Chapter 2; The growing years from Infancy to Adolescence, Normal growth and development; 46 - 48

5. DLHS3. District Level Household and Facility Survey(DLHS 3). http://data.gov.in/catalog/district_level_household and facility_survey_dlhs_3.
6. Galhotra A, Abrol A, Aggarwal N, Goel N. Impact of community based awareness campaign on breast feeding among lactating women in Chandigarh. The Internet Journal of Health, 2008; 7(1); 21-27.
7. Kumar N, Shekhar C, Kumar P and Kundu AS. Kuppuswamy's Socio economic Status scale updating for 2007. Indian J of Pediatrics 2007. Dec;74(12):1131-2.
8. Madhu K, Chowdary S, Masthi R. Breastfeeding practices and new born care in rural areas: A descriptive cross sectional study. Indian Journal of Community Medicine, 2009, 34(3): 243 247.
9. *National Guidelines on Infant and Young Child Feeding. Ministry of Women and Child Development (Food and Nutrition Board), Government of India. 2006: 2nd edition; 1 28.*
10. *NFHS(2005-2006).National family Health Survey(NFHS).www.nfhsindia.org*
11. Rasheed S, Siddiqui I: **Decline in Breast feeding, who is to be blamed?!! A Study of Knowledge, Attitude and Practice of Breast Feeding amongst Nurses.** *Journal of Pakistan Medical Association,* 2000, **50**(1):8-11.
12. Reddy B P. Infant health: A Socio Demographic Analysis. Discovery Publishing House Pvt. Ltd. New Delhi. 2008; chapter 1, Determinants of Infant's Health; 66 107.
13. Smith L., Haddad L. 'How potent is economic growth in reducing under nutrition? What are the pathways of influence? New cross-country evidence', Economic Development and Cultural Change, 2002; 51(1): 55-76.
14. Sundaram K. Employment and poverty in India. Economic and Political Weekly 2007; 3121 3131.
15. Swami R, Joshi S, Chadha M. Feeding patterns prevailing among Infants in a rural area of Hyderabad. The Internet Journal of Health, 2005, 12(3): 23 25.
16. WHO, Child Growth Standards, z scores. Weight for age, Boys and Girls: Birth to 2 years, 2008.
17. www.**nfhs**india.org/nutrition_report_for_website_18sep09.pdf *visited on 18th March, 2010.*
18. WHO(2001). Infant and Young Child Feeding- World Health Organisation. www.who.int/ nutrition/ publications/ infant feeding/ 9241562544.