

Research Paper :

## Existing infant feeding and weaning practices in an urban setup

RITU CHHABRA AND SUBHASHINI VERMA

Received : April, 2010; Accepted : July, 2010

### ABSTRACT

Two hundred and four babies (0-12 months) were selected purposively and the information about the feeding and weaning practices followed by their mothers was collected through a questionnaire. Seventy per cent of babies were given prelacteal feed. Most of the mothers (96.57%) initiated breast feeding, out of which 40 per cent of them breastfed their babies within their first day of life. Colostrum was fed to 95.6 per cent of the babies. Only 89 (43.6%) babies were given complementary food whereas 44.9 per cent of these babies were given commercial semi solid foods like Farex and Cerelac. Most commonly given liquid home made foods were *dal* soup, juice and tea followed by semi-solid foods like *Kheer*, banana, *dalia*, *khichri*, curd and boiled potatoes. Almost 80.5 per cent of 41 infants were given commercial milk during 0-3 months of age. Ninety eight (48%) babies were started with bovine milk but it was stopped for four babies after an incidence of diarrhoea. Incidence of diarrhoea was more (50%) in the infants within the age of first three months.

See end of the article for authors' affiliations

Correspondence to:

**RITU CHHABRA**

Department of Food Science and Nutrition, College of Home Science, Punjab Agricultural University, LUDHIANA (PUNJAB) INDIA  
Email:ritu1985@yahoo.co.in

Chhabra, Ritu and Verma, Subhashini (2010). Existing infant feeding and weaning practices in an urban setup, *Asian J. Home Sci.*, 5 (2) : 250-254.

**Key words :** Feeding and weaning practices, Prelacteal feed, Colostrum and complementary foods

Growth in children is most rapid in the first year of life and is a key indicator of child's health and development. Human baby is expected to thrive on mother's milk which is especially designed by nature. The duration of breast feeding largely determines how much this form of feeding has a favourable influence on the prevention of infectious diseases, child development and survival. In order to achieve optimum development, it is essential that every child gets adequate breast feeding and complementary nutrition at the appropriate age as the physical and mental development of the child is significantly influenced by the feeding and rearing practices.

### METHODOLOGY

A sample of 204 babies between the age group of 0-1 year was selected from two leading hospitals in Ludhiana city. A questionnaire was developed to collect information about the socio-economic status of the families and feeding and weaning practices followed by the mothers/caretakers. Pretesting of the questionnaire was done on 10 subjects and were excluded from the study sample. The method used for the collection of data was personal interview of the mother or caretaker of the subject. The information was collected from November 2008 to March 2009.

### FINDINGS AND DISCUSSION

The findings obtained from the present investigation as well as relevant discussion have been presented under following heads:

#### Prelacteal feed:

In the present study, 159 (78%) infants were given prelacteal feeds such as honey, sugar and *gur* (Table 1). Honey was most preferred prelacteal as most of the infants (82.4%) were given honey, *gur* was given to 9.4 per cent followed by sugar (8.2%).

Nayek *et al.* (2006) conducted a study in two hospitals and reported that more than half of the mothers (55.7%) had given prelacteal feeds to their newborn babies. On the other hand, 44.3 per cent mothers used colostrum as first feed for their newborn. Among 334

**Table 1: First feed given to the babies**

| Parameters                             | Number     |
|--|------------|
| <b>Type of feed (n=204)</b>            |            |
| Prelacteal feed                        | 159 (78)   |
| Milk feed                              | 45 (22)    |
| <b>Type of prelacteal feed (n=159)</b> |            |
| Honey                                  | 131 (82.4) |
| Sugar                                  | 13 (8.2)   |
| Gur                                    | 15 (9.4)   |

\* Figures in the parentheses are percent values

mothers, who offered prelacteal feed to their babies, honey was the commonest (80%) whereas 11 per cent offered sugar water, 4 per cent gave cow's milk (diluted), while remaining mothers (5%) used infant formula.

### Initiation of breastfeeding:

Majority of mothers (96.57%) initiated breast feeding, only 3.43 per cent of the infants were not breastfed at all. The reasons given were that mothers of 5 infants did not have any milk secretion and 2 infants did not accept the breastfeed. Only 40 per cent of the mothers initiated breastfeeding within 24 hours and 19.8 and 20.8 per cent on 2<sup>nd</sup> and 3<sup>rd</sup> day, respectively. Some mothers (13.2%) started breast feeding between 4<sup>th</sup> to 7<sup>th</sup> day. There were mothers (6.1%) who initiated breastfeeding quite late *i.e.* after 7<sup>th</sup> day because of caesarian section (Table 2).

**Table 2 : Initiation of breastfeeding**

|  |           |
|--|-----------|
| 1 <sup>st</sup> day                    | 79 (40.1) |
| 2 <sup>nd</sup> day                    | 39 (19.8) |
| 3 <sup>rd</sup> day                    | 41 (20.8) |
| 4 <sup>th</sup> to 7 <sup>th</sup> day | 26 (13.2) |
| After 7 <sup>th</sup> day              | 12 (6.1)  |
| Total                                  | 197 (100) |

\* Figures in the parentheses are per cent values

Colostrum is the pale yellow fluid secreted by the mother during first few days after delivery. Since it is rich in antibodies thus provides immunity to the new born. Maximum number (95.6%) of mothers fed colostrum to their babies, only two mothers had reported to discard colostrum because of some customs in their families whereas seven mothers did not feed their babies at all as mentioned above. Therefore, they were deprived of the benefits of colostrums. Similar observation was reported in a study conducted in West Bengal by Jadab *et al.* (2008) that out of 120 infants, 112 (93.3%) infants were fed colostrum.

### Number of feeds per day:

Out of 204, only 159 infants were getting mother's feed and the number of feeds ranged from 4-11 per day. Starting with the 11-12 feeds in the first month, number of feeds gradually reduced to 6-7 by 6 months of age which further reduced to 4-5 by the end of one year. With introduction of complementary foods, the babies feel satisfied for longer period of time and number of feeds decreased (Table 3). Siali (1990) reported that in infants living in slums, the number of feeds ranged from 4-12 per day. More than half of the mothers (64.95%) gave 10-12 feeds in the age of 0-5 months, followed by 7-9 feeds by

**Table 3 : Number of mothers' feeds per day according to age**

| Age (months) | No of infants | No of feeds | Time interval | No night feed |
|--------------|---------------|-------------|---------------|---------------|
| 0-1          | 23            | 11.43       | 1.76          | 1             |
| 1-2          | 35            | 9.9         | 2.1           | 2             |
| 2-3          | 24            | 8.25        | 2.41          | 1             |
| 3-4          | 18            | 7.33        | 2.6           | 2             |
| 4-5          | 12            | 6.91        | 2.7           | 2             |
| 5-6          | 11            | 6.6         | 2.85          | 0             |
| 6-7          | 7             | 6.4         | 3.45          | 0             |
| 7-8          | 5             | 5.4         | 4.1           | 1             |
| 8-9          | 7             | 5           | 4.33          | 0             |
| 9-10         | 7             | 5.5         | 4             | 1             |
| 10-11        | 5             | 4.2         | 5.6           | 1             |
| 11-12        | 5             | 4.75        | 4             | 1             |
| Total        | 159           |             |               | 12            |

30.92% in the age of 5-9 months. Only 4.13 % mothers gave 4-6 feeds per day to their babies in the age of 10-12 month.

Also Devadas *et al.* (1999) reported that all the new borns were breast fed 9 to 11 times almost upto 15 days of delivery but by the end of the first month, only 51 per cent of the infants were breast fed 7 to 9 times. A steep reduction was found in the frequency of feeding to 3 to 6 times by third month.

Though all the mothers were not working, yet there were 39 infants who were taken care of by others in mother's absence. Most of the caretakers (84.6%) were grandmothers, 12.8 per cent aunts and only 1 infant (2.6%) was taken care of by the maid in the house. According to Devadas *et al.* (1999) older female relatives in the joint family system often extend support to take care of the infants. In the present study also 52 per cent of mothers belonged to joint families. Therefore, looking after the baby in mother's absence was not a problem.

### Addition of top milk:

Maximum per cent (88.78%) of infants were given bovine milk before the age of 6 months and rest (11.22 %) of them were given after the age of six months with maximum per centage (7.1%) during 6-7 months (Table 4). Kumar *et al.* (1992) reported that one third of the children less than 3 months received animal milk and 44.6 per cent between 3-6 months.

Out of 41 of the infants who were given commercial milk, majority (46%) of them were given within one month after birth whereas 19.5 per cent of the infants received it in the age group of 1-2 months (Table 4). It was surprising to note that majority (80.5%) of the infants got

**Table 4 : Age of adding top milk (n=139)**

| Age (months) | Bovine milk | Commercial milk |
|--------------|-------------|-----------------|
| 0-1          | 36 (36.7)   | 19 (46)         |
| 1-2          | 11 (11.2)   | 8 (19.5)        |
| 2-3          | 12 (12.3)   | 6 (15)          |
| 3-4          | 15 (15.3)   | 4 (9.8)         |
| 4-5          | 4 (4.1)     | 2 (4.9)         |
| 5-6          | 9 (9.18)    | 1 (2.4)         |
| 6-7          | 7 (7.14)    | 0               |
| 7-8          | 2 (2.04)    | 1 (2.4)         |
| 8-9          | 1 (1.02)    | 0               |
| 9-10         | 1 (1.02)    | 0               |
| Total        | 98 (100)    | 41 (100)        |

\* Figures in parentheses are percentages

commercial milk when they were as young as less than three months of age and rest 17.1 per cent received commercial milk in between 3-6 months of age. Seventy and 48 per cent of the nursing mothers belonging to the high and middle income group respectively had given commercial milk substitutes to their infants (Devadas *et al.*, 1999).

Buffalo's milk was given by maximum (63.3%) of mothers followed by cow's milk (35.7%) whereas only 1 per cent of infants were given goat's milk (Table 5). In case of commercial milk, maximum (85.4%) mothers preferred to give lactogen to their infants and few others were recommended by doctor to give commercial

**Table 5 : Type of top milk given (n=139)**

| Bovine  | Commercial |          |           |
|---------|------------|----------|-----------|
| Buffalo | 62 (63.3)  | Lactogen | 35 (85.4) |
| Cow     | 35 (35.7)  | Nusobee  | 4 (9.8)   |
| Goat    | 1 (1)      | Nan-1    | 1 (2.4)   |
| -       | -          | Isomil   | 1 (2.4)   |
| Total   | 98 (100)   |          | 41 (100)  |

\* Figures in parentheses are percentages

products like Nusobee, Nan-1 and Isomil according to the problem of their infant. Kumar *et al.* (1992) reported that type of top milk included were buffalo (14.5%), cow

(8.3%) or goat (2.1%) and infant formula (17.5%). Negi and Kandpal (2004) in their study observed that 47.7 per cent mothers fed buffalo's milk, 31.8 per cent cow's milk, and 17.2 per cent used buffalo's, cow's as well as goat's milk and only 3.3 per cent mothers fed powdered milk to their children.

Out of the 98 mothers who were giving bovine milk to their infants, only 65 (66.32%) were adding sugar to the milk. And out of these 65 mothers, maximum mothers (55.4%) were adding very little amount of sugar (1/4 tea spoon), 33.9 per cent used 1/2 tea spoon sugar while 9.2 and 1.5 per cent mothers used 1 and 2 teaspoons of sugar to the bovine milk, respectively.

#### Average quantity of milk given according to age:

Out of 98 babies started with bovine milk, only four of them stopped consuming bovine milk after an incidence of diarrhoea and were advised lactogen by the doctor (Table 6). The quantity of top milk was 370ml in case of 0-3 months and 326 ml for 3-6 month old babies. The number of babies who were partially breastfed was more in both the age groups (57) and the number of bottle feeds was also varied. The average quantity of milk was highest between the age of 6-9 months because when the babies were weaned off, the quantity of top milk increased. Quantity of top milk increased with age but decreased as the complementary foods were added to the infant's diet.

#### Extent of dilution of top milk:

Out of the 98 mothers who gave top milk to their infants, 46 (47%) of them practised dilution of top milk while the rest 53% were giving milk as such without any dilution. Maximum infants (69.6%) were getting three parts of milk diluted with one part of water (3:1). Twenty one (45.6%) of 32 infants were below 6 months of age. Only 5 (10.8) infants were given milk diluted in the ratio of 2:1 while a little higher proportion of infants (19.6%) were getting very diluted milk in the ratio of 1:1.

Kumar *et al.* (1992) reported that eighty per cent of the mothers diluted the milk up to three times with plain water. According to Aggarwal *et al.* (1998), out of the 73 (97.33%) mothers who started the babies on animal

**Table 6 : Average quantity of milk given according to age**

| Age (mn) | Number of infants | Partially breastfed | Weaned off | Exclusive breastfed till 6 months | Average quantity of milk (ml) |
|----------|-------------------|---------------------|------------|-----------------------------------|-------------------------------|
| 0-3      | 27                | 18                  | 9          | -                                 | 370                           |
| 3-6      | 30                | 23                  | 7          | -                                 | 326                           |
| 6-9      | 19                | 4                   | 10         | 5                                 | 521                           |
| 9-12     | 18                | 6                   | 8          | 4                                 | 480                           |
| Total    | 94                | 51                  | 34         | 9                                 |                               |

milk (cow or buffalo), 60 (80.13%) diluted milk in varying proportion from 1:1 to 4:1. Pandey *et al.* (2002) observed that in a high percentage (48.64) of study subjects, cow's milk was diluted with less than quarter. This was believed to increase its digestibility. Only 15 per cent of children were fed top milk without dilution.

Only 11.3 per cent of the mothers reported that they boiled the milk every time prior to feeding while rest of the mothers were boiling milk only once and used to warm it before feeding. According to Siali (1990) also, majority of the mothers (93.75%) did not boil the milk every time, it was fed to the infants.

### Mode of feeding the babies:

Maximum number of mothers (91.6%) were using bottles followed by spoon and *katori* (6%) and cup (2%). It was further observed that more than fifty per cent (57.73%) of the mothers used to sterilise the bottles every time prior to feeding but sterilisation of the bottles once, twice and thrice a day was done by 11.34, 20.62 and 7.22 per cent of the mothers, respectively. There were few such mothers too who sterilised the bottle once a week (2%) and (1%) once in three days. Only 2 mothers did not practise sterilisation of feeding bottles but they used to wash these with water and detergent before every feed.

### Complementary feeding:

Only 89 (43.6%) of the infants were given complementary food and out of these only 23.6 per cent infants were given food made at home (Table 7). Most commonly given liquid homemade foods were *dal* soup, juice and tea. *Kheer*, banana, *dalia*, *khichri*, curd and boiled potatoes were the commonly added semi-solid

**Table 7 : Type of complementary food given (n=89)**

|                                    |           |
|------------------------------------|-----------|
| Home made food                     | 21 (23.6) |
| Only commercial food               | 40 (44.9) |
| Both commercial and home made food | 28 (31.5) |

\* Figures in the parentheses are percent values

foods. Solid foods included rice, biscuit and roti. Some commercial semi solid foods like Farex and Cerelac were also given to 44.9 per cent infants. There were 31.5 per cent such infants who were given both commercial as well as homemade food. Dahiya and Sehgal (2002) also reported that supplementary foods given by most of the mothers were commercial infant foods like Farex, Cerelac, Nutramul and home made preparations like *Khichri*, *Dalia*, *Halwa*, *Rice kheer*, *Semolina kheer*, mashed fruits and vegetables.

### Age of adding complementary food:

Contrary to the directive of WHO (2001) of exclusive breast feeding up to 6 months, 41 (20%) mothers added supplements before six months of age of the babies. Dahiya and Sehgal (2002) reported that semi-solid and solid supplementary foods were started before 6 months by a majority of the working mothers. According to Morisky *et al.* (2002), 62 per cent of the mothers reported to have started supplementary feeding of their infants before 5 months of age.

In a study conducted in Lohit district of Arunachal Pradesh, Gogoi and Bhattacharya (2003) reported that 55.4 per cent mothers had started weaning their babies within the age of 4-6 months. According to Hussein (2005), the early complementation was very common in Tanzania too as 20% of infants aged 0-1 months and 50% of those aged 2-3 months had been already started on complementary foods (Hussein, 2005). Shoshan (2007) observed that 40.8 per cent of the mothers started weaning within six months of age, out of which, 11.3 per cent initiated weaning on the first month of the infant life.

### Incidence of diarrhoea:

Table 8 shows that episodes of diarrhoea were more common in the infants (50%) of age less than three months. Out of the 5 infants, having diarrhoea at the age of 3-6 month, one had intolerance to mother's milk and rest of babies having diarrhoea were those who were given any kind of weaning food/ top milk before the age of six months. The incidence of diarrhoea decreased as the age of infants increased and none of older babies had diarrhoea.

**Table 8 : Incidence of diarrhoea according to age (n=14)**

| Age (months) | Number | Percentage |
|--------------|--------|------------|
| 0-3          | 7      | 50         |
| 3-6          | 5      | 35.71      |
| 6-9          | 2      | 14.29      |
| Total        | 14     | 100        |

### Conclusion:

Breast feeding was initiated on the 1<sup>st</sup> day by 79 (40.1%) of the mothers whereas almost an equal number of them 39 and 41 started on 2<sup>nd</sup> and 3<sup>rd</sup> day respectively. More than half the mothers who were over enthusiastic about the weight of their babies started complementary foods before the age of six months. The infants of 0-4 months of age had higher incidence of diarrhoea as compared to the older ones because of addition of top milk and complementary foods at an early age.

Authors' affiliations:

**SUBHASHINI VERMA**, Department of Food and Nutrition, College of Home Science, Punjab Agricultural University, LUDHIANA (PUNJAB) INDIA

## REFERENCES

- Aggarwal, A.**, Arora, S. and Patwari, A. K. (1998). Breastfeeding among urban women of low socio-economic status: factors influencing introduction of supplemental feeds before four months of age. *Indian Paediatr*, **35**: 269-273.
- Dahiya, S.** and Sehgal, S. (2002). Infant feeding practices of working and non-working urban mothers. *Indina J. Nutr. Dietet*, **39**: 367-372.
- Devadas, R.P.**, Purushothaman, V. and Paul, M. (1999). Trends in breast feeding practices. *Indian J. Nutr. Dietet*, **36**: 1-11.
- Gogoi, M.** and Bhattacharya, R. (2003). Maternal and infant feeding practices of 'Mishimi' women in Lohit district of Arunachal Pradesh. *Indian J. Nutr. Dietet*, **40**: 462-465.
- Hussein, A. K.** (2005). Breast feeding and complementary feeding practices in Tanzania. *East African J. Public Health*, **2** (1): 27-31
- Jadab, C.S.**, Pankaj, K.M. and Prमित, G (2008). Feeding practices and morbidity pattern among infants in a rural area of south 24 PGS district, West Bengal. *Indian J. Nutr. Dietet*, **45**: 440-442.
- Kumar, S.**, Nath, L. M. and Reddiah, V. P. (1992). Supplementary feeding pattern in children living in a resettlement colony. *Indian Paediatr*, **29**: 219-221
- Morisky, D. E.**, Kar, S. B., Chaudhary, A. S., Chen, K. R., Shaheen, M. and Chickering, K. (2002). Breast feeding practices in Pakistan *Pakistan J. Nutr.*, **1** (3): 137-142
- Nayek, K.**, Ghosh, T., Basu, K., Begam, H., Chatterjee, A. and De, J. (2006) First feed of newborn: practice among mothers – a hospital based study. *Indian Med. J.*, **100** (12): 415-417.
- Negi, K.S.** and Kandpal, S.D. (2004). Breast feeding practices in a rural area of District Dehradun, Uttranchal. *Indian J. Prev. Soc. Med.*, **35** (4): 184-188
- Pandey, S.**, Tripathi, S. K., Tandon, J., Mishra, C. P. (2002). Weaning in the perspective of breast feeding in rural area. *Indian J. Nutr. Dietet*, **39**: 223-230.
- Siali, M.** (1990). *Infant feeding practices in slums of Ludhiana city*. M.Sc. Thesis, Punjab Agricultural University, Ludhiana, Punjab, India.
- Shoshan, A. A.** (2007). Breast feeding practices and weaning habits. *Pakistan J. Nutr.*, **6** (4): 318-322.
- World Health Organisation** (2001) [http://www.who.int/nutrition/topics/complementary\\_feeding/en/index.html](http://www.who.int/nutrition/topics/complementary_feeding/en/index.html)

\*\*\*\*\*  
\*\*\*\*\*