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Infant and Pre-School Child Feeding Practices: A Comparative Study in Some Selected Urban and Slum Area of Rourkela, India

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Abstract: Adequate nutrition during infancy and early childhood is critical to the development of children's full human potential. Poor infant and young child feeding practices coupled with high rate of infectious diseases are the proximate causes of malnutrition during the 1st 2 years of life. The second half of an infant's 1st year is an especially vulnerable time. When breast milk alone is no longer sufficient to meet his or her nutritional requirements. So, supplementary feeding should start at the right time. Many children suffer from under nutrition and growth failure during this period with consequences those persist throughout their life. Children need supplementary food in addition to breast milk from the age of 6 months. In India, common problems include the provision of poor quality of supplementary food, insufficient amount of supplementary food, insufficient breastfeeding, detrimental feeding practices and contamination of supplementary food and feeding utensils. In addition if supplementary foods are given too early or too frequently, they displace breast milk which is not good for the health of children.

Key words: Breast feeding, demographic, first feed, semisolid food, artificial milk, India

INTRODUCTION

Pre-school children are the most vulnerable groups constituting 36% of the total population of India, 2001 census (Applebaum, 1975). During these years, growth is usually slower than in the 1st year of life but continues gradually. They need to be given special attention as pre-school child is an easy victim of malnutrition. Nutrition is one of the basic requirements of any living organism to grow and sustain life. The nutrition of this segment of population is of paramount importance since, the foundation for life time health, strength and intellectual capacity is laid during this period.

Malnutrition of the pre-school children can be a major hurdle to socio-economic development of the nation in the future years. Feeding practices during childhood are of critical importance for the growth and development for children, especially during the pre-school years. Breast milk is the ideal food for healthy growth and development of infants and young children (Khan, 2002). The availability of nutrients from breast milk exceeds that from any other substitute. Breast milk not only provides all the nutrient requirements for infants but also protects children from infection. The resources needed for safe artificial feeding such as water, fuel and adequate quantities of infant formula are usually scarce (Srilakshmi, 2000). Artificial feeding in these circumstances increase the risk of diarrhoeal diseases and malnutrition which in turn substantially increases the risk of infant death. The pre-school years are the period of time before a child begins his formal education during these years children continue to develop new food behaviour appropriate feeding practices begun in early childhood need continued emphasis and reinforcement during the school years (Raj, 1998).

Children are valuable assets of a nation and their welfare always reveal the strength of social and economic development of the country (Das *et al*., 1992). Thus, they need to be protected and well looked after if the country is to progress in the different spheres of human activity. In the present time, many developing countries have been striving for improvement in the quality of the life of their people through various family welfare programmes of which the child welfare programme is one (Chandrashekar *et al*., 1995). The task has become a challenging one because of the unprecedented growth in population during the last two decades or so and as for India, it is up against this challenge (Mishra, 1993).

Research design: Different types of research designs are used in different situations and for the study of different problems. Research design is relevant to the nature of the problems and the objectives of the study. The present study aims at revealing the feeding practices and nutritional anthropomity in pre-school children in sector 2 area. Hence for the purpose of this study, an exploratory cum descriptive research design is most suitable. The measure emphasis will be on the discovery of feeding practices and assessment of nutritional status as it exists in pre-school children.

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Hypothesis:

- Introduction of pre-lacteal feed and rejection of colostrum are common practice in most of the families
- Social factors like education of mother, economic status, caste, etc., determine the pattern of child feeding

Main objectives of present study:

- To find out the current trends in pre-school child feeding practices covering urban and slum area
- To identify the impact of parental education, caste and socio-economic status on pre-school child feeding

MATERIALS AND METHODS

Keeping the objectives of the present study in mind the total 120 children were selected from the mothers of the urban area and slum area. Children were in the age group of 2-6 years. In order to elicit information on the feeding practices of pre-school in two different urban and slum area. The total 125 children (60 from urban area and 60 from slum area) were selected randomly at sector 2 in Rourkela, India. Information regarding the breast milk, semisolid feed, first feed, demographic characteristics, occupation, family income, etc., were collected.

For the collection of information, a pretested questionnaire schedule was used. Keeping the objectives of the present study in mind, the data were collected from the mothers of the urban area and slum area who have children in the age group from birth to 6 years. The service related to past and present feeding practice of pre-school children. The practice of first feeding, breast feeding, artificial feeding, weaning, introduction of semi-solid food and solid food, etc., were observed and recorded.

Sampling design: The families with pre-school children in the age group of 2-6 years belonging to Rourkela were selected. Total 60 children were selected from slum area and 60 children were selected from urban area following the Simple Random Sampling Method.

Collection of data: After the selection of children from sector 2 area in Rourkela, an attempt has made for the collection of information from pre-schoolers and their mothers to assess their feeding practices were recorded. The survey was carried out during the month of January and February, 2009. An interview schedule was prepared, pre-tested and used for the collection of information. The method of collecting information through interview is usually carried out in a structured way. It involves the use of pre-determined questions. The idea being used to assess the suitability of the questionnaire schedule for collection of data to avoid the ambiguity and unnecessary repetition and to evaluate the reaction of the subjects of the study during interview.

Demographic characteristic: The demographic characteristics are based on sex, age, ordinal position, place of delivery, weight at birth, type of family, size of family, monthly income, per capita income, education of father and mother, occupation of father and mother. In slum area age of child was recorded considering the following factors together when any authentic documents like hospital discharge ticket or enquiring from parents, refering to the ages of the children of the family, refering to the important events like marriage, birth of other child or any local memorable events. To be more specific about the age the season of birth or the month of birth were always ascertained and the auspicious days like full moon day, new moon day, etc., were taken into consideration. Delivery took place either at home or in hospital. People living in slum area had no facility in hospitals moreover, they did not had the knowledge of benefit of care in hospital. So in slum area, 47% children delivered in hospital and 53% children were delivered at home. In urban area, 74% children were delivered in hospital and 26% children were delivered in nursing home. As they have free medical facility in Ispat general hospital.

Type of family: People in urban area were working in Rourkela steel plant and had come from other parts of India. So in urban area, only 26% families were joint family and 74% families were nuclear family but in slum area 64% families were joint family and 40% families were nuclear family (Table 1). Per capita income means total income divided by total no. of family members. In slum area, PCI started from Rs. 300-1100 month^{-1}. The income level was divided into 4 groups on the basis of per capita income. About 24% of the families had per capita income between

Table 1: Distribution of children on the basis of general information

	Urban		Slum	
Parameters	No.	Percentage	No.	Percentage
Sex				
Male	30	50	30	50
Female	30	50	30	50
Age (years)				
2-3	8	13	8	13
3-4	18	30	8	13
4-5	8	13	18	30
5-6	18	30	22	38
>6	8	13	4	6
Place of delivery				
Home	-	-	28	47
Hospital	44	74	32	53
Nursing home	16	26	-	-
Birth weight				
2-2.5 kg	42	70	32	54
2.5- 3 kg	18	30	8	26
>3 kg	-	-	12	20

Rs. 300-500/-. A 46% of families had PCI between Rs. 500-700/-. Total 10% families had PCI between Rs. 700-900/- and 20% families had PCI between Rs. 900-1100/- month^{-1} but in urban area, 46% families had per capita income between Rs. 2500-5,000/-, 44% families had per capita income between Rs. 5,000-7,500/- and 10% families had per capita income between Rs. 7,500-10,000/- month^{-1} (Table 2).

Education of parents: All the parents were observed to be literate with different level of education in urban area. About 26% fathers were matriculate and 74% fathers were graduate. In slum area, 44% fathers were illiterate. About 50% fathers had primary education and 6% fathers had only high school education (Table 3).

Occupation of parents: The employment status of fathers showed that the fathers belonged to different categories of occupation. In urban area, 50% fathers were class II executives. About 40% fathers were class III employees and 10% fathers were class IV employees. In slum area, 70% fathers were engaged in part time job (gardener, labour, rickshaw puller) and 30% fathers were class IV employees (working as a labourer in factories). About 96% of mothers gave the colostrum to their children and very few mothers, i.e., 4% did not give the colostrums to the children due to sickness. The mothers need some advice from other like nurse, elder relatives to decide about feeding. In urban area, 26% mothers accepted their mothers' advice and gave colostrums to their baby.

Table 2: Distribution of respondents on the basis of family information and economic status

Type of families	No.	Percentage
Slum		
Nuclear	24	40
Joint	36	60
Monthly income (Rs.)		
1,000-2,000	22	36
2,000-3,000	18	30
3,000-4,000	12	20
4,000-5,000	8	14
Per capita income (Rs.)		
300-500	14	24
500-700	28	46
700-900	6	10
900-1100	12	20
Urban		
Nuclear	44	74
Joint	16	26
Monthly income (Rs.)		
1,000-10,000	2	3
10,000-20,000	26	44
20,000-30,000	24	40
>30,000	8	13
Per capita income (Rs.)		
2500-5,000	28	46
5,000-7,500	26	44
7,500-10,000	6	10
>10,000	-	-

PCI: Per Capita Income

About 4% of mothers applied their mother-in-laws' advice and 66% obeyed doctors advice about the colostrum feeding and 4% mothers obeyed relatives' advice. The mothers had started the first feed few hours after the birth of the baby. About 70% mothers had started the first feed after 3 h. About 20% started after 6 h and get first feed to their newly born baby. About 10% mothers started after 1st day. The methods adopted by mothers to give the first feed was also presented. All mothers have breast fed and 10% mothers used spoon for giving the first feed to their infants. About 20% mothers used cotton swab and 70% mothers are directly breast feed without any help. About 96% mothers gave yellow milk to protect the baby from infectious diseases.

About 4% mothers did not give the yellow milk because they were not fit at that time. In slum area, almost all mothers gave yellow milk to their baby. The mothers do not continue to give breast feeding for a long period. They had certain causes and they stopped the breast milk and some were still continuing. About 4% are continuing the breast feeding whereas 10% stopped breast feeding. 96% stopped the breast milk due to pregnancy. About 20% stopped for less secretion of breast milk. In 4% cases, the child was unwilling to suck the breast milk and 64% of children were stopped because of old age. About 6% mothers stopped due to sickness. About 8% mothers stopped because they have to go out for work. In slum area, 46% mothers had stopped breast feeding because their children had grown-up. About 26% mothers had stopped due to their consequent pregnancy. About 16% mothers had stopped due to inadequate secretion of breast milk. About 12% mothers had stopped because they had to go out for work (Table 4).

Table 3: Information on parental education and occupation

	Urban		Slum	
Parameters	No.	Percentage	No.	Percentage
Father's education				
Illiterate	-	-	13	44
Primary education	-	-	15	50
High school education	-	-	2	6
Matric	8	26	-	-
Graduate	22	74	-	-
Mother's education				
Illiterate	-	-	58	96
Primary education	-	-	2	4
High school education	-	-	-	-
Matric	20	20	-	-
Graduate	36	80	-	-
Occupation of father				
Class-I	-	-	-	-
Class-II	30	50	-	-
Class-III	24	40	-	-
Class-IV	6	10	18	30
Part time	-	-	42	70
Occupation of mother				
House wife	54	90	22	36
Full time	4	6	-	-
Part Time	2	4	38	64

In urban area, 94% families had given artificial milk and around 6% of the families did not give the artificial milk. About 84% gave cows milk, 6% gave the tins milk and 6% did not give any artificial or tins milk to their children. About 4% gave goats milk. About 94% are fed artificial milk for proper growth, 14% because the shortage of breast milk they gave artificial milk, 50% gave this milk because the child felt hungry, 24% mothers gave artificial milk due to less secretion of breast milk. About 6% did not give artificial milk to their children. About 6% mothers have to go out for work in slum area, 60% family have given artificial milk and 40% families have not given artificial milk. About 30% families gave cow's milk, 10% families gave goat's milk (Table 5).

About 26% mothers were motivated to give tinned milk by self, 70% mothers were motivated by advertisement. About 4% mothers were motivated neighbours in slum area (Table 6). In urban area, 42% mothers were motivated by self education. About 40% mothers were motivated by advertisement, 6% mothers could not tell, 4% mothers were advised by doctors, 8% were motivated by neighours (Table 4) shown in introduction of first feeding, i.e., colostrum. The age at which the artificial milk were given 40% mothers have started between 0-6 months, 50% mothers have started between 6-12 months of the age of the child. About 10% mothers have started between 12-18 months in slum area. About 50% mothers have not given artificial milk because they have not enough money to purchase. About 10% mothers have given artificial milk between 0-6 months, 26% mother have given between 6-12 months. About 10% mothers have given between 12-18 months, 4% families have given artificial milk between 18-24 months.

Semi solid feeding: The introduction of semi solid and solid food of children had been observed and shown in Table 7. The time of introducing semi solid food was usually within 6 months of age. The semi solid food was given. About 56% of children were given semi solid food between 4-8 months of age. About 36% children were given semi solid (Table 7) food between 8-12 months of age. About 8% children between 12-16 months. The first solid food which was introduced 4% was kheer. About 36% of children were given cerelac. About 4% were given puffed rice, 20% were given suji, 14% were given bread and milk, 6% had given the half boiled egg to the their children, 6% had given banana, 20% had given sago in urban area. In slum area, 6% had given half boiled egg,

Table 4: Comparative information of breast feeding

	Slum		Urban	
Parameters	No.	Percentage	No.	Percentage
Did you give yellow milk				
Yes	60	100	58	96
No	-	-	2	4
Who advice to give colostrums				
Nurse	4	6	2	4
Mother(self)	16	14	16	26
Elder relatives	30	50	-	-
Mother-in-law	14	24	2	4
Doctors	4	6	40	66
Did you give breast milk				
Yes	60	100	60	100
No	-	-	-	-

Table 5: Distribution of the children on the basis of breast feeding

	Urban		Slum	
Parameters	No.	Percentage	No.	Percentage
How long did you give breast milk (months)				
0-5	32	54	22	36
5-10	18	30	38	64
10-15	6	10	-	-
15-20	4	6	-	-
Did you stop breast feeding				
Yes	56	94	58	96
No	4	6	2	4
Why did you stop breast feeding				
Pregnancy	2	4	16	26
Less secretion	12	20	10	16
Unwilling to take	4	6	-	-
Old age of the child	36	60	28	48
Working mother	2	4	4	6
Mother's sickness	4	6	2	4

Table 6: Distribution of the children on the basis of artificial milk feeding

	Urban		Slum	
Parameters	No.	Percentage	No.	Percentage
Did you give artificial milk				
Yes	56	94	24	40
No	4	6	36	60
Which type of artificial milk given				
Cow's milk	50	84	22	36
Goat's milk	2	4	4	6
Tinned milk	4	6	2	4
No	4	6	32	54
Why did you give artificial milk				
Feeling hungry	30	50	16	26
Working mother	4	6	6	10
Shortage of breast milk	14	24	4	6
Old age of the child	8	14	2	4
No	4	6	32	54

Table 7: Distribution of the children on the basis of semi-solid feeding

	Urban		Slum	
Parameters	No.	Percentage	No.	Percentage
The age of introducing semi-solid food (months)				
4-8	34	57	30	50
8-12	22	37	26	44
12>	4	6	4	6
What was the first solid food				
Bread tea	-	-	4	6
Kheer	2	4	2	4
Suji	12	20	14	24
Cerelac	22	36	4	6
Puffed rice	2	4	16	26
Sagoo	12	20	8	14
Bread milk	2	4	6	10
Banana	4	6	6	10
Half boiled egg	4	6	-	-

10% had given banana, 26% had given puffed rice, 10% had given bread and milk, 6% had given bread and tea. About 14% had given sago, 24% had given suji, 4% had given kheer. The age of introducing these food 50% mothers had given between 4-8 months, 44% mothers had given between 8-12 months, 6% mothers had given >12 months.

CONCLUSION

The socio-economic and environmental conditions in which the vast bulk of the children are being currently reared out. National policy with respect to ensure health and nutrition of the children must squarely rest on the strategy on a promotion of exclusive breast feeding for the 1st 6 months of life. Introduction of such supplementary feeding after 6 months with continued breast feeding makes a judicious combination of nutrition for preschool children. In slum area, children's family are living in low income level. The use of expensive commercial child's food by the mothers belong to urban area should be discouraged by making the animal milk available and should encourage the breast milk as long as possible.

The time when weaning should be started and the type of food supplement to be given depend on several factors like availability of food, education of parents, socio economic condition of family and food habits of the family. Mothers of slum area were illiterat nutritional education should be guided by health worker and non-governmental organizations about the locally available food and cheapest method of preparation so that they can make it for their children. The sanitation and hygiene are important for good health. Mothers must be aware of the overwhelming new evidences promoting to the clear superiority of the breast milk over all baby food. A vigorous movement for return to traditional breast feeding must be initiated among educated mothers of urban area and uneducated mothers of slum area.

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