

## Feeding Practice and the Factors Associated with the Feeding Practice and to Compare the Health, Nutritional Status and Other Benefits: an Analytical Study

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### Abstract

**Aim:** The aim of the present study was to study the feeding practice and the factors associated with the feeding practice and to compare the health, nutritional status and other benefits of the babies between various groups.

**Methods:** The present study was conducted in the Department of Pediatrics, ESIC Medical College & Hospital, Bihta, Patna, Bihar, India for three months and 200 breast- and bottle-fed babies and their mothers were selected for this study from our OPD. Keeping the Objectives and natures of the study in view, the 'Descriptive Survey' method of research has been adopted.

**Results:** The mothers engaged in household activities were more in breast fed babies as compared to bottle fed babies while mothers engaged in service, teaching and labour were more in bottle fed babies as compared to breast fed babies. In the present study, the mean age of mothers at the time of marriage was 20.54 years which was more among the mothers of bottle fed babies (21.05 years) as compared to mothers of breast fed babies (20.53 years). Out of total respondents, majority of them (57.5%) were belonged to families having monthly income below Rs. 10000. The mean weight of breast-fed babies was more at the age of 6,7,8,9,10,11 and months as compared to bottle fed babies in the present study. The mean weight of breast fed babies (8.01 kgs) was found more as compared to bottle fed babies (6.79 kgs).

**Conclusion:** Breast feeding can save families as much as Rs. 2500 per month formula costs. Breast feeding can save families even more money by reducing medical costs for healthier mothers and babies. Experts also agree that breast feeding holds many other benefits for both the mother and infant.

**Keywords:** Breast feeding, Formula costs, Descriptive Survey

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### Introduction

The World Health Organization (WHO) recommends that all babies receive exclusive breastfeeding (EBF) during the first 6 months of life and to continue with

breastfeeding along with complementary foods until at least the age of two. However, rates for exclusive breastfeeding continue to be low worldwide, only 36%

of babies under 6 months receive EBF. [1,2]

An increasing number of studies suggest that parents are influenced by multiple sociocultural factors that interact to guide their infant feeding decision. It has been suggested that decision-making on infant feeding begins before pregnancy and is finalized in the prenatal period. In fact, studies have identified that prenatal breastfeeding intentions are closely related with real feeding practices. [3]

It is an established fact that foundation for physical and mental health for adult life is laid during the formative years of childhood. During infancy mental abilities and social responses are closely related to the motor development of the child which is achieved normally by proper feeding practices. Further, this period is the basis for the future development of the individuals. Feeding practices play an important role in this period for proper growth and development. [4] Children are valuable assets of a nation and it is their welfare that strengthens its social and economic development. They need to be protected and well looked after if the country is to thrive and prosper in different spheres of human activity. In the present time, many developing their people through various family welfare programs of which the child welfare program are one. However, the task has become a challenging one because of the unprecedented growth in population during the last two decades or so, and as far as India is concerned, it is up against this challenge. [5]

Unfortunately, millions of children in India and other underdeveloped areas of the world are suffering from malnutrition as a result of poverty, lack of knowledge, ignorance and superstitions. If a county is to thrive and prosper in all spheres of human activity, then, it should ensure the important elements of child health by immunization, good nutrition, growth

promotion and the timely detection and treatment of common childhood disease like diarrhoea and respiratory illnesses. [6]

Breast feeding is almost universal in over the world, it was also common in the developed countries before advent of industrialism. However, the duration of breast feeding declined slowly due to several factors like education, urbanization, employment and availability of child rearing practice, yet some women resort to feeding of bottle milk to their babies because of various reasons. In recent years, numerous advantages of breast milk have been emphasized based on scientific experimentation. [7]

The aim of the present study was to study the feeding practice and the factors associated with the feeding practice and to compare the health, nutritional status and other benefits of the babies between various groups.

### Methods

The present study was conducted in the Department of Pediatrics, ESIC Medical College & Hospital, Bihta, Patna, Bihar, India and 200 breast- and bottle-fed babies and their mothers were selected for this study from our OPD. Keeping the Objectives and natures of the study in view, the 'Descriptive Survey' method of research has been adopted.

### Methodology

A self-constructed schedule has been applied to collect the information as a research tool in the study. Schedule prepared by the researcher was divided into five parts which contains information related to residence, religion, caste, members in the family, type of the family, age education, occupation, age at marriage, duration of marriage, food and addiction habit and income of the parents. Information related to babies i.e. sex, order of birth, number of sibling and type of delivery, height, weight, chest, head and

mid upper arm circumference and information related to feeding practice.

### Statistical analysis:

After getting the required information, the collected data were coded, tabulated and analyzed. The various statistical techniques i.e. the mean, standard deviation and test of significance (t-test and chi-square-test) were used for drawing valid conclusions. Statistical analysis done

using student t test. SPSS 13.0 software was used to calculate p value.  $P < 0.05$  was taken as statistically A descriptive analysis was done on all variables to obtain a frequency distribution. The mean + SD and ranges were calculated for quantitative variables. Continuous variables were compared by the Student t test. Proportions were analyzed with the chi-square test.

### Results

**Table 1: Distribution of breast-and bottle-fed babies according to occupation of their mothers, mother's age at marriage, family monthly income and according to use of colostrum (N=200)**

Mother's education	Feeding practice		Total
	Breast N%	Bottle N%	
Service	3 (3)	3 (3)	6 (3)
Labour	1 (1)	1 (1)	2 (1)
Teaching	1 (1)	6 (6)	7 (3.5)
Housewife	95 (95)	90 (90)	185 (92.5)
<b>Mother's age at marriage</b>			
15-20	50 (50)	38 (38)	88 (44)
20-25	45 (45)	50 (50)	95 (47.5)
25-30	5 (5)	12 (12)	17 (8.5)
<b>Family monthly income</b>			
0-10000	65 (65)	50 (50)	115 (57.5)
10000-20000	15 (15)	30 (30)	45 (22.5)
20000 above	20 (20)	20 (20)	40 (20)
<b>According to use of colostrum</b>			
Yes	90 (90)	75 (75)	165 (84.5)
No	10 (10)	25 (25)	35 (17.5)
<b>Area of residence</b>			
Rural	70 (70)	60 (60)	130 (65)
Urban	30 (30)	40 (40)	70 (35)

The mothers engaged in household activities were more in breast fed babies as compared to bottle fed babies while mothers engaged in service, teaching and labour were more in bottle fed babies as compared to breast fed babies. In the present study, the mean age of mothers at the time of marriage was 20.54 years which was more among the mothers of bottle fed babies (21.05 years) as

compared to mothers of breast fed babies (20.53 years). Out of total respondents, majority of them (57.5%) were belonged to families having monthly income below Rs. 10000. In the present study, the mean family monthly income was Rs. 11404.33 which was more the bottle-fed bottles (Rs. 12847.33) as compared to breast fed babies (Rs. 9961.33).

**Table 2: Mean height and weight according to age**

Age in months	Mean height (in cms.) and feeding practice				Statistical Value	
	Breast		Bottle		T	P
	N=100	Mean±SD	N=100	Mean±SD		
6	10	65.00 ±0.92	9	61.89 ±0.31	9.796	<0.05
7	40	66.89 ±1.05	15	63.10 ±1.68	12.904	<0.05
8	12	69.38 ±0.92	12	65.62 ±3.01	4.370	<0.05
9	25	71.63 ±3.16	34	66.60 ±4.16	6.314	<0.05
10	5	73.60 ±0.80	12	68.09 ±0.90	11.707	<0.05
11	4	74.33 ±0.47	10	71.75 ±1.61	3.827	<0.05
12	4	75.43 ±0.90	8	71.85±1.66	5.261	<0.05
<b>Mean weight in cms. and feeding practice</b>						
6	10	6.37 ±0.48	9	5.67 ±0.47	3.627	<0.05
7	40	7.14 ±0.69	15	6.50 ±1.09	3.340	<0.05
8	12	8.08 ±0.62	12	6.67 ±0.69	6.140	<0.05
9	25	9.00 ±0.61	34	6.70 ±1.56	9.004	<0.05
10	5	9.80 ±0.75	12	6.82 ±0.39	10.646	<0.05
11	4	9.67 ±0.47	10	7.45 ±1.12	4.679	<0.05
12	4	10.71 ±0.45	8	7.69 ±1.32	5.811	<0.05

The good health at the time of birth was more among the breast-fed babies as compared to bottle fed babies while the poor health at the time of birth was more among the bottle-fed babies as compared to breast fed babies. The mean weight of

breast-fed babies was more at the age of 6,7,8,9,10,11 and months as compared to bottle fed babies in the present study. The mean weight of breast fed babies (8.01 kgs) was found more as compared to bottle fed babies (6.79 kgs).

**Table 3: Distribution according to reason for initiating breast milk**

Reason for initiating breast milk	Feeding practice		Total
	Breast	Bottle	
Other mothers do it	5 (5)	15 (15)	20 (10)
Natural thing to do	35 (35)	20 (20)	55 (27.5)
Pure and clean	10 (10)	1 (1)	11 (5.5)
Automatic sterile	2 (2)	10 (10)	12 (6)
Free of cost	3 (3)	2 (2)	5 (2.5)
Convenient	5 (5)	8 (8)	13 (6.5)
Advised by relatives	15 (15)	7 (7)	22 (11)
To develop immunity	17 (17)	35 (35)	52 (26)
Method of contraception	8 (8)	2 (2)	10 (5)

Majority of mothers 27.5% considered breast feeding as natural thing followed by they felt that breast milk develop immunity.

### Discussion

In the present study, 200 babies and their mothers were selected. Out of selected babies, 50% each were breast fed and

bottle fed respectively and 50.00% each were belonging to urban and rural areas respectively. The breast-fed babies were found more in urban areas as compared to rural areas while bottle fed babies were found more in rural areas as compared to urban areas. Cunningham AS et al studied morbidity in breast-fed and artificially fed infants. II. The study enumerated

advantages of breast-feeding in reducing morbidity shown in a group of rural infants. The protection afforded by breast-feeding is greatest during the early months, increases with the duration of breast-feeding, and appears to be more striking for serious illness. It operates independently of the effect of associated factors such as socio-educational status, family size, day-care exposure, and birth weight. [8]

Similar studies were done by Lucas A, St James et al. They made observations on crying, fussing and colic behavior in breast-and bottle-fed infants. Early human development. Persistent infant crying and "colic" have been linked in some studies to feeding, but this association has not been tested in a planned longitudinal study comparing breast- with formula fed babies. Validated maternal diaries of infant behaviors were used, kept for three days at both two and six weeks of infant age, in a comparative study of 97 breast- or formula fed babies. These findings link the timing of the infant crying peak to the mode of feeding. Our data indicate that any regimen designed to reduce crying should commence in the neonatal period in formula fed infants. [9] Sauls HS et al studied the potential effect of demographic and other variables in studies comparing morbidity of breast-fed and bottle-fed infants. Self-selection introduces complex variables encompassing much more than milk source used for infant feeding. Reasons for selecting breast or bottle feeding relate to demographic, socioeconomic, educational, ethnic, cultural, and psychological factors, as well as maternal and infant physical and emotional health. Many of the differences in the maternal populations may affect infant care practices, access to medical care, and infant health status. [10]

Dollberg S et al did a comparison of intakes of breastfed and bottle-fed infants during the first two days of life. It was concluded that newborn infants offered

formula ad libitum every four hours consumed much larger amounts than breast-fed infants fed according to the same schedule. In addition, weight loss was more marked in breast-fed infants on day 2 of life. [11] Butte NF et al did work on human milk intake and growth in exclusively breast-fed infants. Milk intake and growth in 45 exclusively breast-fed infants were documented during the first 4 months of life. Energy and protein intakes were substantially less than current nutrient allowances. Infant growth progressed satisfactorily, compared with National Center for Health Statistics standards. A reevaluation of energy and protein intakes and allowances during infancy is merited. [12]

In a comparative study, Adebonojo FO et al did a comparison of artificial vs breast feeding in relation to infant health in a middle-class American community of 113 infants of affluent and well-educated parents in the same environment, 52 were breast fed and 61 artificially fed. No significant differences could be found between the two groups with respect to a variety of standard clinical measures of health and wellbeing. Where poor hygiene is not a factor, mother's milk per se appears to offer no advantage over present-day artificial infant foods. [13]

There was a threefold increase in clinically apparent atopic disease in offspring of allergic families when compared to controls but only a two-fold increase if the infant was breast fed. These results support the hypothesis that breast feeding and delay of exposure to known allergens may reduce the frequency of clinical allergic disease in the offspring of allergic families. [14] Faber HK, Sutton TL. Et al revealed alarming hazards of bottle feeding, and it formed the basis of teaching to medical students, mothers and the public generally, that breast feeding under practically all conditions and continued for the most protracted period

possible is preferable to bottle feeding. [15]

Sánchez-Molins et al did comparative study of the craniofacial growth depending on the type of lactation received. First, the upper incisors were found to be protruded in the bottle-fed group. Second, subjects belonging to the breast-fed group displayed a brachycephalic mandible arch, while those fed with bottle had a dolichocephalic Steiner mandibular plane. Third, both facial depth and distance of the pogonion to the perpendicular nasion presented a certain tendency to a retruded mandibular bone in the bottle-fed group. And fourth, the frequency of use of dummy and thumb suction were greater in the bottle feed group, without statistical significance. They concluded that in addition to the multiple advantages that mother's milk offers to newborns, breastfeeding also helps correct orofacial development. [16,17]

### Conclusion

Breast feeding can save families even more money by reducing medical costs for healthier mothers and babies. Experts also agree that breast feeding holds many other benefits for both the mother and infant. There is need for more cautious use of the available data and investigators must seek ways to design future studies to take into account the differences between breast-feeding and bottle-feeding mothers that affect both reported and actual infant morbidity.

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