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## A Study on infant and young children feeding practices among mothers in Thirumazhisai, Chennai, Tamil Nadu

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### ABSTRACT

In the world, under-nutrition accounts for a large scale of infant and child mortality, one of the causes being suboptimal breastfeeding and complementary feeding. It is important that adequate nutrition have to be provided during the period of first and second year of life to prevent impaired developmental milestones and malnutrition, since it is very common in India. The main aim of this study is to assess the knowledge and feeding practices among mothers of infants and children aged between 6 and 23 months. A cross-sectional study was conducted using a pre-tested structured questionnaire, which was developed based on (Infant and Young Children Feeding practices) IYCF, on 101 mothers of infants and children aged between 6 and 23 months in Thirumazhisai, Chennai. Among the 101 mothers interviewed, 93% of them had knowledge of early initiation of breastfeeding, but only 87.1% of the children were given breastfeeding within 1 hour of birth and exclusive breastfeeding practices were followed in 94% of the mothers. Statistical significant association was found between Exclusive breastfeeding and age < 25 years, socio-economic status and education. The prevalence of pre-lacteal feeding was 13.9%. Though there is adequate knowledge and feeding practices followed, further research is needed to quantify the gaps among the knowledge and practice of feeding practices among the study population.



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### INTRODUCTION

Mothers' milk is the most cost-effective and highly nutritive source for the infant to prevent infections such as pneumonia and diarrhea by protecting the immune system and promoting cognitive and physical development. Psychosocial development of the

child develops as a result of breastfeeding, as it boosts the affection and creates a strong and healthy bond between the mother and the child. Breastfeeding also strengthens emotional security and affection creating a strong bond between the mother and the child, which in turn promotes psychosocial development of a child. Initiation is key and is conducted soon after or less than 24 hours of birth of child, this prevents wastage of colostrum that contains immunoglobulins and protective cells. According to the National Family Health Survey (International Institute for Population Sciences (IIPS) and ICF, 2017), 56.2% (Male); 54.6% (Female) percentage of infants to be breastfed with 1 hour of birth. A large proportion of mothers also practice giving pre-lacteal feeds that may delay the baby from receiving colostrum. Percentage of children receiving pre-lacteal feeds is 13.4% among urban population and 14.1% and 13.0% among male and female,

according to NFHS 4 data. Exclusive breastfeeding is defined as no pre-lacteal feeds with only breast milk given for the first 6 months from the mother or wet nurse with no other liquid or even water (WHO, 2003). Around 13% of under five mortality can be prevented by breastfeeding exclusively up to 6 months of age and around 6% of under-five mortality can be prevented by adopting appropriate complimentary feeding practices (Jain et al., 2014; Jones et al., 2003). Globally, around 38% of infants from age of 0-6 months are breastfed exclusively (WHO, 2014). NFHS 4 data reveals that 82% of children less than 6 months of age were exclusively breast fed (IIPS and ICF, 2017). Hence it is important for the mother to be aware of such risks and provide adequate amount of nutrition during the first and second years of life to prevent impaired developmental milestones and the overall health of the child since it is very common, especially in India.

Unhealthy and inadequate complementary feeding practices and lack of exclusive breastfeeding has been found to be associated with risk of developing malnutrition in the first 2 years of life.

A large proportion of children can develop conditions like cognitive impairment and stunting. A recent analysis shows that suboptimal breastfeeding practices contributes to 11.6% under five mortality in children (WHO, 2014).

The data obtained from NFHS (2015-16) shows 21.9%, 67.5% and 56.7% to have initiated complementary foods by 4, 6 and 12 months, respectively. The frequencies of complementary feeds given are also significant in the growth and nourishment of the child. The minimum meal frequency among 6-8 months was found to be 52.7%, 9-11 months 29.5%, 12-17 months 38.3% and 18-23 months 43.2% based on NFHS 2015-16 (IIPS and ICF, 2017).

With the above background, the study was planned and conducted to evaluate the knowledge and feeding practices adopted among mothers of children aged less than 1 year, with emphasis on IYCF indicators, in Thirumazhisai, Chennai, Tamil Nadu.

## MATERIALS AND METHODS

### Study design

This is a community based cross-sectional descriptive study.

### Study area and population

The study was conducted among mothers of children between the age group of 6 and 23 months residing in Thirumazhisai, a semi-urban area located in Thiruvallur district of Tamil Nadu.

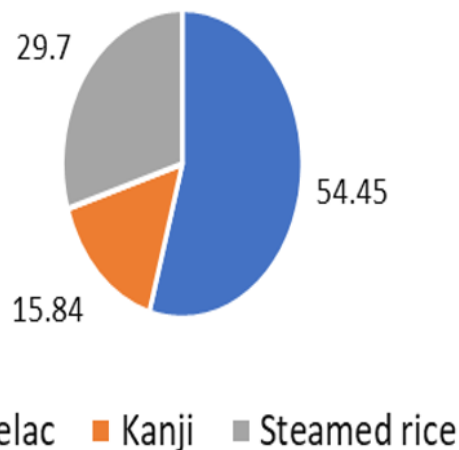


Figure 1: Complementary Foods Initiated at 6 Months

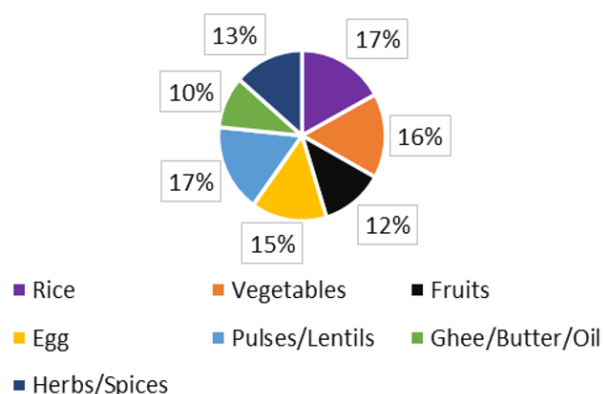


Figure 2: Supplementary Feeding Given for Children aged 6-23 Months

### Sample size and sampling method

Based on the NFHS-4 report (International Institute for Population Sciences (IIPS) and ICF, 2017), the prevalence (P) of exclusive breastfeeding was found to be 59.8%. Taking this value to be P in the sample size calculation formula  $N = 4Pq/l^2$  and an error (l) as 10%, we arrived at a sample size of 101.

### Study period

The duration of the study was for three months, from January to March 2019.

### Study tool and data collection

As per the recommendations of World Health Organization (WHO), exclusive breastfeeding have to be adopted for the first 6 months of life and continued up to 2 years of age of the child. In this study, a pretested semi-structured questionnaire was prepared using Infant and Young Children Feeding practices (IYCF) guidelines, which was based on the guiding principles set by WHO (Jain et al., 2014).

### Operational Definition

**Table 1: Social and demographic profile of mother and child**

Variable	Categories	Frequency (N =101)	Percentage (%)
Gender	Male	55	54.5
	Female	46	45.5
Age (months)	6-12	31	30.8
	13-18	35	34.6
	19-23	35	34.6
Mother's age	18-23 years	34	33.7
	24-29 years	55	54.4
	30-35 years	12	11.9
Mother's education	Illiterate	11	10.9
	Primary school	16	15.9
	Middle school	25	24.8
	High school	23	22.9
	Diploma	13	12.9
	Graduate	11	10.9
Socioeconomic Class (Based on modified kuppuswamy classifica- tion)	Professional	2	2
	Lower	38	37.6
	Upper Lower	37	36.6
	Lower Middle	19	18.8
	Upper Middle	9	8.9

Exclusive breastfeeding is defined as no prelacteal feeds with only breast-milk given for the first 6 months from the mother or wet nurse with no additional liquid or even water (WHO, 2003; UNICEF and UNAIDS, 2003).

Minimum dietary diversity was determined by the percentage of children aged 6–23 months who received four or more food groups in the previous day. Legumes, eggs, dairy products (yoghurt, milk), vitamin A-rich fruits and vegetables, sugar, honey and butter (WHO, 2003; UNICEF and UNAIDS, 2003).

Minimum meal frequency was determined by the percentage of children aged 6–23 months who received soft foods, semisolid, or solid foods three times or more in the previous day.

Complementary feeding practices were considered to be proper if the mother practice all of the above three indicators as recommended. It was considered inappropriate if at least one of the indicator was not fulfilled (WHO, 2003; UNICEF and UNAIDS, 2003).

### Statistical analysis

The data obtained was entered in Microsoft Excel and analysis was done using SPSS software version 22. Descriptive and analytical statistics was used for data analysis.

## RESULTS AND DISCUSSION

This study conducted on 101 mothers of children belonging to the age group of 6 - 24 months, showed valid results presented here using tables and pie charts.

### Socio-demographic profile of mother and child

Table 1 presents the socio-demographic details of the population under study. Nearly 45% of the children were male and 54% were female and 69.2% of the children were between the ages of 13 and 23 months. Among the mothers interviewed, 54.4% of them were found to be between the ages of 24 and 29 years and 24.8% were middle school graduates followed by 22.9% high school graduates and 2% were professionals. The socio-economic score calculated, based on Kuppuswamy classification, 37.6% belonged to lower and 36.6% to upper lower class.

### Knowledge among mothers on feeding practices

It was observed that 93.1% and 94% of mothers had knowledge on early initiation of breastfeeding and exclusive breastfeeding, respectively. It was also observed that the prevalence of knowledge on initiation of complementary feeding was 79.2% at 6 months and 15.8% at 9 months. Pre-lacteal feeds were considered inappropriate by 89.1% of the mothers Table 2.

### Feeding practices among mothers of children aged between 6 to 23 month

**Table 2: Knowledge among mothers on feeding practices**

Parameters	Categories	Frequency (N =101)	(%)
Mother's knowledge (Breastfeeding)	Initiation of breastfeed		
	1. Immediately	94	93.1
	2. <24 hours	7	6.9
	Prelacteal feeds		
	1. Yes	11	10.9
	2. No	90	89.1
	Exclusive breastfeeding		
	1. 3 months	2	2
	2. 6 months	95	94
	3. 12 months	4	4
	Frequency of breastfeeding		
	1. On demand	46	45.5
	2. Every half-hour	11	11
3. Every hour	39	38.6	
4. Every 3 hours	5	5	
Mother's knowledge (Complementary feeding)	Initiation		
	1. 4 months	3	3
	2. 6 months	80	79.2
	3. 9 months	16	15.8
	4. 12 months	2	2
	Frequency		
	1. 1-2 times	11	11
	2. 2-3 times	74	73.3
3. 3-4 times	15	14.8	
4. 3-4 with snacks 1-2 times	1	1	

It was seen that only 87.1% of mothers-initiated breastfeeding at once after birth and 12.9% after 24 hours. Pre-lacteal feeds were administered by 13.9% of mothers either due to delay in breastfeeding (4%), physician's advice (4%), or tradition (6%) and 86.1% of the mothers did not administer pre lacteal feeds. Exclusive breastfeeding and correct timely initiation of complementary foods was followed 93.1% and 66.3% of mothers Table 3.

#### Association among socio-demographic characteristics and Exclusive breastfeeding among the study participants

A statistically significant association was found between age of mother and exclusive breastfeeding ( $P < 0.05$ , OR = 8.84). Literacy status of the mother played a significant role in the practice of exclusive breastfeeding. Lower class people were more involved in exclusive breastfeeding when compared

with middle class people and statistically significant association was found between them. Figure 1 shows the first complementary foods initiated at the age of 6 months. Cerelac was the commonest food (54.5%), followed by steamed rice (29.7%) and Kanji (15.8%). Figure 2 shows the Supplementary feeding given for children belonging to the age group of 6-24 months. Vegetables, rice and pulses are the commonest followed by eggs and fruits Table 4.

In the present study, 87.1% of mothers-initiated breastfeeding immediately or within 1 hour of birth. A study conducted in Raipur, India, 61.3% of children were initiated on breastfeeding within the first hour of birth, including 33% initiated breast-feeding within half-hour of birth (Roy and Palta, 2016). In another study conducted in Odisha, 48% initiated breast-feeding within half an hour of birth and 75% of the mothers were found to have been feeding colostrum to their newborns (Maiti et al., 2015). In a

**Table 3: Feeding practices among mothers of children between the age group of 6 to 23 months**

Component	Practice	Frequency N=101	Percentage (%)
Initiation of breast-feeding	1. Immediately after birth	88	87.1
	2. > 24 hours	13	12.9
Prelacteal feeds	1. Yes	14	13.9
	2. No	87	86.1
Why administer prelacteal feeds?	1. Delay in breastfeeding	4	4
	2. On physician's advice	4	4
	3. Tradition	6	6
	4. N/A	87	86.1
Foods given as prelacteal feeds	1. Honey	4	4
	2. Sugar	2	2
	3. Cow milk	4	4
	4. Buffalo milk	4	4
	5. N/A	87	86.1
Exclusive breastfeed- ing until 6 months of age.	1. Yes	94	93.1
	2. No	7	6.9
Initiation of comple- mentary feeds	1. 6 months	67	66.3
	2. 9 months	31	30.7
	3. 12 months	3	3
Frequency of com- plementary feeding	1. 2-3 times	19	18.8
	2. 3-4 times	67	66.3
	3. 3-4 times with snacks 1-2 times	15	14.8

**Table 4: Association between socio-demographic variables and exclusive breastfeeding among the study participants**

Sl. No	Variable	Exclusive Breastfeeding		Chi-Square	P-Value	Odds Ratio
		Yes (n = 94)	No (n = 7)			
1	Gender of child	45	1	2.963	0.085	5.510
	Female	49	6			
2	Age of mother	56	1	5.435	0.020*	8.842
	<25 years	38	6			
3	>25 years			28.682	0.000*	-
	Education of mother	6	5			
	Illiterate	62	2			
4	School Education	26	0	8.21	0.004*	8.69
	Graduate					
	Socio-Economic Status	73	2			
	Lower/Upper Lower	21	5			
	Lower Middle/Upper Middle					

\* - P<0.05, Statistically Significant at 95% Confidence Interval



study conducted by S Rao et al, 86% of children were found to have been breastfed within four hours of birth (Rao, 2011), which is comparable to this study. In a study done in Allahabad, only 55.8% of mothers had their breastfeeding practices initiated within 6 hours of delivery (Kumar et al., 2006). A study done in Mumbai showed that around 82.3% of infants were breast-fed within four hours of birth (Parekh, 2004). These varying findings in different studies conducted in different parts of India may be due to the disparity in the socio-demographic variables among the population.

The percentage of exclusively breastfed children, as observed in this study, is 93.1%, although 94% of the mothers had knowledge on exclusive breastfeeding up around the age of 6 months. The data obtained from another study revealed 79.7% of the children to be breastfed exclusively up to the age of 6 months (Roy and Palta, 2016).

Mothers, due to poor educational background or traditional beliefs, give the infants pre-lacteal feeds. In this study, only 10.9 % of mothers had knowledge about pre-lacteal feeds, but 13.9% were found to practice giving pre-lacteal feeds. Pre-lacteal feeds that were given commonly were sugar, honey, water, cow milk and buffalo milk. In a report published by Jain S et al., 74.8% of children received pre lacteals like honey, sugar water on the first day (Jain et al., 2014). In a similar study done in 2017 by Mohan Y et.al, 19% practiced giving pre-lacteal feeds (Mohan et al., 2017). Further research needed to find the reason for which the mothers adopt to give pre-lacteal feeds and health education and awareness creation must be done on the harmful effects they have on the infant's health and wellbeing.

In this study, statistically significant association was found between exclusive breastfeeding practices and age of the mother, educational status and socio-economic status. Exclusive breastfeeding was predominant among mothers < 25 years of age (56%), with only up to school education (62%) and who fall under the criteria of lower/upper lower socio-economic class (73%).

According to recommendations of WHO, all the infants must start receiving complementary food from the age of 6 months in addition to breast milk, initially at a frequency of 2-3 times per day between the age of 6-8 months, gradually increasing to 3-4 times per day between the age of 9-11 months and 12 to 24 months with nutritional foods offered in additional quantities at 1-2 times per day. In this study, 79.2% of the mothers had knowledge on complementary feeding initiation by the age of 6 months and 15.8% by 9 months and 2% by 12

months of age. On the contrary only 66.3% initiated complementary feeding by 6 months of age and 30.7% by 9 months. A study conducted by S Rao et al, which shows results greater than that in this study, 77.5% of mothers were seen to have given complementary feeding at the recommended age of six months (Rao, 2011). In a study done in Delhi, around 16.5% of mothers were giving complementary feeds at the recommended age of the child (Vani Sethi et al., 2003). A study was done by Aggarwal et al., found that only 17.5% of mothers have started complementary feeding practices at the recommended time duration (Aggarwal et al., 2008). These data obtained from studies shows a lesser percentage of complimentary feeding initiation at the recommended time by the mothers.

In this study, 73.3% of mothers were aware of the minimum meal frequency. The standard complementary foods given during initiation were cerelac (54.4%), steamed rice (29.7%) and Kanji (15.8%). Only 18.8% among 6-8 months received meals 2-3 times; 66.3% and 14.8% among 9-23 months of age received meals 3-4 times and 3 to 4 times with the addition of snacks 1 to 2 times, respectively. In a study conducted by Jain S et al, MMF was observed in around 67.6% of children belonging to the age group of 6-23 months (Jain et al., 2014). These findings were better than in a study conducted by Khan AM et al which showed MMF to be in only 48.6% of children (Khan et al., 2012).

In this study, regarding minimum dietary diversity, 5 food groups were taken and percentage of children consuming from each group were assessed. Minimum dietary diversity was found to be 82.2% vegetables, 62.4% fruits, 75.2% eggs, 85.1% pulses and 50.5% butter/oil. These results are comparable to those obtained from study conducted by Roy S et al which revealed the Minimum dietary diversity for the age group of 6 to 23 months to be 15.3% consuming 4 food groups daily, 52.8% consuming 3 food groups and 31.9% consuming 2 food groups (Roy and Palta, 2016).

## CONCLUSION

From this study, there was found to be satisfactory knowledge and practices of exclusive breastfeeding and complementary feeding. This shows that the antenatal, postnatal care and health education activities are sufficient in the study area. Still, it has been found that there are some gaps in the knowledge and practice of breastfeeding and complimentary feeding which could be further addressed with the help of qualitative research to understand the needs, attitude, practices, family support, psycho-social prob-

lems etc. in a holistic approach among the study population.

## REFERENCES

- Aggarwal, A., Verma, S., Faridi, M. M. A., Dayachand 2008. Complementary feeding—Reasons for inappropriateness in timing, quantity and consistency. *The Indian Journal of Pediatrics*, 75(1):49–53.
- IIPS, ICF 2017. International Institute for Population Sciences (IIPS) and ICF. *National Family Health Survey*, pages 2015–2031.
- Jain, S., Borle, A., Agrawal, S. S., Mishra, M. K., Gupta, S. K., Bathama, V. 2014. Assessment of infant and young child feeding practices among mothers in rural Madhya Pradesh. *Natl J Community Med*, 5(4):419–423.
- Jones, G., Steketee, R. W., Black, R. E., Bhutta, Z. A., Morris, S. S. 2003. How many child deaths can we prevent this year? *The Lancet*, 362:65–71.
- Khan, A., Kayina, P., Agrawal, P., Gupta, A., Kannan, A. 2012. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. *Indian Journal of Public Health*, 56(4):301–301.
- Kumar, D., Goel, N. K., Mittal, P. C., Misra, P. 2006. Influence of infant-feeding practices on nutritional status of under-five children. *The Indian Journal of Pediatrics*, 73(5):417–421.
- Maiti, A., Sarangi, L., Sahu, S. K., Mohanty, S. S. 2015. An Assessment on Breastfeeding and Weaning Practices in Odisha. *India. American Journal of Public Health Research*, 3(4A):49–52.
- Mohan, Y., Jain, T., Dutta, R., Parasuraman, G. 2017. Does literacy status of mother influence breast feeding practices: experience from a semi urban location in Tamil Nadu, India. *International Journal Of Community Medicine And Public Health*, 4(8):2847–2847.
- Parekh, C. 2004. Study of Infant Feeding Practices: Factors Associated with Faulty Feeding. *Journal of Tropical Pediatrics*, 50(5):306–308.
- Rao, S. 2011. Study of complementary feeding practices among mothers of children aged six months to two years - A study from coastal south India. *Australasian Medical Journal*, 4(5):252–257.
- Roy, B. D. S., Palta, A. 2016. Analyzing the Determinants Influencing the Nutritional Status of Urban Slum Children of Raipur, Chhattisgarh. *International Journal of Science and Research*, 5(9):354–357.
- UNICEF, UNAIDS 2003. Global strategy for infant and young child feeding. World Health Organization. *UNICEF and UNAIDS*.
- Vani Sethi, Kashyap, S., Seth, V. 2003. Effect of nutrition education of mothers on infant feeding practices. *The Indian Journal of Pediatrics*, 70(6):463–466.
- WHO 2003. Report of the global consultation, and summary of guiding principles for complementary feeding of the breastfed child. *Complementary feeding*.
- WHO 2014. World Health Organization. National Family Health Survey (NFHS-4) 2015-16. *Global nutrition targets 2025: breastfeeding policy brief*.