

Knowledge and attitude on complementary feeding practices among parents or main care givers of children aged less than six months admitted to Paediatric wards at TH/Jaffna.

Tharanitharan P¹, Sathiadas MG²

¹ *TH/Jaffna*

² *Faculty of Medicine, Jaffna*

Abstract

Lack of knowledge is an important barrier of successful complementary feeding practice. Inadequate Information Education Communication (IEC) activities in hospitals and welfare clinics and attractiveness towards the ready to made commercial weaning foods are also contributors of failure.

The objective of the study was to determine the knowledge, attitude and practices of mothers or primary care givers regarding complementary feeding. An Institutional based descriptive study conducted in all three paediatric wards of Teaching Hospital Jaffna over a period of one year. A pretested questionnaire was administered to ascertain their knowledge, attitude and practices regarding complementary feeding. Various believes affecting their practices, knowledge on hygienic practices and feeding during illnesses was also assessed.

A total of 302 mothers and primary care givers of children aged upto six months admitted to paediatric wards were recruited and 51.3% (n=155) were aware that complementary feeding (CF) had to be introduced at the end of six months. A total of 66 (21.9%) mothers had already started CF but only half of them (10.3%) followed a medical advice. Poor milk flow was the main reason for early CF without medical advice. Around 90% were aware of good hygienic practices while feeding the child. Mothers who strongly agreed to give extra meal for 2 weeks when the child recovered from acute illness

and continued it for six months from the child started to gain weight when there was growth faltering were 1.7% (n=5) and 3.3% (n=10) respectively. Nearly 37 (12.3%) mothers strongly agreed that the child's nutritional needs increased during the illness whereas 54% (n=163) strongly disagreed. Overall 22.8% (n=69) had good knowledge, 74.2% had average knowledge and 3% had poor knowledge about CF. Literacy level, economic status, type of family, marital status of the mother and the ability to read and understand the facts given in CHDR were significantly related ($p < 0.05$) with the knowledge of mothers regarding complementary feeding.

Awareness needs to be generated through IEC activities in hospitals and primary care level regarding the benefits and importance of timely complementary feeding.

Key words

Complementary feeding, Growth faltering, Jaffna, Sri Lanka

Introduction

Growth is an important part of life of a child. The process of growth begins from the moment of conception and continues till the child becomes a fully matured adult. Nutrients are essential for maintaining growth of infants. (1) During first six months of life breast milk should be fed alone and must remain the first food for infants. After six months of age breast feeding is not sufficient for providing the nutrients needed for a growing child.

Corresponding author: Sathiadas MG, email: docsathiadas@hotmail.com, ORCID 0000-0002-7822-0447,

Submitted: January 2020 Accepted October 2020



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution and reproduction in any medium provided the original author and source are credited

The complementary feeding is the slow diminution in breast feeding, with initiation of foods other than breast milk into an infant's dietary regime. (2) Complementary foods (CF) initiated from the start of the seventh month while continuing to breast feed for a period of 2 years or more. (3) At the same early CF may lead to calorie and nutritional deficiency. (2)

There are pros and cons with the early and late complementary feeding practices. There is a higher risk of gastrointestinal infections that endure principal rationalization against the initiation of complementary foods early. (3) Complementary foods are usually introduced late in developing countries and could lead to unfavorable outcomes on nutrition, growth and development of the child as well as difficulties in consuming family diet at one year. (4, 5) Absorption of iron in breast milk is unpredictable with early introduction of cereals and particularly vegetables, whereas iron deficiency anemia is also noted when weaning is started late. (6) There is some evidence that this may safeguard against the occurrence of allergic disease. (7)

Malnutrition is more common during the transitional period from six months rather than in the first 4 to 6 months of life. It is beneficial to introduce complementary foods to fill the nutritional gap between the entire energy need and the energy provided by breast milk i.e., when a baby grows and become more active around 6 months of age. (8) Commercial weaning foods will not reduce the incidence of malnutrition in the developing countries as poor families with the highest rates of malnutrition, may not be able to afford these foods. (4)

Individuals' exposure to flavours confers to their distinctive pattern of taste preferences in selecting foods. Taste perception starts to develop in utero, and the senses of taste and smell continue to develop after birth. Early exposure to flavours, first in utero via amniotic fluid and later through breast milk impact on later food preferences. (9) Infants accept cereal prepared with breast milk or it flavored likes fruits, if mothers consumed these foods during pregnancy and breast feeding. (10)

For a growing baby feeding time is the period of learning. So the child should be fed patiently and an interactive way to encourage feeding. Forceful feeding is never accepted. (4) It is an unpleasant experience to the child, and could lead to Food Phobia. (11)

An extra diet has to be given when the child is ill and has to be continued for 2 weeks when they are recovering from the illness. If they have growth faltering due to ill health, the extra diet has to be continued for at least 2 weeks after their weight returns to the original growth potential of them. (4)

Maternal literacy has been identified as a key factor in improving child nutrition. (12) Reading CHDR was facilitated by high-level of maternal education. The information can be conveyed in specific, short, simple, and attractive way using different codes of colour according to chapters to increase the reader friendliness and to facilitate reading by less educated mothers. (13)

Under nutrition is a major problem among preschool children in Sri Lanka. Quality and quantity of the complementary feeding has been highlighted as the main contributory factor for this nutritional problem. (12, 14)

Methods

This Institutional based descriptive cross sectional study was carried out among all primary care givers of children aged less than six months admitted to paediatric wards at Teaching Hospital, Jaffna (THJ). The study period was from April 2017 to July 2018. A random sampling technique was used to collect the data. Sample was calculated on the basis of 77.7% prevalence of knowledge on complementary feeding in Karachi-Pakistan according to a study conducted among Female Health providers working in a Tertiary Care and at 95% confidence interval with 0.05 margin of error, non-response rate as 10%. The estimated sample was 300. (18)

A pretested structured questionnaire was administered by the interviewer to collect the data.

Data on demographic factors, consistency and type of complementary foods, feeding during acute illness, hygienic practices and complementary feeding practices were collected. Informed written consent was taken after briefing participants about the aim of study.

Based on the data collected a scoring system was used to assess overall knowledge. The total score was 100 and a score of ≥ 60 was considered as good knowledge, 59-40 as average knowledge and ≤ 39 as poor knowledge.

Statistically significant correlation was checked with the literacy level, family income, type of the family, marital status and the ability to understand the facts given in CHDR. Data was coded and entered into SPSS version 21 and analyzed with Chi-Square Tests. A *p* value of <0.05 was considered as statistically significant correlation. Ethical approval was obtained from the ethical review committee of the Sri Lanka College of Paediatricians.

Results

Demographic factors

Total 302 primary care givers from all three paediatric wards of THJ participated in the study. Mean age of children who were included in the study was 3.69 ± 1.63 months and majority 146 (48.3%) were hospitalized due to respiratory symptoms. Socio demographic details are given in Table 1.

Table 1: Socio-demographic details of the study population

| Demographic detail | number | percentage |
|-----------------------|--------|------------|
| Marital status | | |
| Married | 290 | 96% |
| Separated | 7 | 2.3% |
| Widow | 2 | 0.7% |
| Single | 3 | 1% |
| Family Income | | |
| <2500 | 8 | 2.6% |

| | | |
|----------------------------------|-----|-------|
| 2501-9999 | 54 | 17.9% |
| 10000-24999 | 113 | 37.4% |
| 25000+ | 127 | 42.1% |
| Educational Level | | |
| Grade1-5 | 33 | 10.9% |
| Grade6-GCE(O/L) | 155 | 51.3% |
| A/L | 71 | 23.5% |
| Certificate | 2 | 0.7% |
| Diploma | 15 | 5% |
| Undergraduate | 21 | 7% |
| Postgraduate | 5 | 1.7% |
| Type of family | | |
| Nuclear | 148 | 49% |
| Extended | 154 | 51% |
| Number of living children | | |
| 1-2 | 226 | 74.8% |
| 3-4 | 72 | 23.8% |
| 5/> | 4 | 1.3% |

Age advised to start complementary feeding

Among the total participants 155 (51.3%) responded as appropriate age to start CF was at the end of 6 months; 59 (19.5%) responded it as less than six months and 88 (29.1%) said as more than six months. A total of 66 (21.9%) had already started CF and 31 (46.9%) children had started with medical advice between 4-6/12 of age; A total of 13 (20%) had started CF in less than 4 months. Poor milk flow was found the commonest reason for early CF. Literacy level, family income, understanding the facts given in CHDR and type of family were statistically significantly correlated with the knowledge on age of starting CF with *p* value of 0.000.

Consistency of complementary foods

Out of 302 participants 149(49.3%) agreed that the complementary food should always be in the thick form from beginning; nearly one fourth ($n=71$) had agreed that the well-cooked mashed rice as the first food; 101(33.4%) had disagreed that the

food which contain small particles can be offered initially; 68(22.5%) had agreed to introduce finger food by around eight to nine months; around one third 88(29.1%) had agreed that the child should be able to eat family foods by one year.

Knowledge on consistency of complementary foods is statistically significantly correlated with literacy level, family income and ability to understand the facts given in CHDR. (Table 2)

Table 2: Statistical correlation with consistency of complementary food

| Consistency of food | Literacy level p value | Income p value | Understand the facts in CHDR p value | Type of family p value | Marital status p value |
|--|---------------------------|-------------------|--|------------------------------|---------------------------|
| I. Complementary foods should always be in the thick form from beginning | 0.048 | 0.009 | 0.039 | 0.040 | 0.785 |
| II. Well-cooked mashed rice as the 1 st food | 0.000 | 0.000 | 0.000 | 0.362 | 0.086 |
| III. Food which contain small particles can be offered initially | 0.111 | 0.000 | 0.001 | 0.583 | 0.113 |
| IV. Finger foods can be introduced around 8-9/12 | 0.038 | 0.000 | 0.000 | 0.391 | 0.064 |
| V. Child should be able to eat family foods by 1 year | 0.030 | 0.000 | 0.000 | 0.090 | 0.746 |

Type of complementary foods to be introduced

Six responses were given regarding the type of complementary foods has to be introduced during complementary feeding process to assess the knowledge on that. Most of them 235(77.8%) were aware that fish can be introduced early; whereas 182(60.2%) were not aware that the egg white

can't be given from seven month; 208(68.8%) responded giving egg yolk from ninth month as correct; 234(77.4%) of them believed as half boiled egg is a good infant food; 274(90.7%) accepted that the fruits can be given in the form of juices. Three fourth of them 231(76.4%) accepted that the chocolate can't be given as an early complementary food. (Table 3)

Table 3: Statistical correlation with type of food

| Type of foods to be given at different ages | Literacy level p value | Income p value | Understand the facts in CHDR p value | Type of family p value | Marital status p value |
|--|---------------------------|-------------------|--|------------------------------|------------------------------|
| Egg white can be introduced from seventh month | 0.141 | 0.836 | 0.273 | 0.066 | 0.916 |
| Egg yolk from ninth month | 0.064 | 0.514 | 0.935 | 0.446 | 0.214 |
| Half boiled egg is better for infant food | 0.001 | 0.071 | 0.002 | 0.715 | 0.411 |
| Fruits can be given in the form of juices | 0.927 | 0.980 | 0.247 | 0.494 | 0.394 |
| Fish can be introduced early in the weaning | 0.267 | 0.000 | 0.000 | 0.611 | 0.027 |
| Chocolates can be given in early ages | 0.156 | 0.073 | 0.111 | 0.626 | 0.477 |

Complementary feeding practices during illness

Five sentences were given regarding the facts of feeding during acute illness and were asked to respond as whether they agreed, disagreed or not sure about the fact. Details of responses given in table 3.

Table 4: *feeding practices during acute illness*

| Feeding during acute illness | Disagree | Agree | Not sure |
|--|-------------|-------------|------------|
| If the child is able to eats the usual weaning food it can be given during acute illness | 151 (50%) | 138 (45.6%) | 13 (4.3%) |
| Child's nutritional needs increase during illness than normal | 217 (71.8%) | 59 (19.5%) | 26 (8.6%) |
| Appetite may decrease during the acute illness | 218 (72.1%) | 67 (22.1%) | 17 (5.6%) |
| Extra meal has to be continued for 2weeks when the child re-covering from acute illness | 207 (68.5%) | 20 (6.6%) | 75 (24.8%) |
| If there is growth faltering extra meal has to be continued for 6/12 from the child start to gain weight | 190 (62.9%) | 17 (5.6%) | 95 (31.4%) |

All the given responses were correct. Only one response was agreed by nearly half of the samples (45.6%); whereas remaining four responses agreed by less than 20% of population. Upon the statistical test there was a statistically significant correlation between the facts regarding the feeding practices during acute illness and literacy level ($p=0.007$), total income ($p=0.000$) & understanding the facts given in CHDR ($p=0.000$).

Hygienic practices during complementary feeding

Four correct responses and an incorrect response were given to assess the knowledge and ask to respond as right or wrong. All the right facts were accepted as right by most of them and the incorrect fact was responded as wrong by 83% of samples. Hygienic practices during complementary feeding

were statistically not significantly correlated with literacy level, family income, type of family, marital status and the ability to understand the facts given in CHDR

Given responses and the hygienic practices are given in table 5

Table 5: *Hygienic practices of the mothers*

| Hygienic practice | Correctly answered N(%) | Wrongly answered N(%) |
|--|----------------------------|--------------------------|
| Care givers' hands should be washed with soap and water before preparation of food* | 299 (99) | 3 (1) |
| Child's hands should be washed before feeding* | 267 (89) | 35 (11) |
| The child can drink the well water directly | 51 (17) | 351 (83) |
| Better to serve the cooked food immediately after preparation* | 272 (90) | 30 (10) |
| The cups, bowls and spoons used to feed the child should not be used for any other purposes* | 272 (90) | 30 (10) |

*Correct statements

Overall knowledge

When consider all the data together 69 (22.8%) caretakers had good knowledge, 224 (74.2%) had average knowledge and 9 (3%) had poor knowledge. There was a statistically significant correlation between the overall knowledge and the ability to understand the facts given in CHDR. Economic status, Literacy level, marital status and type of family were statistically not significantly correlated with the overall knowledge.

Discussion

Complementary feeding practices depend on various factors such as socioeconomic status, educational level of the care taker, cultural practices, geographic area (rural/urban) etc. (2, 4, 8)

In the present study, 51.3% care takers had knowledge on initiating complementary foods at the appropriate time i.e. at the end of six months

onwards. 28% of population in this study believed that complementary feeding has to be started after 6 months of age. According to Mohsin SS et al 57.2% considered 4-6months appropriate to start complementary feeding and 21.8% of mothers said starting beyond seven months. (3) In a study conducted in Pakistan, 77% knew that weaning should be initiated at 6months of age. (18) The higher percentage seen when compare to our study may be due to selection of samples only from hospital admissions.

In current study 147(48.6%) care takers accepted, the complementary feeding has to be given in a frequency of 2-3 times per day initially; 101(33.4%) wanted to give in a frequency which can be tolerated by the child; 54(17.8%) had no idea about the frequency. Whereas Kumar et al found that 45.9% gave twice a day. It is comparable to present study. 9.83% gave on demand but that is much higher in present study (33.4%). (17) In our study higher percentage reported to have knowledge on feeding frequency.

Indian Academy of Paediatrics recommends that the complementary foods should be easily available, digestible and affordable. In the present study 71(23.5%) caretakers agreed to give well cooked rice mashed to as paste as first complementary food. Whereas 227(75.2%) disagreed.

In the current study 88(29.1%) agreed that the child should be able to eat family food by one year of age. According to a study conducted by Divya et al among mothers of urban and rural areas of Ajmer district found family pot feeding by one year of age in urban mothers was 90% and it was 56.7% in rural mothers. (21) In a study done by Kumar et al found 68.85% of mothers had not introduced vegetables & fruits at one year of age. (17)

In our study that 299(99%) care takers were aware about hand washing before giving feeding to the child. Different studies in literature review reported same finding. Mehkari et al demonstrated that it was 97.9% in their study. (18)

Nearly 81% had the ability to read and understand the facts given in CHDR. The study revealed that 69(22.8%) had good knowledge, 224(74.2%) had average knowledge and 9(3%) had poor knowledge. Study by Kulkarani et al found 20% had good knowledge, 38% had average knowledge and 42% had poor knowledge. Different methods were used to calculate the knowledge level.

In our study 66(21.9%) had started complementary feeding before 6months; half of them 31 (10.3%) had started according to medical advice. Among remaining 35(11.9%) caretakers most 28(9.3%) reported poor milk flow as the reason for early initiation of complementary feeds. Shafee et al also found not enough breast milk as a reason for early initiation. (19)

Awareness needs to be generated through Information Education Communication (IEC) activities at hospitals and primary care level regarding the benefits and importance of timely complementary feeding. The limitations of our study is that it was conducted in a tertiary care hospital among the children who admitted at paediatric wards. Community based study may be more reliable for better evaluation of demographic variables.

Conclusion

Literacy level, economic status & the ability to understand facts given in CHDR had significantly influence the knowledge on complementary feeding related to time of initiation, consistency and type of complementary food, and the feeding during acute illness.

References

1. Pattan, Jabade, Mbreshwar. A comparative study to assess the knowledge of rural and urban mothers of infants regarding weaning in selected areas at Belgaum. *Indian Journal of Health Sciences*. 2014; 7(1):42-44 Available from: Doi:10.4103/2349-5006.135088
2. WHO. Complementary feeding: family

- foods for breast fed children: World Health Organization; 2000
3. Mohsin SS, Shaikh AS, Shaikh R and et al. Knowledge Attitude and Practices of Mothers regarding Complementary Feeding. *J Dow Unif Health Sci.* 2014; 8(1):21-25
 4. Family Health Bureau. Infant and Young Child feeding Guidelines for Sri Lanka. Available from: fhb.health.gov.lk [Accessed 11th Oct 2007]
 5. Shamim.S. Weaning practices in peri-urban low socioeconomic groups. *J Coll Physicians Surg Pak.* 2005; 15:129-32.
 6. Giovannini M, Riva E, Banderali G and et al. Feeding practices of infants through the first year of life in Italy. *Acta Paediatr.* 2004; 93:492-7.
 7. Grimshaw K and et al. Infant feeding & allergy prevention. *Allergy.* 2009; 64:1407-1416
 8. Chandrani Liyanage. Infant and Young Child Nutrition. Science Books series-12. Colombo 07: National Science foundation; 2010.
 9. Cooke L, Fildes A. The impact of flavour exposure in utero and during milk feeding on food acceptance at weaning and beyond. *Appetite.* 2011 Dec; 57(3):808-11.
 10. Julie A and et al. Early Feeding: Setting the Stage for Healthy Eating habits. *Nestle Nutr Workshop Ser Pediatr Program.* 2011; 68:153-63; discussion 164-8.
 11. lechyd B, Bevan A. Health Board. Psychological Guide for Families: Feeding & Eating. NHS Wales's publication; 2014. Available from: www.wales.nhs.uk
 12. Senarath U et al. Determinants of inappropriate complementary feeding practices in young children in Sri Lanka: secondary data analysis of Demographic and Health Survey 2006–2007. *Maternal & Child Nutrition.* 2012; 8:60-77.
 13. Danansuriya N, Guruge K, Wijewardena RPK. A hospital based study on the usage pattern of Child Health Development Record as an information source on infant and young child feeding. *Sri Lanka Journal of Child Health.* 2013; 42(3): 133-138
 14. Harendra De Silva. Factors Associated with Complementary Feeding in Sri Lanka. Sri Lanka: Ministry of Healthcare and Nutrition in collaboration with UNICEF; 2008.
 15. George Du Toit and et al. Early consumption of peanuts in infancy is associated with a low prevalence of peanut allergy. *J Allergy Clin Immunol.* 2008; 122(5).
 16. Nishani H et al. Nutritional status and associated feeding practices among children aged 6-24 months in a selected community in Sri Lanka: A cross sectional study. *European Journal of Preventive Medicine.* 2015; 3(2-1): 15-23
 17. Ananda Kumar TS, Rangaswamy KB, Viswanatha Kumar HM. Weaning practices in rural Tumkur. *Curr Pediatr Res.* 2013; 17(2):115-117
 18. Mehkari S, Zehra N, Yasin H et al. Breastfeeding and weaning: Awareness and Practices among Female Health Providers working in a Tertiary Care Hospital of Karachi-Pakistan. *International Journal of Women's Health and Reproduction Sciences.* 2014; 2(5):281-286
 19. Shafee M, Firdous R. Knowledge, Attitude and Practices (KAP) of Mothers regarding Weaning in rural Areas of Karimnagar, Andhra Pradesh, India. *MRIMS Journal of Health Sciences.* 2013; 1(2):61-63
 20. Dhingra B, Mishra D, Arora P. Dal water as a weaning food: A common but inappropriate practice. *Indian J Pediatrics;* 74:962-963
 21. Divya K, Karnawat et al. Knowledge, attitude and practices about infant feeding among mothers of urban and rural areas of Ajmer district. *Journal of Medical Research.* 2015; 1(3):90-94
 22. Kulkarani GV, Angadi MM, Sorganvi VM. A cross sectional study to assess the role of maternal literacy status on weaning practices in rural community. *Journal of science.* 2015; 5(10):917-920