Research Paper

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Complementary Feeding Practices among Non Working Women in North Chennai, Tamil Nadu (South India): a Descriptive Study

Home Science

KEYWORDS : Complementary feeding, complementary foods, food frequency data and demographic profile

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ABSTRACT

The present study was carried out to assess the complementary feeding practices among non – working women in North Chennai of Tamil Nadu state. Two hundred mothers with children aged between 6 – 12 months were selected from three different private hospital located in north Chennai. The tool that was employed for the data collection was pre – tested interview schedule formulated by the researcher. Statistically the data was analyzed using mean, standard deviation and chi square. The results revealed that mothers either initiated complementary food either too early (before 6 month) or too late (beyond 6 month). About half of the mothers (42.5%) started complementary feeding at recommended age of 6 months. Early introduction of cereals and pulses below 6 month of age was witnessed among 26 % and 11% of mothers respectively. The study identified that infants consumed more of cereals and pulses compared to fruits, vegetables and milk products that are rich in essential micronutrients. Homemade traditional complementary foods were offered by 42.5% of mothers only and the rest preferred commercial infant formulas. Most commonly used complementary food was idly, rice kanji, multimix porridge, dhal rice, rasam rice, mashed banana, fruit juices and biscuit. Study also suggested that the month of introduction of solid foods was strongly associated with factors like family set up and economic status of the respondents. Early introduction of complementary foods was noticed among mothers from high income group and extended family background.

INTRODUCTION

Inappropriate feeding practices have been acknowledged as major causes of the onset of malnutrition in young infants. From the age of six months, when breast milk alone is no longer sufficient to meet child's nutritional requirements, infants enter a particularly vulnerable period during which they make gradual transition to consumption of family diet (Bhandari et al., 2004).

Of the 19 million infants in the developing world who have low birth weight (< 2,500 grams), 8.3 million are in India. This means that approximately 43 per cent of all the world's infants who are born with a low birth weight are born in India. Malnutrition is an underlying cause in up to 50 per cent of all under-five deaths. About 55 million, or one-third, of the world's underweight children under age five live in India (UNICEF, 2008).

Complementary feeding can be defined as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants and therefore other foods and liquids are needed along with breast milk. Poor infant and young child feeding behaviors are known to be one of the most important causes of child malnutrition which is a major cause of child mortality. Malnutrition is responsible, directly or indirectly, for 60 percent of the (10.9 million) deaths annually among children under five (WHO, 2003).

The recommended age for initiation of complementary foods are from 6 months of age in addition to breast milk, initially 2-3 times a day between 6-8 months, increasing to 3-4 times daily between 9-11 months and 12-24 months with additional nutritious snacks offered 1-2 times per day, as desired (WHO, 2002).

The weaning period is considered very crucial for the development and maintenance of growth of the infant. In India common problems that have been documented in literature include the feeding of poor quality complementary foods, insufficient amounts of complementary foods, poor dietary diversity, and decline in breast feeding frequency and contamination of complementary foods and utensils (Dubowitz et al., 2005). A review of feeding guidelines promoted by various national and international organisations has shown that there are inconsistencies in the specific recommendations for feeding infants and children (Dewey et al., 2009).

Since complementary feeding practices adopted by mothers play a major role in influencing the health of the children, there is a felt need to study the complementary feeding practices prevalent in north Chennai where illiteracy and poverty are rampant problems which may influence their feeding practices. Further, faulty weaning practices have their roots in socioeconomic, educational status and family set up of the mothers. Hence the goal of the study was to assess the association between the month of introduction of complementary feeding with socio demographic profile of the mother.

The major objectives are to

1. Study the current complementary feeding practices like month of initiation of complementary foods, varieties of foods used for initiation of weaning, inclusion of readymade processed food , month of introduction of different food groups, 24-hour feeding history and seven-day food-group frequency.
2. Determine the association between socio demographic characters like educational qualification of mother, family background, economic status and month of initiation of complementary food.

MATERIALS AND METHODS

Study design: This was a descriptive cross sectional study aimed at collecting data pertaining to socio demographic profile and information regarding various complementary feeding practices.

Selection of area: The study was conducted in two places Washermenpet, Thiruvotriyur of north part of the metropolitan city of Chennai. They were selected on the basis of the inclusion criteria and the willingness to cooperate. Inclusion criteria's were: 1) Mothers within the age group of 18 – 35 years. 2) Mothers of the children aged between 6 – 12 months.

Sample size: Two hundred mothers who visited pediatrician for general check up, vaccination and minor illness of the infants.

Sampling techniques: The sampling technique employed was purposive random sampling from three different private hospitals in North Chennai after seeking prior permission from the concerned authorities.

Tools: An interview schedule was formulated by the researcher to obtain information regarding socio demographic profile of the mother, general information of the infant and various complementary feeding practices. Pilot study was conducted with 10 percent of study population initially to acquire pre-knowl-

edge, concerning the subject matter of a main study and to validate the interview schedule and modifications were made accordingly.

Analysis of the data:
The raw data obtained from the interview schedule was statistically analyzed using SPSS software and conclusion was drawn accordingly.

RESULTS AND DISCUSSION:
The results pertaining to the study are discussed under the following headings:

Table 1: Socio demographic profile of the mother & child

Socio – demographic profile	N(%)
Education qualification: rs > 20000	
Primary	45(22.5)
Secondary	77(38.5)
Undergraduate	55(27.5)
Postgraduate	23(11.5)
Family set up:	
Nuclear	75(37.5)
Extended	46(23)
Joint	79(39.5)
Economic status:	
Low income	47(23.5)
Lower middle	53(26.5)
Upper middle	38(19.0)
High income	62(31)
Age of mother:	
<25	117(58.5)
>25	83(41.4)
Age of the child in months	
6 – 8	86(43)
8 – 10	47(23.5)
10 – 12	67(33.5)
Sex of the baby:	
Male	101(50.5)
Female	99(49.5)

Table 1 indicates that 45% and 77% of mothers had attained primary and secondary levels of education. Nearly 55% of mothers had professional under graduation degree and only 23% had completed their post graduate education. Nearly 37.5%, 23% and 39.5% of mothers lived in nuclear, extended and joint family background respectively.

Classification of economic status was done on the basis of Kuppuswamy's socioeconomic status revised scale (Mishra & Singh, 2003). The results concluded that almost 31% of the participating mothers belong to high income group and about 23.5% and 26.5% were from low income and lower middle income group respectively. Rest of the respondent belonged to upper middle income group.

Among two hundred mothers, the mean age of the participating mothers was 24.95±3.7 years. More than half of the interviewed mothers (58.5%) were in the age group < 25 years and rest of them were in the age group > 25 years of age.

The mean age of children was 9.05±2.1 month and majority 43% were aged between 6 – 8 month while 33.5% and 23% of the children belonged to 8 – 10 and 10 – 12 month of age respectively. The study had an even distribution of male and female children which constituted about 50.5% and 49.5% respectively.

FIGURE 1: Month of introduction of complementary foods

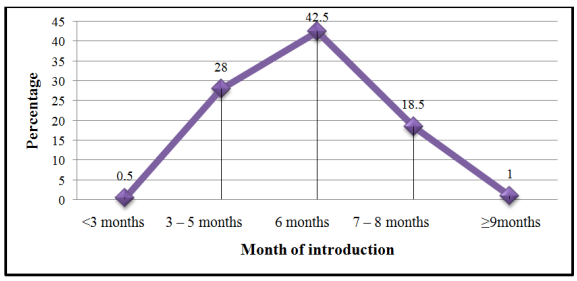


Figure 1 represents percentage distribution of month of introduction of complementary foods. Only 42.5% of mothers introduced complementary feeds by 6 month of age as recommended by WHO. Earliest age at which complementary feeding was started was three month. Mothers who reported giving complementary food by 3 - 5 months were 28%, and nearly 37% of the mothers reported starting complementary feeding at 7 - 8 month. Highest age for starting of complementary feeding was 9 months. This was a disturbing trend in complementary feeding practice which has a considerable bearing on the nutritional status of the child and may rapidly precipitate malnourishment, especially if associated with infection.

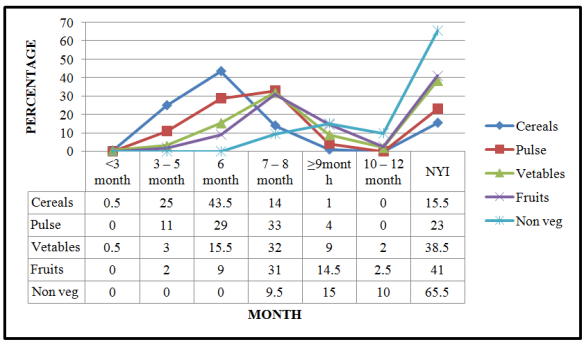
TABLE 2: Type and Varieties of food used for initiation of complementary feeding

Variables	N(%)
Type of complementary food	
Home made	84(42.5)
Readymade baby foods	2(4.5)
Both	88(44.0)
NYI	19(9.5)
Varieties of complementary food	
Biscuit	71(35.5)
Idly	119(59.5)
Readymade baby foods	63(31.5)
Rice kanji	89(44.5)
Multimix porridge	71(35.5)
Dhal rice	87(43.5)
Rasam rice	69(34.5)
Mashed banana	78(39.0)
Fruit juice	71(35.5)

From table 2 it was inferred that about 42.5% of the mother reported using only homemade traditional foods and mothers up to 44.0% of the respondent were using both homemade and commercial infant foods. It was shocking and discouraging to note that more than 31% of the mothers reported giving commercial foods to the babies. Around 9.5 % of the mother didn't initiate solid foods even after completion of 6 months of age.

Most predominantly used complementary food was mashed ildy (steamed fermented batter of rice and urud dhal) with either cow's milk or diluted sambar (seasoned dhal with vegetables). Next on list was rice kanji or gruel (boiled broken rice with salt preparation) and dhal rice (combination of mashed rice and dhal with salt and ghee). Other commonly used complementary food was rasam rice (rice with seasoned spices), fruit juices and multimix porridge (pulse and cereal combination with jaggery).

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	<3 month	3 – 5 month	6 month	7 – 8 month	≥9month	10 – 12 month	NYI
Cereals	0.5	25	43.5	14	1	0	15.5
Pulse	0	11	29	33	4	0	23
Vetables	0.5	3	15.5	32	9	2	38.5
Fruits	0	2	9	31	14.5	2.5	41
Non veg	0	0	0	9.5	15	10	65.5

FIGURE 2: Month of introduction of different food groups

Figure 2 depicts that cereal based foods were introduced to start complementary feeding at the beginning. The largest proportion of the infant was given commercial baby foods (43.5%), by 6 month of age, around 14.5 % of the mother followed late introduction of cereals i.e. after 7 month.

Around 58% of the mother introduced pulses by 6 month of age. Majority of mother 32.0% introduced vegetables only after 6 month and most commonly used vegetables are carrot and potatoes. Fruits which are considered as cold food by predominant of the respondent introduced it very late. Total of 31% of the mother initiated banana by 7 month of life. Ironically 41% of children who were introduced to solid foods were not yet exposed to fruits of any form even after 6 month of age. . About 61% of the mothers have not introduced non vegetarian food.

TABLE 3: Seven – day food group frequency data

Variables	Daily N(%)	Weekly twice N(%)	Weekly thrice N(%)	Weekly once N(%)	Monthly once N(%)	NYI N(%)
Cereals	147(73.5)	3(1.5)	4(2.0)	0	0	46(23)
Pulse	42(21)	17(8.5)	61(30.5)	18(9)	0	62(31)
Vegetables	45(22.5)	18(9)	41(20.5)	18(9)	1(0.5)	77(38.5)
Fruits	29(14.5)	16(8)	42(21)	28(14)	3(1.5)	82(41)
Non Veg Foods	5(2.5)	11(5.5)	136.5)	40(20)	3(1.5)	128(64)
Milk Products	3(1.5)	10(5)	16(8)	23(11.5)	24(12)	124(62)

FIGURE 3: Seven – day food group frequency data

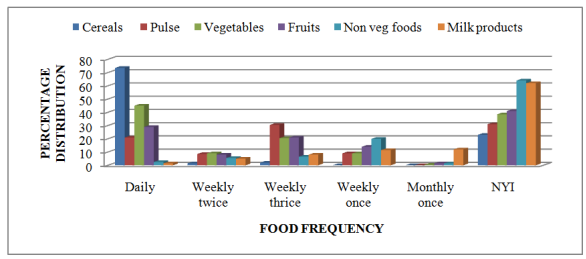


Table 3 and figure 3 exhibits seven day food frequency data which was used to capture the variations in dietary intakes of infants. It was created on the basis of the information on the number of days the child consumed different food groups in the last week of the interview. The food frequency questionnaire was used to assess the consumption pattern of six major food groups i.e. cereals, pulse, vegetables, fruits non veg and milk products of infants aged 6 - 12 months. It was observed from the data that infants had poor dietary practices/intake with the diet predominantly containing cereals and pulses but lacking in fruits, vegetables, non veg foods and milk products.

Table 4: Association between socio demographic profile of the mother and month of introduction of complementary food

Variable	N	Month of introduction of complementary foods					
		<3 month	3 – 5 month	6 month	7 – 8 month	≥9 Month	Chi square Value
Educational qualification							
primary	41	1(2.2)	12(26.7)	16(35.6)	12(26.7)	0(0)	16.474
secondary	68	0(0)	18(23.4)	32(41.6)	17(22.1)	1(1.3)	**NS**
undergraduate	50	0(0)	20(36.4)	25(45.5)	5(9.1)	0(0)	
postgraduate	22	0(0)	6(26.1)	12(52.2)	3(13.0)	1(4.3)	
Economic status							
Low income	42	0(0)	14(29.8)	18(38.3)	9(19.1)	1(2.1)	36.780
Lower middle income	47	0(0)	9(17.0)	18(34.0)	19(35.8)	1(1.9)	S**
Upper middle income	31	0(0)	7(15.8)	20(52.6)	5(13.2)	0(0)	
High income	60	0(0)	27(43.8)	29(46.8)	4(6.5)	0(0)	
Family set up							
Nuclear	68	0(0)	17(22.7)	31(41.3)	20(26.7)	0(0)	18.582
Extended	43	0(0)	11(23.9)	28(60.9)	4(8.7)	0(0)	**S***
Joint	70	1(1.3)	28(35.4)	26(32.9)	13(16.5)	2(2.5)	

s* - significant at 5% level, s - significant at 1% level, NS – not significant**

In above table, Chi square was used to study the association between the month of introduction of complementary foods and socio demographic profile of the mothers like educational qualification, economic status and family back ground.

It was evident that month of introduction of solid foods was statistically associated with economic status and family set up of the mother. Early introduction of complementary foods was noticed among mothers from high income group and extended family background. The results of the present study showed that formal education did not necessarily lead to ideal infant feeding practices. Education on infant feeding practice at the time of ante-natal and post-natal periods is essential for all mothers to improve the complementary feeding practices. The results also indicated that the living in joint and extended family have opportunities to interact with elders like grandmother and mother – in – law which may influence young mothers to initiate complementary food even before 6 month of age and reason stated was insufficient milk production and psychological feeling of mother that breast milk alone is no longer adequate after 3 month of age.

CONCLUSION:

Most infant feeding practices did not comply with the World Health Organization's (WHO) guidelines. The findings revealed that complementary feeding practices were inappropriate in terms of too early or late introduction of complementary foods, feeding of complementary foods with poor nutritive value, use of ready mixes, less dietary diversification, too early or late introduction of other food groups like fruits, vegetables etc. Proper awareness regarding infant feeding practices should be given to health care workers and mothers to promote appropriate complementary feeding practices.

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