

## Original Research Article

# Assessment of complementary feeding knowledge and practices of mothers registered at Anganwadi centers of Jaipur

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## ABSTRACT

**Background:** In children under five, malnutrition is the leading cause of morbidity and mortality. If infants are not correctly fed during their first year of life, they will develop significant health problems and be less productive later in life. Considering the importance of this, the knowledge and practices for these infants were assessed.

**Methods:** The study was carried out in the slum areas of Kachchibasti, Jagatpura, Jaipur among 100 mothers of children aged 6-24 months registered at 10 AWC selected on the basis of average functioning. The knowledge was assessed by using a questionnaire and practices of mothers observed by personal home visits (sample size-20 mothers).

**Results:** Thirty-eight per cent of the mothers were not aware about introduction of complementary feeding. 87% of the mothers are housewives and 94% of mothers are literate. Only 49% of the registered children in age group 6-12 months are collecting the supplementary nutrition, while only 62% are in age group 12-24 months is collecting supplementary nutrition.

**Conclusions:** There is a strong need for timely introduction of complementary foods, nutrition counseling during pregnancy, lactation and illness and making the mothers aware that even the community support is required for the nutrition of the children.

**Keywords:** Complementary feeding, Practices, Knowledge, Nutrition

## INTRODUCTION

Malnutrition occurs during the most critical period of development, i.e., six months to 24 months of birth with long-term implications on physical and mental development that are difficult to address later.<sup>1</sup>

According to World Health Organization, 45 per cent of child deaths occur due to undernutrition. Infant and young child feeding (IYCF) is essential for growth and their survival.<sup>2</sup> Optimal nutrition during the first two years of child reduces morbidity and mortality, lowers the risk of chronic disease, and promotes overall development.<sup>3-5</sup> In India, delayed introduction of supplemental foods is directly associated with stunting and severe stunting in 6-8-month-old infants.<sup>6</sup>

The first 1000 days of a child from conception to 2 years of age is also known as the "window of opportunity" because this is a crucial period for the development of a healthy individual.<sup>7</sup>

After six months, infants need both breast milk and complementary foods to grow strong and develop fully.<sup>8</sup> Inappropriate or delayed complementary food introduction can stunt an infant's growth.<sup>2</sup> Breast milk alone cannot provide all the nourishment needed by infants older than six months.<sup>9,10</sup> There is emerging evidence that inadequate nutrition impacts the learning ability and productivity. Stunted growth in children indicates a lack of nutrients for linear growth and the growth of critical organs, including the brain.<sup>11</sup>

As per NFHS-5 (Table 1), total number of children under five years of age in India, 19.3 per cent are wasted (acute malnutrition), 35.5 per cent are stunted (chronic malnutrition), 32.1 per cent are underweight, and 67.1 per cent are anemic, mainly due to improper timing of initiation of complementary foods.<sup>12,13</sup>

Considering the importance of timely introduction of complementary food, one of the pre-requisites is to assess the existing knowledge and practices related to complementary feeding.<sup>14</sup> There is a need to educate mothers for using locally available foods for complementary feeding and educating them with the benefits of breastfeeding for mother and child both as long and short term healthy, economic and environmental benefits.<sup>15,16</sup>

Therefore, the present study was aimed to conduct on assessment of knowledge and practices of the mothers registered at AWCs of Jaipur.

## METHODS

### *Study design*

This exploratory study was conducted between June 2016 and June 2017 on mothers registered on Anganwadi centres of Jagatpura, Jaipur, Rajasthan. All the mothers of children registered at Anganwadi centres were selected as the sample to assess knowledge and practices regarding complementary feeding. Questionnaire was prepared and questions were asked orally and recorded based on the cooperation provided by the respondents (mothers).

The means were calculated and presented in per cent values as results. Ethical approval is not required in the present study as no feeding trials were done.

### *Inclusion and exclusion criteria*

The inclusion criteria in this study were all the mothers of children aged from six months to two years registered at Anganwadi centres. The exclusion criteria were the mothers who were not registered at Anganwadi centres and incomplete questionnaires in one or more parameters.

### *The study was carried out in the following phases*

#### *Phase I: Selection of AWCs*

Jagatpura area was selected which is dominated by urban slums. Out of 39 AWCs, 10 centers were selected on the basis of average functioning of AWCs (Source: ICDS office, Jaipur).

#### *Phase II: Selection of children*

As per the ICDS sources, on an average 10-12 children aged 6-24 months at selected 10 AWCs formed the

subject group. Thus, a total of 100 children were further divided into two groups on the basis of age; children aged 6 months to 12 months and children aged 1-2 years. Equal numbers of children were taken from each group, i.e., 50+50.

#### *Phase III: General information of the children with focus on supplementary nutrition*

Literacy status and occupation of the parents, number of children collection of supplementary food given at AWC, amount and form in which this supplementary food is given to the child.

#### *Phase IV: Assessment of knowledge of mothers regarding complementary feeding*

Oral questionnaire method was used for collecting the information. The questions were probed to all the mothers of 100 children and information/responses were recorded on the questionnaire itself.

#### *Phase V: Assessment of complementary feeding practices*

On the basis of the willingness of the mothers to co-operate in the assessment and also permission to enter the house and kitchen, mothers of children aged 6 months to 2 years were selected. 10 children from 6-12 months and 10 from 1-2 years were the final subjects for assessment of knowledge on complementary feeding practices.

A checklist was prepared on the issues related to complementary feeding. This checklist included questions plus things to be observed. Personal visits were made to the houses at the time of preparation and feeding of one meal to be fed to the children.

#### *Phase VI: Identification of gaps in knowledge and practices*

The data/information collected was analyzed and gaps in knowledge and practices was enlisted.

#### *Phase VII: Formulation of sample menu*

A sample was prepared based on the gaps identified in complementary foods, foods available at home and supplementary nutrition (SN) given at AWC.

## RESULTS

### *Literacy status and occupation of parents of selected children (n=100)*

87% of the mothers were housewives and 94% of mothers found literate. It clearly shows that these are potential mothers who can take nutritional care of the children (Figure 1 and 2).

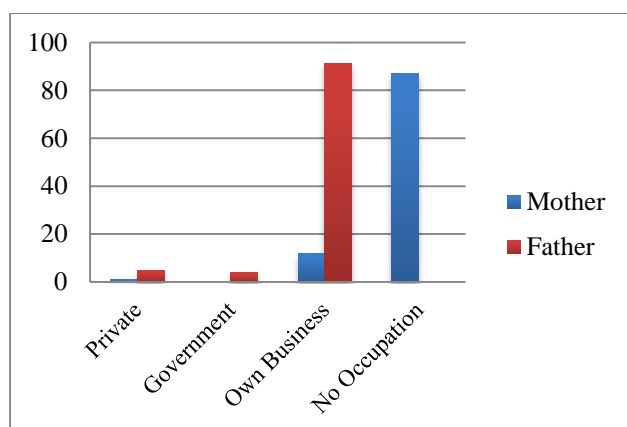


Figure 1: Occupation status of parents.

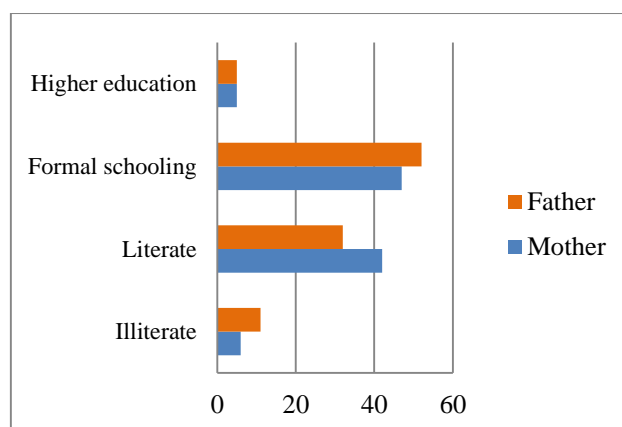


Figure 2: Literacy status of parents.

Table 1: Child feeding practices and nutritional status of children NFHS-5 (2019-21).

Indicators	India (%)			Rajasthan (%)		
	Urban	Rural	Total	Urban	Rural	Total
Children under age 6 months exclusively breastfed	59.6	65.1	63.7	70.6	70.3	70.4
Children age 6-8 months receiving solid or semi-solid food and breast milk	52.0	43.9	45.9	51.6	34.5	38.0
Breastfeeding children age 6-23 months receiving an adequate diet	11.8	10.8	11.1	9.0	8.3	8.4
Non-breastfeeding children age 6-23 months receiving an adequate diet	14.2	12.0	12.7	13.5	5.7	7.5
Children age 6-23 months receiving an adequate diet	12.3	11.0	11.3	9.7	8.0	8.3

Table 2: Percentage distribution of knowledge related to complementary feeding (n=100).

Knowledge related to time of introduction of complementary foods			
6 months	8 months	12 months	
62%	35%	3%	
Continued breastfeeding even after introduction of complementary feeding			
Knowledgeable		Not knowledgeable	
87%		13%	
Other liquids given to infants other than breastmilk			
Other liquids to be given		Not to be given	
93%		7%	
Mothers who agreed that family and community support is necessary for feeding children			
Family Support		Community Support	
Agree	Disagree	Agree	Disagree
82%	18%	58%	42%
Types of complementary foods to be introduced to infants			
Mashed, home cooked food		Commercial/market foods	
87%		13%	
Mothers who think that semisolid food should be stopped when the child is sick			
Stopped		Not to be stopped	
88%		12%	
Reasons given by the mothers for the need of introduction of semisolid food to the infants			
Due to increasing age		100%	
Due to increased rate of hunger		82%	
Breastmilk is not sufficient		12%	
Mothers who agreed that separate plate should be used to children while feeding.			
Agreed		Disagreed	
78%		22%	

### ***Distribution of 6-24 months children registered at AWC and receiving the SN at AWC (n=100)***

Only 49 per cent of the registered children in age group 6-12 months and 63 per cent were from 12-24 months age group collecting SN. However, the percentage SN has increased in the age group of 1-2 years (Table 2).

### ***Reasons for receiving SN***

Awareness about the benefits of SN communicated by Accredited Social Health Activist (ASHA) in *Arogya* Meeting and easy access to AWC SN. The mothers collecting SN (*Panjiri*) feeding their children in directly by mixing it with water or milk, as *halwa* and mixing *Panjiri* with wheat flour for making *Chapattis*. Reasons reported by those mothers who were not collecting the SN includes dislike for the *Panjiri* taste and mothers were not sensitized on regular collection of weekly rations (Table 2). In addition, households staying as tenants are not provided with SN and self-help groups does not prepare beyond a fixed number of packets. Also due to the family restrictions mothers were not allowed to go out from the house.

### ***Assessment of knowledge of mothers regarding complementary feeding***

All the mothers included in the study agreed that due to increasing age in children, introduction of solid foods is essential. 82% mothers reported that hunger gets increased and breast milk is not sufficient after the age of 6 months. 62% of the mothers were knowledgeable about introduction of complementary feeding. 38% of the mothers were not knowledgeable about introduction of complementary feeding. 80% of the mothers were knowledgeable that breastfeeding should be continued up to 2yrs. 93% of the mothers were giving market milk (*Saras*) to the children. 42% of the mothers disagreed that there is a need for community support in feeding of children between 6-24 months. 80% of the mothers were giving home based cooked food. 88% of the mothers stopped giving semisolid foods during illness. 78% of the mothers agreed that food should be served in separate plate to the children (Table 2).

### ***Assessment of current complementary feeding practices and gaps in knowledge***

These were assessed by making personal home visits and with the help of a checklist. Ten children from each age group, 6-12 and 12-24 months, were selected. The information was noted based on the observations made while at home and with the help of the checklist.

### ***Sample menu***

Menu plan taking care of all the requirements was given to mothers of 6-12 months children (recommendations with at least 2 times breastfeed in a day) and 12-24

months children taking care of all the important foods rich in macro and micronutrients. The food items which are locally available and low in cost were suggested.

### ***Child appetite***

In the present study the findings reveal that the mothers are not increasing the frequency and amount of food and not including the food from the different food groups.

### ***Care giver/mother behaviors***

In the present study it was observed that mothers were not sensitized about the collection and feeding of SN given at AWC. Though the mothers gave homemade mashed foods to the children but the type, frequency and amount found to be inadequate, the mothers agreed that food served to the child in separate plate. To ensure adequate amount of food but was not practiced.

### ***Characteristics of the diet***

During the home visits made by the researcher, it was observed that the mothers were not cleared with the consistency of the feed/diet.

## **DISCUSSION**

In the present study, majority (94%) mothers of children aged 6 months to 2 years were found literate which indicates that the mothers could understand and implement the appropriate complementary feeding practices. Hence, timely messages on complementary nutrition by the frontline functionaries can definitely help in meeting the adequacy of nutrition in children between 6-24 months.<sup>17,18</sup> Complementary feeding after the age of six months plays an important role in building the productivity in later years of children.<sup>19</sup> In the present study, it was found that less than 50% mothers of children aged 6-12 months were collecting the SN given by Anganwadi centers. It reflects that there is a strong need for focusing on timely introduction of SN at 6 months and increasing the intake as the age increases. The findings show those 6-12 months is a critical period for growth and hence, adequate nutrition becomes a prime factor.<sup>20,21</sup> Mothers were collecting the SN due to the availability and easy mixing with other flours for making food for children. Those who were not collecting reported disliking of the taste. Mothers agreed (82%) that the introduction of complementary food is required for increasing growth. Similar study reported that infants need good nutrition during growing years.<sup>22,23</sup>

According to the above findings there is a strong need for timely introduction of complementary foods, nutrition counseling during illness and making the mothers aware that even the community support is required for the nutrition of the children (AWC services). Hence, emphasis should be more on Frequency, Adequacy, Density and Utilization (FADU).<sup>24,25</sup> Further, the recently

launched programme i.e., diarrheal management using ORS and zinc should be strengthened to increase the appetite of the child. The mothers should be motivated for responsive feeding and to provide adequate time and resources for feeding of the child. Appropriate messages on increasing the caloric density of the food, hygiene and cleanliness, proper selection of foods, consistency of the food and techniques of the complementary feeding should be communicated to the mothers.<sup>26</sup> To conclude messages based on guiding principles on complementary feeding should be formulated and communicated to the mothers.<sup>27</sup>

The limitations of the study include the behaviour towards the complementary feeding practices followed by mothers which were already in the system but not followed properly. Hence more focus should be on the sensitization regarding the complementary feeding among not only the mothers but also to the father and other family members so that the problem of malnutrition could be tackled.

## CONCLUSION

Inappropriate feeding practices are a leading cause of childhood malnutrition. Children who are not breastfed are more likely to have infections, grow slower, and die by the age of one month approximately six times as often as children who receive at least some breast milk. When breastfeeding alone is no longer sufficient to meet all nutritional needs, newborns enter a critical time of supplemental feeding from six months onwards, during which they gradually transition to consuming family foods.

Child hunger, caregiver/mother behavior, and diet features are three independent factors that are likely to interact to determine complementary food consumption.

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