



Complementary feeding practices among mothers of 6-24 months children in urban slums of central India

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Abstract

Complementary feeding is an important milestone in a baby's life. It is basically the transition from milk to the family diet. According to the World Health Organization, it should be given timely, adequately, and appropriately. Inappropriate practices may result in malnutrition and cause various diseases. Objective of this study was to assess these complementary feeding practices among 6-24 months children. A community based cross sectional study was conducted in Anganwadi Centres under urban health centre of an urban slum of central India among these children. Most common food preferred while initiating complementary feeding was combination of rice and dal. Majority of the mothers had introduced it after six months. The prevalence of minimum dietary diversity, minimum feeding frequency and minimum acceptable diet were low in this study. There was a big knowledge and practice gap of duration of exclusive breast feeding and initiation and continuation of ideal complementary feeding.

Keywords: complementary feeding, 6-24 months children, urban slum, central India

1. Introduction

Complementary feeding means introducing other foods when breast milk alone is not enough to meet the nutritional requirements of the infants [1].

It is the transition from exclusive breastfeeding to family foods. Inappropriate timings of these complementary foods and an inadequate quantity or quality can lead to undernutrition or overnutrition in a child. Both these conditions during infancy increase the risk of non-communicable diseases late in life. According to WHO (World Health Organization) definition of optimal infant feeding practices is initiation of breastfeeding within half an hour of birth; exclusive breastfeeding for the first 6 months of life; introduction of complementary feeds from locally available sources which can be prepared at home which is nutritious and fulfilling at the same time as well as ensuring the continuity of breast feeding up to 2 years of age for infant's benefits [2]. Infant feeding practices, malnutrition and childhood mortalities are interlinked together. It has the same analogy as infection malnutrition cycle. Complementary feeding is the transition from exclusive breastfeeding to family diet which ranges from 6 - 24 months of age [3]. Malnutrition has caused millions of deaths among under 5 children which are often associated with inappropriate feeding practices [4]. There is a critical window of opportunity in the first 1000 days of life i.e. from woman's pregnancy to her child's second birthday. This period is crucial for addressing undernutrition and underlying issues of low birth weight, sub-optimum feeding and infections. After the age of two, this window closes and the opportunity gets lost. This 'Window of Opportunity' can be best utilized by practicing optimum Infant and Young Child Feeding Practices (IYCF) [5]. According to UNICEF report about NFHS-4 data 2016, under 5 mortality rank of India is 47, under 5 mortality rate is 53 and infant mortality rate (under 1 year of age) is 41 per 1000 births [6].

Government of India, WHO (World Health organization), UNICEF (United Nations Children's Fund), USAID (United States Agency for International Development) recommends early initiation of breastfeeding. Exclusive breastfeeding for first 6 months and nutritionally adequate and safe foods after 6 months up to 2 years of age and beyond [7]. This also aims to achieve sustainable development goal (SDG-2) which seeks to end hunger and end all forms of malnutrition [8]. Exclusive breast feeding should be promoted in our community as its beneficial for the growth and development of infants. Malnutrition has been responsible directly or indirectly for 60% of 10.9 million deaths annually [9]. 2/3rds are associated with inappropriate feeding practices which occur during infancy [10]. This study was undertaken with an objective to assess the complementary feeding practices and the various factors influencing them among mothers of 6-24 months children.

2. Materials and Methods

A descriptive cross sectional study was conducted among mothers of 6-24 months old children in urban slum area of Nagpur among the eight Anganwadi Centres under urban health training centre by convenience sampling with an objective to assess the complementary feeding practices in infants and young children less than 2 years of age. All mothers of 6-24 months children registered under ICDS were included in the study. Here the feeding practices refer to the expressed feeding practices adapted by the mother. After taking informed consent, data was collected by interviewing the mothers using predesigned and pretested questionnaire on sociodemographic characteristics and complementary feeding practices. To determine status of these practices, six out of eight core indicators were used. They are:

1. Early initiation of breastfeeding
2. Exclusive breastfeeding for first six months

3. Continued breastfeeding after six months up to two years of age.
4. Introduction of complementary foods (solid, semisolid, or soft foods)
5. Minimum dietary diversity
6. Minimum meal frequency
7. Minimum acceptable diet
8. Consumption of iron rich or iron fortified foods.

Indicators from II-VII were used in this study [11]. As per WHO recommendations, dietary information was collected about child’s diet by 24 hours recall method, which included the type of food items and number of items they had consumed [12]. Food items are categorized in seven types. These seven food groups are:

1. Grains, roots, tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry, liver, /organ meat)
5. Eggs
6. Vitamin A rich fruits & vegetables

7. Other fruits & vegetables [13]

Data was collected after taking permission from the institutional ethics committee. Informed consent from mothers was obtained after explaining the study procedure.

3. Results

Socio-demographic characteristics of the mothers of children age 6-24 months

In the present study, a total of 350 participants were interviewed. Table no. 1 shows the distribution of mothers of 6-24 months children according to the three variables namely literacy status, occupation, and socioeconomic status. As per the literacy status 10% mothers were illiterate, 74% were literate till SSC and 12% were literate till HSC & 4% were graduates. Majority of the mothers were housewives 88.85% (311) while only 11.14% were employed. The socio-economic status of these mothers was decided based on Modified B.G Prasad scale where 78.28% belonged to lower; lower middle, middle class and 38% belonged to upper middle and upper class.

Table 1: Distribution of mothers of children 6-24 months of age according to the socio-demographic variables.

Sociodemographic variables	Category	Number	Frequency
Education	Illiterate	35	10%
	Below 10 th	189	54%
	10 th pass	71	20.28%
	12 th Pass	42	12%
	Graduate or above	13	3.714%
Occupation	Employed	39	11.14%
	Unemployed	311	88.85%
Socioeconomic status	I, II, III	274	78.28%
	IV, V	38	10.85%

Distribution of the children age 6-24 months

Table no. 2 shows the distribution of the children aged 6-24 months according to the two variables i.e. gender and age. The children whose age was 6-12 months were 39.4%. 12-18 months were 34.3% and 18-24 months were 26.3%. As per gender of these participants, boys were 53.4% and girls 46.85%.

Out of 350 mothers, 69.07% mothers started complementary feeding at 6 months, 19.58% at 7months – 12 months and before 6 months 11.34%.

When these mothers were asked about their thoughts about colostrum feeding, (97 out of 350) 27.71% mothers said that its bad or stale milk and they didn’t feed it to their neonates because others (people around them) advised against it.

On observation of breastfeeding practices, it was evident that 78.16% mothers breastfed when the child cried, 17.72% mothers breastfed when their child was hungry and 4.11% breastfed when their breast was full.

Table 2: Distribution of children 6-24 months of age according to gender.

Variable	Category	Number	Frequency
Gender	Boys	186	53.14%
	Girls	164	46.85%
Age (months)	6-12 m	138	39.4%
	13-18m	120	34.3%
	19-24m	92	26.3%

Figure no.1 shows IYCF (Infant and young child feeding) indicators. IYCF is also known as complementary feeding. In the present study, the prevalence of minimal meal frequency was 38.6%, minimum dietary diversity was only 28.5% and minimum acceptable diet only 32.9%. Knowledge among the mothers regarding complementary feeding was low.

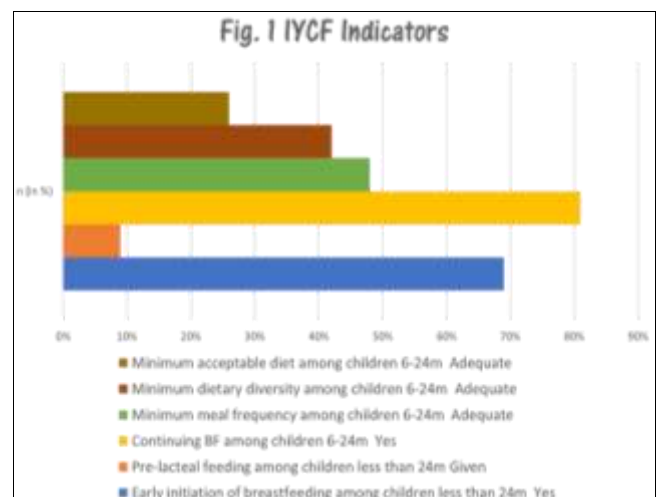


Fig 1: Shows distribution of IYCF indicators:

Association between complementary feeding and socio-demographic variables

Table no. 3 shows association between complementary feeding and socio demographic variables of mother's i.e. occupation and socio-economic status. Chi square test was applied to found out the association between two variables.

Table 3: Association between complementary feeding and socio-demographic variables.

Socio-demographic variables	Complementary feeding		Total	Chi square	P value
Occupation of the mother	Yes	No			
1. Employed	25 (64.1%)	14 (35.9%)	39 (11.14%)	1.005	0.998
2. Unemployed	199 (63.99%)	112 (36.10%)	311(88.85%)		
Socioeconomic status					
1. I, II, III	243 (88.69%)	31 (11.31%)	274 (78.28%)	13.25	<0.0001
2. IV, V	14 (36.84%)	24 (63.16%)	38 (10.85%)		

4. Discussion

In the present study, there were 134 (38.28%) women educated till secondary school, with only 35 (10%) illiterate. Majority of the women 311 (88.25%) were housewives and only 39 (11.14%) were employed. While in study done by Javalkar *et al* 5.1% of mothers were illiterate, Khan *et al* showed that 37% of the mothers were illiterate^[3, 4]. Whereas a study by Joshi *et al* showed that the majority of the children's mothers were working (70%); more than half were illiterate while one-fourth had completed secondary or higher education^[14]. Out of 350 mothers, 69.07% mothers started complementary feeding at 6 months, 19.58% at 7months – 12 months and before 6 months 11.34%.Whereas study conducted by Garg *et al* showed that 43% of the infants were given semi solids at 6 months followed by 40% who were given between 4-6 months due to the older belief that complimentary feeding should be started by 4 months. 11% were given before 4 months and 6% were given after 6 months^[15]. In the present study, complementary feeding indicators were low. Minimum dietary diversity (MDD), minimum meal frequency (MMF) and minimum acceptable diet (MAD) were 28.5%, 38.6% and 32.9% respectively. In a study by Jain *et al* it was observed that it was MDD-47.8%, MMF-67.6% and MAD- 32.8% respectively^[13]. Many mothers did not have knowledge that optimum complementary feeding was a mixed diet with cereals, pulses, vegetables, fruits, and non-vegetarian foods. In the present study, the most common initiatory complementary food was soft cooked dal and rice as mothers thought it is easy to swallow and digest by the baby. Whereas study by Kaur *et al* showed 21% it was dal ka pani (water of boiled pulses), in 19% cerelac, in 18% dalia (porridge) and in 12% khichdi (rice gruel) was used as first food^[6]. It was observed that the mothers preferred the foods depending upon the affordability and availability factors. Low amount of milk in the first two days made the mothers think that their milk was insufficient & prompted them to start with prelacteals and substitution milk. In the present study pre-lacteal feeds were given to about 30% children whereas in study done by Shukla *et al* it was 23.4%^[16].

5. Conclusions

Exclusive breastfeeding for first six months confers several benefits to the infant and the mother. More efforts are needed to encourage exclusive breastfeeding and to protect extended breastfeeding. The studied population was a small population who had rendered services of Anganwadi.

When association was seen between socio economic status and feeding, it was proved significant ($p=0.000001$) as mothers belonging to lower, lower middle and middle class initiated complementary feeding as compared to upper middle and upper class. It was found to be non-significant as housewives and the employed mothers.

Mothers should be counseled right from the beginning of the conception, supported throughout pregnancy, and followed for at least 6 months as it's the infant right to have a proper upbringing. Complementary feeding practices viz minimum dietary diversity, minimum acceptable diet and minimum meal frequency were low in the present study. This study would help educating the prospective mothers about optimal feeding practices for the development of the infant.

6. Acknowledgement

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7. References

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