

Short Research Article

Title- Complementary feeding practices amongst children aged 6-18 months in tribal parts of Maharashtra, India- requires to be complemented aptly

Abstract

Aim- The present study was carried out to document the complementary feeding practices in the view of understanding reasons of delayed or deficient practices in children aged six-18 months, from tribal regions of Maharashtra.

Study design: This was a descriptive, cross sectional study

Place and Duration of Study- This study was conducted during February 2015- October 2015 in selected blocks from three tribal districts of Maharashtra viz. Amravati, Gadchiroli and Nandurbar

Methodology- In each study village, five children in the age group of six to 18 months were selected using random sampling from anganwadi register and mothers of these children were interviewed. Total 75 mothers were interviewed. Data entry and statistical analysis were performed using the Microsoft Excel and SPSS. Percentages and cumulative percentages were applied to find the results.

Results:

Majority of children (65%) were introduced to top feeding around six-seven months, which is a recommended age for initiation of top feeding. While in one fifth of cases (20%) delayed top feeding was observed. Delayed commencement of top feeding was found to be mainly associated with mothers own beliefs, misconceptions and in some cases child's sickness, unwillingness of

23 child for eating, lack of knowledge with mothers regarding initiation of top feeding. Only 13.3%
 24 of children were fed minimum number of times as per WHO and UNICEF (2007) indicators.
 25 Fruits were totally missing in the diet. Instead, junk food was offered to more than half of the
 26 children while 14 children were given tea!

27 **Conclusion-** The overall picture indicates that although a majority of mothers were unaware
 28 regarding appropriate feeding practices for meeting the child's nutritional requirements. Top
 29 feeding practices are found to be deficient in terms of under feeding and lack of nutritionally
 30 balanced diet in the studied children.

31 **Keywords-**complementary feeding, child malnutrition, tribal areas, feeding practices

32 **Introduction-**

33 With growing age, a child's nutritional needs also increase. As breast milk is no longer enough to
 34 meet the nutritional needs of the infant, complementary foods are required to be added to the diet
 35 of the child. The time period in six to 24 months of age is a very vulnerable period in which
 36 malnutrition starts in many infants, contributing significantly to the high prevalence of
 37 malnutrition in children below five years of age. Growth faltering incipiently worsens from
 38 around six months of age and results in malnutrition in later months and years¹. The link between
 39 malnutrition and child feeding practices has been widely recognized. Late introduction of
 40 weaning food by Indian mothers is a well documented fact and is considered to be a major cause
 41 of malnutrition²⁻³.

42 Malnutrition and micronutrient deficiencies during weaning period are reported from various
 43 developing countries⁴⁻⁵ as well. A study by Chirmulay *et al.* (2002) showed that, there was a
 44 significant relation of nutritional status of preschool children to feeding practices. Exclusive

45 breast-feeding was beneficial only up to six months age. After this age, it lost its advantage⁵.
46 Children above one year age exclusively fed on breast had a high prevalence of malnutrition. The
47 World Health report 2005 has reported that under nutrition is an underlying cause of an
48 estimated 53 per cent of all under-five deaths⁶. The research evidence over the last few decades
49 has clearly identified causes of high child mortality and also the remedies, which are effective
50 and feasible for implementation at a large scale, in the community. Exclusive breastfeeding
51 stands out as a single most effective intervention for child survival⁷, while improving
52 complementary feeding is viewed as a major contributor to reduce anemia and stunting as well⁸.
53 Additional 6% child deaths can be prevented with appropriate complementary feeding⁹.
54 In this entire context, ensuring adequate and timely introduction of complementary feeding along
55 with continued breastfeeding could help prevent under-nutrition in children and also improve
56 child survival.

57 However, in India, breastfeeding in rural areas appears to be shaped by the beliefs of a
58 community, which are further influenced by social, cultural, and economic factors¹⁰.
59 Breastfeeding and weaning practices vary among different regions and communities. Data from
60 Rapid Survey of Children (RSOC,2014), reveals that introduction of complementary feeding
61 along with continued Breastfeeding in six to eight months age in rural India is almost half
62 (47.1%)¹¹.

63 Hence, continuous vigilance over infant feeding practices in the community is necessary for
64 timely interventions, to ensure optimal growth and development. The present study was carried
65 out to document the complementary feeding practices in the view of understanding reasons of
66 delayed or deficient practices in children aged six-18 months, from tribal regions of Maharashtra.

67 **Material and Methods**

68 This was a descriptive and cross sectional study conducted in a selected block from three tribal
69 districts of Maharashtra viz., Amravati, Gadchiroli and Nandurbar, covering 75 mothers having
70 children in the age group of six to 18 months.

71 Selection of districts and blocks was based on two criteria. Districts with highest percentage of
72 malnutrition in the state as per DLHS-3 and presence of civil society organizations involved in
73 the Nutrition Rights Coalition. Since year 2012, as part of 'Nutrition Rights Coalition', a group
74 of civil society organizations have been implementing the process of Community Based
75 Monitoring and Action (CBMA) related to ICDS selected rural areas from Amravati (two
76 blocks), Nandurbar, Gadchiroli, and Pune (one block each). In each block, five villages were
77 randomly selected out of larger sample of villages. Further in each study village, five children in
78 the age group of six to 18 months were selected using random sampling from anganwadi register
79 and mothers of these children were interviewed. Interview schedule was used to conduct
80 interviews of mothers. Dietary recall of child for one day was also taken, for understanding
81 current diet of the child as well as for cross checking information given by mothers regarding
82 variety and frequency of food given to children. Data was collected during February 2015-
83 March 2015. Data entry and statistical analysis were performed using the Microsoft Excel and
84 SPSS. Percentages and cumulative percentages were applied to find the results.

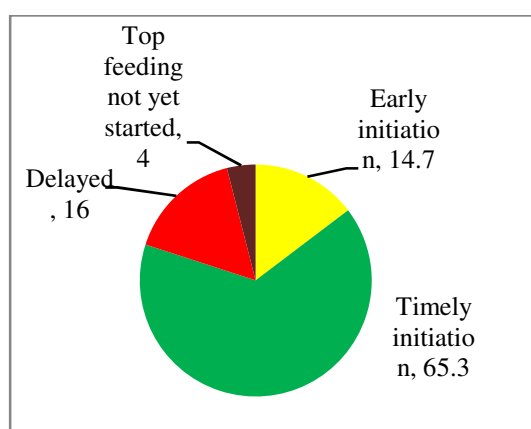
85 **Ethical consideration:** Informed consent was taken from each participant prior to conducting
86 the interview and the purpose of the study was explained to them.

87 **Results**

88 **Initiation of complementary feeding**

The age of introduction of top feeding (henceforth complementary feeding would be referred as top feeding) ranged between 3-7 months. In 15% **childrentop** feeding was initiated early, in 3-5 months. Majority of children (65%) were introduced to top feeding around 6-7 months, which is a recommended age for initiation of top feeding. While in one fifth of cases (20%) children, delayed top feeding was observed (figure I). Out of these, 16% children were provided top feeding in the 8-14 month age while in case of 4% children top feeding was not yet started. Even though delayed top feeding is observed in only one fifth of the sampled children, situation is quite alarming considering its implication on child growth.

Figure I: Distribution of age of top feeding (%)



Information regarding Initiation of top feeding

Most of the respondents rightly answered that top feeding should be initiated around sixth month. It was observed that considerable number of mothers (75%) received guidance about top feeding from Anganwadi worker while 20% mothers did not receive guidance from anybody.

Reasons of delayed top feeding

105 20% children, who had delayed top feeding were analysed in relation to socio economic
106 characteristics of their families as well as maternal characteristics which included mother's
107 education, occupation, knowledge regarding top feeding, and parity etc.

108 Out of those 20% (n=15), four mothers had never been to school and belonged to lower SES.
109 Ten out of 15 mothers received guidance from anganwadi worker regarding top feeding. Seven
110 were girls and eight were boys. About 14 mothers were working, mostly on their own farm, and
111 five had started working within one month of delivery. Most of the children were started feeding
112 after 10 months.

113 In majority of the cases, it was found that delayed commencement of top feeding was mainly
114 associated with mothers own beliefs, misconceptions and in some cases child's sickness,
115 unwillingness of child for eating, lack of knowledge with mothers regarding initiation of top
116 feeding. Some of the responses given by mothers were-

117
118 *"Child can eat only after one year. Now child is small and breastfeeding is sufficient for him (1*
119 *year child)..."*,

120 *"Taste is not developed in child in at 6months so we started it late by 9th month..."*,

121
122 *"We had fear of chocking food in child's throat as well had no information regarding what*
123 *should be given to child (9month child)..."* ,

124
125 *"Child spits out on eating food other that breast milk (13months)..."*, *"Child was underweight*
126 *since birth so we started late...."*,

127

128 “Child was not well; he had loose motions so we started late (8months)...”.

129
130 In few cases where caretaker is grandmother, her influence on feeding practice was also
131 observed to be a major reason for delayed top feeding.

132
133 **Food introduced at the time of starting top feeding in the children -**

134 In most of the children, top feeding was started with dal rice. *Soji*, milk as well as solid food such
135 as Poli, Bhakari were also used for initial feed. In many children junk food such as *biscuits*,
136 *Kurkure*, *chivda*, *bread*, *khari*, *toast*, *Chocolates*, etc comprised initial top feeding, which is
137 certainly inappropriate food for babies to start with. More than half of the children were given
138 biscuits to begin with top feeding.

139
140 **Current feeding pattern in the children –**

141 Food frequency was taken for understanding current dietary intake of children by taking 24 hours
142 recall. Type and frequency of food given to the child was cross tabulated with current age of
143 children in two groups, children in 6-12 months (41 children) and children in 13-18 months (34
144 children). Frequency of food in most of the children from both age groups was 2 to 3 times a
145 day. Only 13.3% of children were fed minimum number of times as per WHO and UNICEF
146 (2007) indicators¹². Further, 10 children in both age groups were given food only once in a day.
147 Most of the children were offered dal rice (on an average 63%) and about 42% of children were
148 also given *Poli/Bhakari*. It has been specifically observed that *dal* rice or *Poli bhaji*, which is
149 offered to the child, is not specially prepared for children in semi solid form.

Overall local vegetables, non vegetarian diet, even local produce such as *Ragi* or other nutrient rich grains (*Jowar*, *Varai*, etc) which are less expensive and easily available were not being offered to the children. Fruits were totally missing in the diet. Instead, junk food was offered to more than half of the children while 20% children were given tea! Positively, breast feeding was also found to be continued in almost all the children as yet.

Discussion

In this study, timely initiation of top feeding was observed in most of the children, while delayed top feeding was observed in only one fifth of the sampled children. Similar trend were reported by few other studies including study by Deshpande Jayant *et al.* (2010)¹³, in rural India. Although most of the children received top feeding fairly on a right time, overall top feeding practices were found to be deficient in terms of food frequency, type/choice of food and sometimes form of food (consistency) was found to be inadequate for growth. Though not reported by mothers, as observed by investigators, feeding food in an inappropriate form would be one of the reasons for delayed top feeding with experiences like child does not eat, choking of food in throat, vomiting etc. Ideally introduction of top feeding should be done with liquid or semi Solid food. However solid food such as *Poli*, *Bhakari* has been reported as an initial top feed. The similar observations were reported by Rahalkar A. *et al* (2014)¹⁴ in their rural study. In many families, food is not specially prepared for children; same food which is cooked for other adult family members is offered to child as well. This can be attributed to the fact that most of the respondents belonged to low socioeconomic class and lacked knowledge regarding feeding practices. Junk food was also fed often to the children, which is definitely a matter of concern. Total 14 children were given tea. Chaudhary *et al* (2007)¹⁵ in their study in Pakistan, noted the similar observation. Tea is definitely not recommended food for children in

this age. As observed, information regarding top feeding has been passed on by AWW very briefly to mothers at the time of vaccination or when mothers visit Anganwadi for collecting THR. Another study (February 2015) conducted by Nutrition Rights Coalition in the same tribal districts of Maharashtra, reported that out of 30 only 3 respondents mentioned about home visits by AWW¹⁶. Ten out of 15 mothers who delayed top feeding in child, had also received some level of information from AWW. Proper guidance and follow up by AWW might have helped ensuring timely top feeding in these children. .

Conclusion and recommendation

The overall picture indicates that although a majority of mothers are aware of the right timing for introducing top feeding and they started top feeding after 6 months, they are unaware regarding appropriate feeding practices for meeting the child's nutritional requirements. Top feeding practices are found to be deficient for growth in terms of under feeding and lack of nutritionally balanced diet in the studied children. Based on the study findings, we recommend that:

- **Focused programme for improving overall complementary feeding practices** -Along with public awareness programmes for breast feeding practices, it is essential to introduce a focused programme for improving overall top feeding practices as well. This health message should be widely given using various modes of reaching people, including electronic and print media.
- **Home visits by Anganwadi worker for individualistic counseling and food demonstrations to mothers-** With proper capacity building, AWWs can play a significant role in providing guidance as well as in conducting such demonstrations for

mothers and more importantly for regular follow up of mothers regarding top feeding, as one of her crucial tasks, as per ICDS guidelines. AWW must make home visits at least 2 to 3 times, since the child is around 6 months of age, till such a time that the child starts eating properly.

- **Desirability of a second Anganwadi worker**-Since individualized counseling is important, keeping in mind various existing responsibilities of AWW, it would be desirable to have second AWW to give individualized counseling to each mother and to follow up regarding nutritional status of the child.

- **Guidance regarding appropriate feeding practices and use of local resources**- Mothers should be guided to make food soft, palatable and nutritionally balanced. They can also be suggested the use of cheap and easily available local resources, as food for the child.

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