**Original article**

# STUDY ON FEEDING PRACTICES AMONG CHILDREN 6 MONTHS TO 2 YEARS AND ITS EFFECT ON THEIR NUTRITIONAL STATUS IN URBAN SLUMS

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## ABSTRACT

**Background:** The sheer rise in malnutrition in children during the first two years of life is indicative of poor feeding practices.

**Objectives:** To study the Complementary Feeding (CF) practices in children of 6 months to 2 years of age and its effect on their nutritional status.

**Method:** A sample size of 561 children between 6 months to 2 years was taken by cluster sampling method from urban slums.

**Results:** Only 27% of children had started receiving CF at 6 months of age. Majority (82.5%) of children had feeding problem. Almost all (98.7%) children with moderate to severe wasting (WLZ) had feeding problem.

**Conclusions:** Feeding problem was seen which was due to late initiation, incorrect quantity and type of CF given to the children. Malnutrition was seen more in children with feeding problem.

**Key Words** –Complementary Feeding, WHO growth standards, nutritional status, Urban slums

## INTRODUCTION

The nutritional well-being of a population is both an outcome and an indicator of national development. The sheer rise in malnutrition in children during the first two years of life is indicative of poor infant feeding practices. The nutritional status of children under-5 years is the most sensitive indicator of an area's development. It is due to interplay of female illiteracy, ignorance about nutritional needs of children. Appropriate feeding is crucial for the healthy growth and development of an infant. [1] Malnutrition has been responsible, directly or indirectly, for 60% of all deaths among children under five years annually. Over 2/3 of these deaths are associated with inappropriate feeding practices. [2] In IMNCI, more emphasis has been given on the child feeding practices in order to reduce the nutritional problems. [3] Under-

nutrition continues to be a primary cause of ill-health and premature mortality among children in developing countries. [4] CF begins either too early or too late with foods which are often nutritionally inadequate and unsafe. Poor feeding practices during this period result in malnutrition and contribute to impaired cognitive and social development. In spite of the accessible health facilities, the health indicators of urban areas are not better than rural areas.

## METHODS

The present cross sectional study was conducted in urban slums during February to July 2008. Considering proportion of initiation of CF at 6 months according to NFHS-2 as 33.5% a simple random sample size arrived to 561. [5] A two stage cluster sampling methodology was adopted. Out of 30 clusters, from each cluster 18 children between 6 months to 2 years of age were taken. In first stage, a listing of all 410 Slums with its population was done. In second stage, households of these selected clusters were surveyed for children between 6 months to 2 years of age. If any respondent found, form were filled with informed consent. The proforma was predesigned and pre-tested. Data collection was carried out by same researcher throughout the study. Weight of the child was measured by digital weighing scale and height of the child was measured by measuring tape. Digital weighing scale was standardised before starting the study. Same weighing scale was used throughout the study. The terms and definitions for Infant and Young Child Feeding Practices were according to National Guidelines on Infant and Young Child Feeding, 2nd edition (2006) [1]and IMNCI [3] . The data was entered and analyzed using Epi Info (version 6.04d) software. [6]

## RESULTS

In this study, a total of 561 children aged 6 months to 2 years were studied. The population comprised of 46.6% girls and 53.4% boys. Out of total, 82.4% were Hindu and 45% of mothers had primary education. When categorized by Modified Prasad Socio economic classification 55.6% belonged to class V. Among the study population, 98.9% were on Complementary feeding (CF); out of which 75.3% were continuing with breastfeeding. There were 29.5% and 24.6% of the male and female children respectively, had started receiving CF at 6 months. While 60.5% started receiving after 6 months. There was no significant association between education of mother and time of initiation of CF. AWWs were responsible for initiation of CF between 6 to 8 months in 36.4% followed by doctors (29.9%). Only 9.9% of mothers were aware that breast-feeding is not sufficient after 6 months.

**Table 1: Distribution of Children Aged 6 Months Up to 2 Year with Respect to Feeding Problems (n=561)**

| Variables | Feeding problems | | Chi Square value |
|---|---|---|---|
| | Present(463) | Absent (98) | |
| **Age group (months)** | | | |
| 6-8 (n=49) | 34 (69.4%) | 15 (30.6%) | $X^2$=11.16, |
| 9-11 (n=82) | 65 (79.3%) | 17 (20.7%) | p=0.011 |
| 12-17(n=163) | 131 (80.4%) | 32 (19.6%) | |
| 18-23(n=267) | 233 (87.3%) | 34 (12.7%) | |
| **Gender** | | | |
| Male (n=300) | 237 (79%) | 63 (21%) | $X^2$=5.06, |
| Female (n=261) | 226 (86.6%) | 35 (13.4%) | p=0.024 |

**Table 2: Distribution of Children Aged 6 Months Up to 2 Years with Respect to Nutritional Status (N=561)**

| Variable | Feeding problem | | Chi square value |
|---|---|---|---|
| | Present(463) | Absent(98) | |
| **WAZ** | | | |
| <-2SD (n=204) | 196 | 8 | $X^2$=39.34, |
| ≥ -2SD (n=357) | 267 | 90 | p=0.000 |
| **WLZ** | | | |
| <-2SD (n=150) | 148 | 2 | $X^2$=35.46, |
| ≥ -2SD (n=411) | 315 | 96 | p= 0.000 |
| **LAZ** | | | |
| <-2SD (n=247) | 213 | 34 | $X^2$=4.20, |
| ≥ -2SD (n=314) | 250 | 64 | p= 0.040 |

WAZ = Weight for Age Z score; WLZ = Weight for Length Z score; LAZ = Length for Age score

There were 64.7% of children who were given appropriate number of food groups. Out of total, 96% of children were getting food prepared from cereals followed by pulses (76.8%), fruits- vegetables (79%) and Milk and milk products (67.7%) in their CF. Children who were deprived of fats in their diet were 48.5% of total. Only 70.2% of male and 58.5% of female were receiving appropriate food groups and the association was statistically significant. Hand washing practice before eating was followed by 66.1% of children.

Only 25% of children were receiving adequate frequency of CF and its association with gender was highly statistically significant. The way of feeding was found to be correct in 65.1% and

55.8% in male and female children respectively. Almost three fifth (61.6%) of literate mothers were feeding their child in the correct way. There was significant association between age and feeding problem (Table 1). Majority (86.6%) of female children had feeding problem. A minority (17.5%) of children showed correct feeding practices. Feeding problems were found to be high, 79.3% and 83.1%, among both the illiterate and literate mothers respectively. According to WHO growth standards, 44% of children were stunted, 36.4% were underweight and 26.7% had wasting. The association between feeding problem and malnutrition was highly significant (Table 2).

## DISCUSSION

It is good that majority of the children aged 6 months to 2 years had started CF. In a study by Aggarwal A, 86% of the children (6 to 24months) had started CF. [7] According to National guidelines on IYCF, children should be breastfed along with CF at least till 2 years of age. Here only three-forth were benefited which needs to be raised. Others were disadvantaged due to parents thinking that it was not sufficient and the child was too grown up to continue BF. A child should start getting CF by 6 months of age, but many were deprived. Only one-third of male and quarter female children received CF at the right time which is more as compared to the finding by Aggarwal A, where it was 17.5%. [7] 58.3% had received CF between 6 to 8 months of age. While in NFHS-3, CF was started in 55% at 6 to 8 months of age, which is almost similar .[8]

**Simondon** observed that introduction of complementary feeding by the age of 4 to 5 months led to slower growth. [9] Initiation of CF at the right time is a weak point in infant and young child feeding practices which is the main cause of malnutrition. In a study by Chatterjee S in slums, two third of the children had started CF after the age of 6 months. [10] AWWs and doctors were responsible for initiation of CF between 6 to 8 months. AWWs are the first contacts between the health sector and community, which stands true here, who can spread the message of child health in community.

Initiation of complementary feeding at the correct age is a most important reason in IYCF practices that is the main cause of malnutrition. In a study by **Bavdekar** in slums, almost half of the children, age between 6 to 10 months, were being given complementary feeding. [11] Wright et al mentioned in their longitudinal study that that social factors had influence on time of introduction of complementary feeding but earlier introduction of complementary feeding was associated with an increased rate of minor morbidity. [12]

Majority (64.7%) of children were given appropriate number of food groups which is much better than as per NFHS-3 where 40.6% children were benefited. [8] A child should get all the nutrients from the food items from the very beginning of CF. Majority of children were getting food prepared from cereals followed by pulses, fruits and vegetables. As cereal is a staple diet here, it was the complementary food for majority children. Many children were deprived of fats in their diet which increase the calorie value and similar result was found in NFHS-3. Male children were getting more appropriate number of food groups in their CF as compared to female children, highlighting the gender difference. But it was same in both groups as per NFHS-3. [8] Adequacy of food groups was seen more in high birth order child, which might be owing to the experience of the mother. Two-third of the children followed hand washing practices before eating which needs to be raised.

Half of children were receiving minimum number of required feedings. While in urban areas of India, 43.4% were receiving feedings in required frequency. [8] According to NFHS-3 (41%) same proportion of male and female children were getting adequate frequency of CF while gender difference was found in this study. [8] Not only the quality but quantity also has affect on nutritional status which is to be impregnated in community. Majority of literate mothers were feeding their child in correct way. The reason could be more knowledge regarding the correct way of feeding. Comparatively, younger mothers fed their children in the correct way, taking into account that it was the first motherhood experience for most of them.

Feeding problems was more (86.5%) in 18 to 23 months of children. This is more as compared to NFHS-3 in which feeding problem was 71.8%. Overall 17.5% of children had no feeding problem i.e. they were following all the 3 IYCF practices. There was significant association between age and feeding problem. Feeding problem was more in female children than in male children. According to NFHS-3, 79.3% and 79.2% of male and female children had feeding problems. [8] While in this study, feeding problem was more

in female (86.6%) than in male (79%) children which shows gender bias which needs to be uprooted from community. This difference might be due to more concern for male child as compared to female child in the community. There was no effect of mother's literacy status on the feeding practices. Literacy alone can not help to solve this problem. It should be mingled with the awareness regarding feeding practice. [1] In NFHS-3, according to the WHO growth standards 40.6% children had H/A less than 2 SD, 25.9% had W/H less than 2 SD and 39.4% had W/A less than 2 SD which is less than this study. [8] Majority of children with feeding problem had malnutrition as compared with children with correct feeding practices. One study conducted by Parikh et al in tribal Gujarat found that 65% AWWs recommended food with thick consistency while 47% recommended liquid diets for children. So the AWWs were aware of key IYCF practices, however the AWWs perceptions and knowledge with regard to the rationale applicable to the appropriate recommended CF practices being promoted was rather poor.[13]

## CONCLUSION AND RECOMMENDATION

This study revealed that though parents were literate, feeding problem was seen due to late initiation, incorrect quantity and type of foods given to children. Malnutrition was more in children with feeding problem. Literacy alone can not help to solve this problem. It should be mingled with the awareness regarding feeding practice. It is necessary to impregnate in the minds of the people that not only quality but quantity and the way of feeding plays a great role in growth of a child.

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