

NUTRITIONAL STATUS OF CHILDREN AND ITS CORRELATION WITH INFANT FEEDING PRACTICES AT ONE YEAR OF AGE

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Abstract

Background: Children are our future and most important resources. After birth, the health of the baby depends on the nurturing practices adopted by the families. Children need special care to survive and thrive. Today's children are tomorrow's citizens. Healthy children make a healthy nation, hence feeding them right from birth, especially the first year of life is important.

Objectives: To assess nutritional status at 13 months of age. To find out association between infant feeding practices and nutritional status among these children. **Materials and Methods:** This chapter describes the study design used, sample and sampling procedures, data collection method, data analysis, and statistical analysis. Study Design: Cross-Sectional study. Study Period: 02-Sep-2022 to 01-Jan-2023. Study site: Outpatient, Department of Paediatrics, Maheshwara Medical College & Hospital, Hyderabad. Inclusion criteria: Mothers/caregivers and their children aged 13-months old attending paediatric outpatient (OP) department. Exclusion criteria: Children born-low birthweight/preterm, children with congenital anomalies. Sample size calculation: 156. **Results:** The total number of children with the age of 13 months included in the study were 156. Among study subjects 53.2% were female and 46.8% were males. It was observed that majority were literates (80%) and remaining (20%) were illiterates. Among them the mothers who completed the following education: primary schooling (35%), secondary schooling (22%), Pre-University Course (20%), and graduates (3%). **Conclusion:** Adequate food frequency will provide the best nutrition in infancy. Our study concludes that bottle feeding is a risk factor for undernourishment. There is a need to focus more on educating illiterate mothers regarding breastfeeding practices, infant feeding practices, and promote programs that support and encourage breastfeeding, appropriate complimentary feeding at primary level focusing more on illiterate, working women, and those from lower socio-economic status.

INTRODUCTION

Children are our future and most important resources. After birth, the health of the baby depends on the nurturing practices adopted by the families. Children need special care to survive and thrive. Today's children are tomorrow's citizens. Healthy children make a healthy nation, hence feeding them right from birth, especially the first year of life is important.^[1] Malnutrition is estimated to be associated with 2.7 million child deaths annually, or 45% of all child deaths. The under-five population of India stands was

164.5 million.^[2] However, despite all the advances and vast improvements in the country's economy, India figures in the list of countries that have made less progress towards meeting the Millennium Development Goals.^[3] It has enormous numbers of under-five children stunted, accounting for 38% of the global burden. India has the highest numbers of children with moderate and severe wasting. Breastfeeding is so essential that it could save the lives of over 8.2 lakh children under the age of 5 years every year.^[4] The fourth National and Family Health Survey (NFHS) indicates that children breastfed within 1 hour of birth were 41.6%, exclusively

breastfed for 6 months, and 54.9%. Children who received semisolid/solid appropriately were 42.7 %, the minimum acceptable diet was 8.7% in breastfed children, and 14.3% in non-breastfed children. Children with minimum acceptable diet were 9.6%. NFHS-4 indicates children who were stunted (38.4%), underweight (35.8%), wasted (21%), severely wasted (7.5%).^[5] In Andhra Pradesh, according to NFHS-4 data, children who were breastfed within 1 hour of birth were 38.7%, exclusively breastfed for six months were 71.1%. Children who received semisolid, solid appropriately (50.6 %), minimum acceptable diet (6.3%) in breastfed children, and non-breastfed children (11%). Children with the minimum acceptable diet were 7.1%. NFHS-4 indicates 32.5% of children were stunted, 33.1% were underweight, 17.8% were wasted, 4.4% were severely wasted.^[6] An appropriate diet is critical in children's growth and development, especially in the first two years of life. World Health Organization (WHO) recommends exclusive breastfeeding (BF) for the first six months of age, including complementary feeds at six months with continued BF till two years.^[7] Improper nutrition can also lead to childhood obesity, increasing public health problem in many countries. Several factors contribute to malnutrition. The main contributing factors for under-five stunting are sex of the child, child age, diarrhea episode, deprivation of colostrum, duration of breastfeeding, pre-lacteal feeds, type of food, age of introduction of complementary feeding, and method of feeding.^[8] There is good evidence that human milk feeding decreases the range of infectious diseases, including bacterial meningitis, bacteremia diarrhea, respiratory tract infections. Children on breast milk will have fewer chances of otitis media, urinary tract infection, and late-onset sepsis in preterm infants.^[9]

World Health Organization (WHO), American Academy of Pediatrics (AAP) recommends every infant should be breastfed without any supplemental foods or liquids for the first six months of age (also known as exclusive breastfeeding). These recommendations for exclusive breastfeeding for the first six months are based on scientific evidence of the benefits for infant survival, growth, and development. Infant and young child feeding (IYCF) practices recommend exclusive breastfeeding up to six months; timely initiation of feeding solid, semisolid foods from six months onwards. It also recommends providing small amounts, increasing the number of foods and frequency of feeding as the child gets older while maintaining breastfeeding as demanded by the child.

After six months, the mother's milk alone is not sufficient for the growing child, and CF should be started, timely and inadequate with good quality. The frequency, quality, and quantity of top feeds given during the weaning period to children are important factors in malnutrition's pathogenesis. Inappropriate feeding practice during this period is found to be the primary cause of malnutrition. It is essential to

initiate complementary feeding timely. The early introduction of complementary feeds is associated with increased morbidity due to diarrheal diseases and malnutrition in inadequate food or water hygiene areas. On the other hand, the too-long delay in introducing appropriate complementary foods may lead to nutritional deficiencies of iron, zinc, calcium, and sometimes vitamin A and riboflavin. W.H.O has recommended further research in priority areas to broaden the range of effective interventions and programmatic approaches to improving complementary feeding.^[10] At the national level, it is recommended to develop locally appropriate feeding recommendations and programmatic guidelines for their implementation, taking into account the need of diverse communities and the range of available opportunities for improving infant and young child feeding and nutrition. Hence the present study was undertaken to know infant feeding practices of infancy and its relation to the nutritional status in rural tertiary care hospitals at, Maheshwara Medical College & Hospital, Patancheru, Hyderabad..

MATERIALS AND METHODS

Study Design: Cross-Sectional study. **Study Period:** Sept 2nd, 2022, to 1st January 2023. **Study Area:** Outpatient Department, Department of Paediatrics, Maheshwara Medical College & Hospital, Patancheru, Hyderabad.

Inclusion criteria: Mothers/caregivers and their children aged 13 months old attending paediatric outpatient department

Exclusion criteria: Children born -low birthweight/preterm, Children with congenital anomalies, Children with chronic disease and Children with neurological deficit

Sample size calculation: 156

Sampling technique: Purposive sampling

Data Collection Tools

A self-prepared proforma containing a set of questionnaires for an interview with the child's parents. The proforma was self-prepared with reference to W.H.O- Indicators for assessing infant and young child feeding practices. The questionnaire was developed in English and Telugu. It contained the following sections: socio- demographic and socio-economic status; Infant feeding practices; and anthropometry. (Annexure)

The socio-demographic and socio-economic status section

This section includes questions regarding the gender of the child, the relationship of primary caregiver, the marital status, birth interval, order of birth, and the level of education of mother, father. The household overcrowding, drinking water source details were obtained.

Infant and Young Child Feeding section

IYCF practices were assessed using a set of questions that determined the fluids and the semi-solid, solid, and soft foods consumed by the index child (whether

at or outside the home), based on 24 hours recall. The liquid foods assessed included: breast milk, water; infant formula; other types of milk; juices; soup, fermented milk, thin porridge, and tea/coffee. An additional question was related to the frequency of liquids based on milk, such as infant formula. The solid, semi-solid, soft foods assessed were: grains, roots, tubers; vegetables; fruits; meat and meat products, eggs; legumes and nuts; milk products; oil and fats; sugary foods and condiments. The number of times that the index child had eaten the solid, semi-solid, or soft foods during the preceding 24 hours was also assessed.

Anthropometry section

The weight, length, head circumference, mid-upper arm circumference measurements of the child taken were recorded. 1. Digital Weighing machine (calibrated to zero error) :2. Measuring Tape for measurement of Mid-arm circumference and head circumference.3. Infantometer for measurement of length

The data collection process began after the mother/primary caregiver in the sampled household had been provided with information regarding the rationale of the study and after they had given their informed consent through signing or placing their thumbprint on the consent form. The information leaflet and consent form were prepared in English and Telugu language. The information leaflet contained information about the confidentiality of the information provided, the study's need, the risks and benefits related with participating in the study. The respondent was given the participant information leaflet for future reference. Two observers took anthropometric measurements with collaborative efforts and the mother/primary caregiver in each case. The latter was asked to participate in anthropometric measurements to ensure that the child concerned remained calm.

The nude child's weight was measured using a digital weight scale that was marked out in kilograms and weighed to an accuracy of 0.1 kg. After the scale was calibrated to zero, the mother/primary caregiver was asked to remove the child's clothes and shoes and any jewelry, to ensure that accurate weights were taken. The child was then placed gently onto the weighing machine. One enumerator read the weight on the scale, while the other recorded the data on the questionnaire. Hence, the measurements were taken using combined effort.

The infant's length measurements were taken using infantometer measurements were taken to the nearest 0.1 cm. The mother was first asked to remove the child's shoes and any hair ornaments/objects. The child was then placed gently on the board on his back, with the head against the board's vertical base and with the feet flat against the foot piece. The mother/primary caregiver was then asked to support the child's head, while the other enumerator supported the child's legs and read out the measurements. After confirming the measurements, it was recorded in the proforma.

RESULTS

The total number of children with the age of 13 months included in the study were 156. Among study subjects 53.2% were female and 46.8 % were males.

Table 1: Gender Distribution of study subjects

Gender	No. of subjects	Percentage
Male	73	46.8%
Female	83	53.2%
Total	156	100%

It was found that 20 % were illiterates, 80% were literates, among them 35 % of mothers completed primary schooling, 22 % were completed secondary schooling, 20% completed PUC, and 3 % were graduates.

Table 2: Distribution of study subjects according to Education of mother

Education of mother	No. of subjects	Percentage
Illiterate	32	20.5%
Literate	124	79.5%
Total	156	100%

Out of 156 mothers 30 % were employed, 70 % were non-working women.

Table 3: Distribution of study subjects according to Occupation of Mother

Occupation of Mother	No. of subjects	Percentage
Housewife	110	70.5%
Employed	46	29.5%
Total	156	100%

It was found that 10.3% were illiterates, 89.7% were literates, among them 20% of fathers completed primary schooling, 25 % were completed secondary schooling, 37% completed PUC and 7.7% were graduates.

Table 4: Distribution of study subjects according to Education of Father

Education of Father	No. of subjects	Percentage
Illiterate	16	10.3%
Literate	140	89.7%
Total	156	100%

Out of 156, approximately 2 % fathers were unemployed, where 98 % employed.

Table 5: Distribution of study subjects according to Occupation of Father

Occupation of Father	No. of subjects	Percentage
Unemployed	3	1.92%
Employed	153	98%
Total	156	100%

It was observed that 36% were belongs to middle class, 64% were belongs to lower class. No one belongs to upper class.

Table 6: Distribution of study subjects according to Socio-Economic status

Socio Economic status	No. of subjects	Percentage
Middle class	56	36%
Lower class	100	64%
Total	156	100%

It was observed that 28 % of study subjects were found underweight.

Table 7: Frequency and percentage Distribution of study subjects according to Weight

Weight	No. of subjects	Percentage
Normal	113	72.4%
Underweight	43	27.6%
Total	156	100%

This table reveals that among 156 members 18% were stunted.

Table 8: Distribution of study subjects according to length

Length	No. of subjects	Percentage
Normal	128	82%
Stunted	28	18%
Total	156	100%

In this study approximately 20% were found wasted, where 80% had normal weight for length.

Table 9: Distribution of study subjects according to Weight for length

Weight for length	No. of subjects	Percentage
Normal	125	80.1%
Wasted	31	19.9%
Total	156	100%

It was found that 80.1% study subjects were had normal anthropometric parameters, 16.7 % were had moderate acute malnutrition, 3.2 % were had severe acute malnutrition.

Table 10: Distribution of study subjects according to Nutritional status

Nutritional status	No. of subjects	Percentage
Normal	125	80.1%
Moderate Acute Malnutrition	26	16.7%
Severe Acute Malnutrition	5	3.2%

This study observed that 54% children were had birth weight between 2.5kg to 2.75kg, 36% children were between 2.76 to 3 kg, 9 % were between 3.1kg to 3.5kg, 0.64 % children were more than 3.5 kg birth weight, respectively.

Table 11: Distribution of study subjects according to Birth weight

Birth weight	No. of subjects	Percentage
2.5kg to 2.75kg	85	54%
2.76kg to 3kg	56	36%
3.1kg to 3.5kg	14	9%
>3.5kg	1	0.64%
Total	156	100%

Out of 156 mothers 39 % were initiated breastfeeding less than 1 hour, 52 % between 1 hour to 24 hours, 9% were more than 24 hours.

Table 12: Distribution of study subjects according to Early initiation of breastfeeding

Early initiation of breast-Feeding	No. of subjects	Percentage
Less than 1 hour	61	39.1%
1 hour to 24 hours	81	52%
>24hours	14	8.9%
Total	156	100%

This study found that 94% were children were breastfed at least 1 time, whereas 6% were not breastfed.

Table 13: Distribution of study subjects according to Child ever breastfed

Child ever breastfed	No. of subjects	Percentage
Yes	147	94%
No	9	6%
Total	156	100%

Out of 156, 44% children were exclusively breastfed for 6 months, whereas 56 % were not exclusively breast fed for 6 months.

Table 14: Distribution of study subjects according to Exclusive breastfeeding under 6 months

Exclusive breastfeeding under 6 months	No. of subjects	Percentage
Yes	68	44%
No	88	56%
Total	156	100%

This study found that 92% were consuming grains, tubers, roots; 66% were consuming legumes, nuts; 69% were taking dairy products, 17 % were consuming flesh foods, 28% were consuming eggs, 53 % were consuming vit-A rich fruits and vegetables, 39% consuming other fruits and vegetables.

Out of 156 children 37% were found to have minimum diversity score means consuming four or more than four food groups.

Table 15: Distribution of study subjects according to Minimum dietary diversity

Minimum dietary diversity	Percentage
1.Grains, tubers, roots	92%
2.Legumes, nuts	66%
3.Dairy products	69.2%
4.Flesh foods	16.6%
5.Eggs	28%
6.Vit-A rich fruits, vegetables	53%
7.Other fruits& vegetables	38.5%

Out of 156 mothers 14.1 % had age-appropriate feeding, where 85.9% were not had age-appropriate feeding.

Table 16: Distribution of study subjects according to Age-appropriate feeding

Age-appropriate feeding	No. of subjects	Percentage
Yes	22	14.1%
No	134	85.9%
Total	156	100%

Out of 156 mothers 41% children had bottle feeding, where 59 % were not used bottle for feeding.

Table 17: Distribution of study subjects according to Bottle feeding

Bottle feeding	No. of subjects	Percentage
Yes	64	41.1%
No	92	58.9%
Total	156	100%

DISCUSSION

This study was conducted at the Maheshwara medical college & hospital, Hyderabad. A total of 156 mothers of children aged 13 months were questioned about infant feeding practices, and anthropometric data was recorded. The objective of the study was the nutritional assessment of children and its correlation with infant feeding practices. In the present study, among 156 children, males were 73(46.8%), females were 83 (53.2%). In all other studies male, females are almost equally distributed. S J Gandhi et al. study male was more prone for stunting. Kumar d et al.; Chaudhary et al.'s studies suggest that male children were inclined to malnutrition. The present study's mother's literacy was 79.5% in the present study, where the mother's illiteracy was 20.5%. In Chaudhary et al.; Aparajitha et al.; Rao Swathiet al.^[11] studies, children of illiterate mothers were associated with malnutrition. This study's father's literacy was 10.3% in the present study, where the father's illiteracy was 89.7%. In the present study, 110 (70.5%) were housewives, 46(29.5%) were employed. In the present study, 56(36%) belong to middle-class families, 100(64%) belong to lower class families according to modified Kuppaswamy classification. Chaudary et al.; Rao Swathi et al. studies suggest that lower socioeconomic status is associated with children's malnutrition. In this study, 77 (49.5%) children were born by 1st birth order, 65(41.6%) children were born by second birth order, 14 (8.9%) were delivered by third or more birth order. S J Gandhi et al. suggestive of higher birth order related to childhood malnutrition. In the present study, birth weight was almost (90%) between 2.5 to 3kgs. In this study, low birth weight babies were excluded. In the present study, children with early initiation of breastfeeding within 1 hour were 61 children (39.1%). Other studies S J Gandhi et al.⁴⁶ showed 58.4% of children-initiated breast feeding within one hour. Aparajitha et al. study showed 32.4% of children-initiated breast-feeding within one hour, and 68.6% had late breastfeeding initiation. Meshram et al.⁵³ showed pre-lacteal feeds given in

44.7% of children; 22% of children-initiated breastfeeding within one hour. Bagul et al.⁵⁵ showed 32.5% of children-initiated breastfeeding within one hour. Asif khan et al. showed 28% of children-initiated breastfeeding within one hour. In this study, children with exclusive breastfeeding were 68 (44%). Fakedu et al. study showed children not exclusively breastfed were associated with wasting, stunting. S J Gandhi et al. led only 36.2% of children were breastfed solely. Only 41% of children were on exclusive breastfeeding in Meshram et al.⁵³ study. Bagul et al.⁵⁵ suggestive only 36.8% of children were exclusively breastfed. Aparajitha et al.⁵¹ indicated only 66.7% children were exclusively breastfed, which is more than our study Kanaska et al.⁵⁶ suggestive only 30% children were exclusively breastfed. Asif khan et al. suggestive only 35% children were breastfed solely, which is less than our study.

According to W.H.O. health statistics 2010 for India; breastfeeding indicators were early initiation of breastfeeding was 22%, Exclusive breastfeeding under six months was 48%, Continued breastfeeding at 1 year 89%. Complimentary feeding (CF) indicators like Introduction of solid, semisolid, or soft foods- 55%, Minimum dietary diversity was 12%. The Minimum meal frequency was 44%, Minimum acceptable diet was 7%. Child ever breastfed was 97%, Age-appropriate breastfeeding was 65%. Predominant breastfeeding under six months was 44%, Bottle feeding was 14%. Among 44% under-five were underweight, 48% were stunted, 2% were overweight.^[12]

As per N.F.H.S.-4, 4in Andhra Pradesh Breastfed within one hour of birth were 40%, Children under age six months exclusively breastfed 70.2%, appropriate introduction of solid, semi- solid was 56.1%, receiving an adequate diet was 6.5% in breastfed children, 11.9% in non-breastfed children. Among under-five - 31.9% were underweight, 31.4% were stunted, 17.2% were severely wasted and 4.55 were severely wasted.

In this study, children consumed four different food groups or more than four, i.e., to minimum dietary diversity is 37.2%. The children took grains, tubers, roots as a major food group of 92%; the lesser intake food group was flesh foods. The reason behind this is the age factor because the present study includes only 13 months children. Fakedu et al. study suggestive that 45 % of children had minimum dietary diversity and were associated with stunting. Chaudary et al. study showed that 15.7% of children had minimum dietary diversity, which is less than our study. Aparajitha et al. study had 46% of minimum dietary diversity.

In this study, children with minimum meal frequency were 76(48%). Chaudary et al.^[13] study suggestive of 64.3% were had minimum meal frequency. A minimum of 2 milk feedings was selected based on the following: Average energy intake from breast milk in developing countries is approximately 350 kcal/day between 12 and 23 months.

For non-breastfed children, the dietary analysis results indicated that three milk feedings per day would generally allow for an average intake of milk similar to this range (300–400 kcal from milk). In Aparajitha et al. study, minimum meal frequency associated with wasting, underweight, stunted.

In this study, children with minimum acceptable diet were only 28.8%, wherein Andhra Pradesh, according to NFHS -4,4 only 9 % of children had a minimum adequate diet.

In this study, 35.8% of children were introduced to solid, semi-solid foods at appropriate age; 56.4% of children were introduced to solid, semi-solid foods as early.7.6% of children were lately introduced to solid, semi-solid foods. Olorunfemi et al. study suggestive of early initiation of breastfeeding is 19.3%. These children associated with underweight, stunted. Fekaduet al.^[13] 44study showed the appropriate introduction of solids. Semi-solids were associated with decreased stunting. Only 77.5% of children were stated weaning in the proper time in a survey of Rao Swathi et al. Only 58% where children were introduced weaning timely in Meshram et al. In the study of Asif khan et al. 5735% of children were started weaning early. Razia et al. study showed 68% were started weaning timely, 16% were started lately. In the present study, 28.8% of children have consumed an iron-rich diet, 41.1% children were had bottle feeding. Fekadu et al. study was suggestive of bottle-feeding associated with stunting.

In the present study, 6% of children were not breastfed for at least one time in life. Out of 94 percent, only 68% of children continued breastfeeding for one year. Aparajitha et al. study suggested that children who breastfed for two years were had low chances of getting under- weight, stunted, and wasted. In this study, socio-demographic parameters Education of the mother, Father; Occupation of the mother; socioeconomic status was associated with underweight, stunted, wasted and statistically significant. In this study, the socio-demographic parameters sex of children, birth order, and birth weight were not associated with underweight, stunted, wasted, and statistically not significant. In the present study, early initiation of breastfeeding is associated with underweight, stunted, wasted. This association is statistically significant. In our study, exclusive breastfeeding for six months is associated with underweight, stunted, wasted. This association is statistically significant. In the present study introduction of solids, semi-solids are associated with underweight, stunted, wasted. This association is statistically significant. In the present study introducing solids, semi solids are not associated with nutritional status (MAM; SAM ;) This association is not statistically significant.

In our study, minimum meal frequency, minimum dietary diversity, minimum acceptable diet, and iron-rich diet consumption are associated with underweight, stunted, wasted. This association is statistically significant. In our study, minimum dietary diversity, minimum acceptable diet, iron-rich

diet consumption is not associated with nutritional status (MAM; SAM ;) This association was not statistically significant. In the present study, a child ever breastfed was associated with stunting and wasting. This association is statistically significant. In our study, exclusive age-appropriate feeding is not associated with underweight, stunting or wasting. This association is statistically not significant. In the present study, bottle feeding is associated with stunted, wasted. This association is statistically significant. Our study's exclusive milk feeding frequency in non-breastfed children is not associated with underweight, stunted, wasted. This association is statistically not significant.

Children who suffer from growth retardation due to low diets or recurrent infections tend to be at greater risk for illness and death. Stunting results from long-term nutritional deprivation and often results in delayed mental development, poor school performance, and reduced intellectual capacity affects economic productivity at the national level.

27.6% of children were underweight. It is easy to measure; this is the indicator for most data collected in the past. Evidence has shown that the mortality risk of children who are even mildly underweight is increased, and severely underweight children are at even greater risk. 18% of children were stunted. Women of short stature are at greater risk for obstetric complications because of a smaller pelvis. 19.9% were wasted. Wasting in children is a symptom of acute under-nutrition, usually due to insufficient food intake or a high incidence of infectious diseases, especially diarrhoea. In turn, Wasting impairs the immune system's functioning and can lead to increased severity and duration of and susceptibility to infectious diseases and an increased risk for death. No one was overweight in our study. Childhood obesity is associated with a higher probability of obesity in adulthood, leading to a variety of disabilities and diseases, such as diabetes and cardiovascular diseases. The risks for most non-communicable diseases resulting from obesity depend partly on the age at onset and the duration of obesity. Obese children and adolescents are likely to suffer from both short-term and long-term health consequences 16.7% of children came under moderate acute malnutrition. 3.2% of children belong to severe acute malnutrition. In the study of Fekuduet al.^[14], 19.5% were underweight; 22.9% were stunted; 17.55 were wasted, which is lower than the present study. In the study of S J Gandhi et al., 11.5% were underweight; 15.6% were stunted; 8.6% were wasted, which is lower than the present study. In the study of Chaudhary et al., 43.5% were underweight; 65.2% were stunted; 11.9% were wasted, which is higher than the present study. Mostly the reason behind this was Chaudhary et al. surveyed urban slums of Ahmedabad. In the study of Younes L et al., 53.8% were underweight; 43.2% were stunted; 60.7% were wasted, which is higher than the present study. This study was done in a rural health training centre where most of the malnourished children were referred.

CONCLUSION

The findings from the present study highlight the importance of early initiation and exclusive breastfeeding and introduction of solid, semi-solid foods at 6-8 months. Good dietary diversity. Adequate food frequency will provide the best nutrition in infancy. Our study concludes that bottle feeding is a risk factor for undernourishment. There is a need to focus more on educating illiterate mothers regarding breastfeeding practices and infant feeding practices and promote programmes that support and encourage breastfeeding, adequate and timely complementary feeding at primary level focusing more on illiterate, working women, and those from lower socio-economic status.

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