

A study on Infant and young child feeding practices among children aged less than 24 months in an Urban slum of Raichur – A cross-sectional study.

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ABSTRACT

Introduction: After the age of six months the nutritional requirement of the child will no longer be met with breast milk alone. Timely introduction of solid and semisolid foods, appropriate quantity and quality is very essential failing which, risk of malnutrition increases. Therefore the present study was taken up with the objective of assessing the infant and young child feeding practices of children less than 24 months. **Materials and methods:** This cross sectional study was conducted in the urban field practice area of a medical college in Raichur, Karnataka. Based on DLHS 4 data on proportion of children under 6 months who were exclusively breast fed, a sample size of 171 was obtained. A pretested semi structured questionnaire was framed based on WHO IYCF questionnaire to collect data. **Results:** Mothers of 178 children were included in the study. Proportion of male and female children exclusively breast fed were 45% and 55% respectively. Colostrum was discarded by 19.4% mothers and amongst them 11.3% perceived it to be dirty. Minimum acceptable diet (MAD) requirement was met only in 12.4% of the children. **Conclusion:** Inappropriate infant and young child feeding practices are highly prevalent. A minimum acceptable diet criterion according to the WHO recommendation was met only in 1/8th of the study population. There is a need to create awareness on the importance of proper feeding practices in the community to improve the nutritional status of the under-five population.

Key-words: Infant and young child feeding (IYCF), Breast feeding, complementary feeding.

INTRODUCTION

First two years of life is crucial in a child's development, where optimal infant and young child feeding ensures growth and impacts survival.^{1, 2} Even mild or moderate under nutrition during this period can cause irreversible damage.³ Early initiation of breast feeding, exclusive breastfeeding for the first six months and continued breastfeeding for two years and beyond significantly reduces childhood malnutrition.^{4,5, 6,7} Early initiation of breast feeding provides many immune-competent factors, which gets disturbed by introducing pre-lacteal feeds and partial breast feeding.⁸ After 6 months, solid and semi-solid foods need to be introduced along with continued breast feeding to meet the increasing nutritional requirements of the growing infant.⁹

According to NFHS 4, infants below six months who are exclusively breast fed and children aged 6 to 23 months receiving an adequate diet is 54.9% and 20.9 % respectively. While, in Karnataka it is 54.2 and 22.6% respectively.¹⁰ About 19% of all under five deaths can be prevented by optimal infant and young child feeding. Hence, World Health Organisation (WHO) and UNICEF recommended few core indicators to assess IYCF.^{3,11,12}

Data on IYCF from urban slums of northern Karnataka are meagre, in the light of this the present study was undertaken to assess the IYCF practices and their determinants among children aged less than 24 months in an urban slum of Raichur, Karnataka.

MATERIALS AND METHODS

This cross-sectional study was conducted in the urban field practice area (an urban slum) of a medical college in Raichur district, Karnataka. The study was carried out for a duration of six months from October 2017 to March 2018. As per the findings of DLHS 4, in Raichur district, the proportion of children who were found to be exclusively breast fed for at least six months was 19.6%.¹³ Based on this prevalence, the sample size was estimated

to be 158 at 90% confidence interval using Epi Info online sample size calculator. Considering a nonresponse rate of 10%, a sample size of 174 was reached. There were 17 anganwadis in the field practice area. Data was collected from at least 10 children from each anganwadi. A total of 178 children less than 24 months of age were studied in this research project. The children were randomly selected from the list that was obtained from the

anganwadi centres. Permission to conduct the study was obtained from the institution's ethical committee. Data was obtained by face to face interviews from the mothers of the children after obtaining informed consent. A pretested semi structured questionnaire was framed according to the WHO IYCF questionnaire. The questionnaire consisted of two parts, the first part consisted of questions on socio-demographic variables and the second part consisted of questions on breastfeeding and infant and young child feeding practices.

Seven core indicators and one optional indicator (bottle feeding) were included in the questionnaire as per the guidelines of WHO. Based on the guidelines, information was collected about the child's feeding practices in the previous 24 hours, this comprised of questions on the type of food items fed to the child and the number of times in a day they were fed. Food items were categorized in seven types, that is, cereals, legumes and nuts, dairy products, meat products, egg, vitamin A rich fruits and vegetables, and other fruit and vegetables.¹⁴

Definitions used:¹⁴

Minimum diet diversity (MDD): Proportion of children in the age group of 6-23 months who were fed foods of four or more groups from a total of seven food groups, namely, dairy products, legumes and nuts, flesh foods, eggs, vitamin A rich fruits and vegetables, cereals and tubers, and other fruits and vegetables.

Minimum meal frequency (MMF): is the proportion of breastfed and non-breastfed children aged 6-23 months who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more i.e., two times if 6-8 months and three times if 9-23 months for breast fed children and four times for all children aged 6-23 months among non-breast fed children.

Minimum acceptable diet (MAD): is the proportion of children aged 6-23 months who receive at least the MDD as well as at least the MMF according to the definitions mentioned above¹⁴

Data was entered in Microsoft excel 2010 and analysed using Microsoft excel, SPSS version 16 and Epi Info 7. The results were expressed as percentages and proportions. Chi square test was used to test the association between variables. A p value of less than 0.05 was considered as statistically significant.

RESULTS

A total of 178 mothers were interviewed about the feeding practices of their infants and young children under 24 months of age. About 32.6% of children were males and 67.4% were females. About 68.5% mothers were literates, of whom 14.6% had a graduate degree, 83.7% of them were homemakers by occupation. Majority (65%) of the population belonged to lower socio economic status according to Modified B.G. Prasad classification. Half of the study participants (50.6%) belonged to joint families and about 65.2% of mothers said there are more than 5 members in their family.

Table 1: Status of Infant and young child feeding practices according to sex

Status		Male	Female	Total	Chi square (p value)
		N (%)	N (%)	N (%)	
Exclusive breast feeding among 0-6months(n=41)	Yes	9 (45)	11(55)	20 (100)	3.186 (0.07)
	No	4(19)	17(81)	21(100)	
Early initiation of breast feeding (less than 1 hour) (n=178)	Yes	30(24.6)	92(75.4)	122 (100)	11.21 (0.001)
	No	28(50)	28(50)	56 (100)	
Continued breast feeding : 12 months to 15 month (n=22)	Yes	10(62.5)	6(37.5)	16 (100)	1.49 (0.2)
	No	2(33.3)	4(66.7)	6 (100)	
Introduction of semisolid foods (6-8 months) (n=27)	Yes	0	7(100)	7 (100)	8.77 (0.03)
	No	13(65)	7(35)	20 (100)	
*Minimum diet diversity -6 months to 24 months (n=137)	Yes	7(30.4)	16(69.6)	23 (100)	0.73 (0.78)
	No	38(33.3)	76(66.7)	114 (100)	
†Minimum meal frequency 6 to 24 months (137)	Yes	22(26.5)	61(73.5)	83 (100)	3.83 (0.05)
	No	23(42.6)	31(57.4)	54 (100)	
‡Minimum acceptable diet 6-24 months (137)	Yes	4(23.5)	13(76.5)	17 (100)	0.764 (0.38)
	No	41(34.2)	79(65.8)	120 (100)	
Bottle feeding	Yes	9(33.3)	18(66.7)	27 (100)	0.008 (0.92)
	No	49(32.5)	102(67.5)	151(100)	

Table 2: Association of exclusive breast feeding and minimum adequate feeding with the socio- demographic variables

Variables	EBF (infants 0-6 months)		P value	MAD (6 to 24 months)		P value
	Yes(%)	No(%)		Yes(%)	No(%)	
Socio economic status						
Upper	4 (19)	3 (15)	0.7	9 (7.5)	14 (82.4)	0.001†
Lower	17 (81)	17 (85)		111(92.5)	3(17.6)	
Mother's education						
Illiterate	4 (19)	4 (20)	0.939	38(31.7)	0	0.007†
Literate	17 (81)	16 (80)		82(68.3)	17(100)	
Mother's occupation						
Home makers/ Unemployed	18 (85.7)	20 (100)	0.12	94 (78.3)	17(100)	
Employed	3 (14.3)	0 (0)		26 (21.7)	0	0.02†
Order of the child						
≤2	18 (85.7)	17 (85)	0.95	76(63.3)	13(76.5)	1.129
>2	3 (14.3)	3 (15)		44(36.7)	4(23.5)	0.288
Type of family						
Joint	17 (81)	7 (35)	8.9 *	56(46.7)	10(58.8)	0.88
Nuclear	4 (19)	13 (65)	0.003	64(53.3)	7(41.2)	0.348
Number of occupants in the family						
≤4	4 (19)	16 (80)	15.32 *	39(32.5)	3(17.6)	1.54
≥5	17 (81)	4 (20)	0	81(67.5)	14(82.4)	0.214

*chi square, †Mid p exact

Majority of the mothers (69.1%) were aware of the correct duration of exclusively breast feeding as six months, while 5.6% mothers thought it to be four months. Responses given by the mothers when asked about the duration of continued breast feeding were until one year (19.1%), two years (38.8%) and as long as the child wants (36.5%). Majority of the (87.6%) of the mothers were aware about colostrum to be given to the infants.

Colostrum was not given to 19.7% of the children at birth. Among the mothers who had not fed colostrum to their children at birth, 65.7% perceived it to be dirty and not healthy for their babies and the rest of them (34.3%) were not aware about colostrum. They practiced discarding the first milk as per the advice of the elders in the family. About 32% of the mothers had given pre-lacteal feeds to the infants.

Practice of Infant and young child feeding is presented in Table 1. About 48.8% of the infants less than six months were given exclusive breast feeding. About 68.5% of the infants were initiated on breast feeding within one hour of birth, among these infants 75.4 % were female and 24.6% were male, this difference was found to be statistically significant ($p<0.01$). Among infants aged 6 to 8 months ($n=27$), only the female infants were introduced with semi solid foods at 6 to 8 months of age, this difference in the gender and introduction of semi-solid foods was found to be statistically significant ($p<0.05$). About 12.4% of infants and young children aged 6 to 24 months had received minimum acceptable diet.

Association of exclusive breast feeding and minimum acceptable diet with socio demographic variables is presented in Table 2. Type of family and number of occupants in the house were found to be significantly associated with the practice of exclusive breast feeding ($p<0.005$ and $p<0.01$ respectively). Mother's education and occupation was found to be statistically significant with minimum acceptable diet (MAD) of the children with p value <0.05 .

DISCUSSION

In the present study 68.5 % of the children were breast fed within one hour which is better than the findings of National Family Health Survey 4 (NFHS-4) for Karnataka (56.4 %).¹⁰ A study carried out by Das N et al showed comparatively lower proportion of children (34.2%) initiated on breastfeeding within one hour of birth.¹⁵ It is recommended to initiate breastfeeding immediately after birth, preferably within the first 30 minutes.¹⁶

A study by Agarwal et al reported that 20.5% of children had been given pre-lacteal feeds.¹⁷ A study by Davalgi et al showed that 9% of the mothers, despite being educated had given pre-lacteal feeds to the newborns. The most commonly given pre-lacteal feeds were found to be honey and water. Their study reported that only 39% of children were initiated on breastfeeding within one hour of birth, which is low when compared to the findings of our study.¹⁸ In our study, a higher proportion of (32%)

mothers or caregivers used jiggery/sugar water, honey, castor oil as pre-lacteal feeds based on the suggestion of the elders in the family. Giving pre-lacteal feeds is prevalent across the country. In a study carried out by Nawaz A.S et al in Rural areas of Raichur, 71.2% of infants were given colostrum at birth, which is comparatively lower than the findings of our study, while 12.4% mothers had given honey and jiggery water as pre-lacteal feed, 2.8% had given honey and 13.6% of infants were breastfed by other lactating women (wet nursing), but not by their mothers; hence being devoid of the protective colostrum.¹⁹ The mothers were told by elders in the family to refrain from breastfeeding the infant for the first three days as they perceived the milk is dirty, because of its yellow colour. Castor oil is often used as pre-lacteal feeds by the mothers/ caregivers as they think it acts as a purgative. These practices are not only unnecessary but also harmful for the new born. The pre-lacteal feeds given and the beliefs associated with them vary based on the religion, local customs and also vary in different areas.

Though 69% of the mothers were aware of the duration of exclusive breast feeding (EBF) only 48.8% of them had actually exclusively breast fed their children which was lesser when compared to NFHS 4 data in the state (54.2%) and various other studies.^{12,20,21} Kalita et al in their study showed that exclusive breast feeding was found to be more among the mothers who were better educated, those who had received four or more numbers of ANC visits, primipara mothers, mothers in younger age group and those belonging to lower socioeconomic status.²¹ In contrary to the findings by Kalita et al, Veghari G et al showed that multiparous women are more likely to exclusively breastfeed their infants, the practice of EBF showing increase with the higher birth order.²²

Our study found statistical significant association with type of family and number of occupants in the family and exclusive breast feeding. Practice of Exclusive Breast Feeding was found to be better in nuclear families and in families with less than four residents. Similar observations were made in other studies with larger family size.^{22,23,24} We can conclude from these findings that in joint families the suggestions made by the elders based on the customs, rituals and beliefs influence the feeding practices resulting in introduction of pre-lacteal feeds and early introduction of complimentary feeds regardless of the mothers awareness of the correct feeding practices. Hence it is very crucial to impart the right information on Infant and Young Child Feeding practices to the elders in the family as well, as they play a vital role in influencing the feeding practices. A study carried out by Alade et al in Nigeria showed that the nursing mothers received support with the household chores, assistance in taking care of the older child and verbal support from family members like grandmothers, mother in laws, friends and sometimes even from husband. Several women did not receive emotional support from family members while practicing exclusive breastfeeding and also had to face challenges like hunger, severe body ache

and problems due to painful breast conditions. Hence the support from family members plays a vital role in initiating and maintaining exclusive breastfeeding for the appropriate duration.²⁵ Continued breast feeding was practiced by 72% of the mothers, even though only 38.8% of them being aware of the correct duration as two years. This is similar to the DLHS data in the district (72.2%).¹³ Only one fourth of infants (25.9%) aged 6 to 8 months were introduced with solid and semi-solid foods. This was found to be much lower when compared to various other studies which reported a prevalence of 71.1%²⁶, 38.7%²⁷, and 62.5%.¹²

About 15.1% of the children were bottle fed in the present study. This figure is much lesser when compared to studies that have reported the prevalence ranging from 26% to 75%.^{12, 15}

Minimum diet diversity (MDD) is the indicator which shows if the child receives complete and balanced diet. In this study, Minimum Dietary Diversity as per WHO guidelines was observed only among 16.8% of the children. Minimum meal frequency (MMF) is an indicator which shows the appropriate number of times the child should be eating according to the age to meet the nutrient requirement of the body. We found that the Minimum Meal Frequency was met in 60.6% of the total proportion of children in 6-23 months age group. Minimum acceptable diet (MAD) indicator is the proportion of children aged 6-23 months who received at least the Minimum Dietary Diversity as well as at least the Minimum Meal Frequency. Minimum Acceptable Diet in our study was found to be 12.4%. This finding of our study is much lesser than that reported by NFHS-4 Karnataka together among breast fed and non-breast fed children (22.6%). Another study reported MDD, MMF and MAD to be 59%, 48% and 26% respectively¹⁶ which was found to be better than the present study.

We observed that women's education and occupation had a significant association with MAD. All the mothers who met the minimum requirement were literate and home makers by occupation. It is likely that the conditions of work environment like frequency and duration of breaks in between the working hours, maternity leave, proximity of work place influences the infant feeding practices.²⁸

Conclusion & Recommendations:

Inappropriate infant feeding practices are highly prevalent in the community, particularly the proportion of children exclusively breast fed (48.8%), introduction of solid and semi-solid foods at appropriate time as per guidelines (25.9%), and minimum adequate diet (12.4%). Knowledge and support systems favouring appropriate infant feeding practices is lacking in the community resulting in such poor indicators. Providing the correct information to the mothers on infant and young child feeding practices is required to root out the misconceptions around feeding practices including giving pre lacteal feed to the infants. Even the family members of the mother need to be made aware of the correct feeding practices as advice from family members plays a crucial role in influencing the time of initiation and

continuing exclusive breast feeding for the appropriate time. Efforts to promote and strengthen behaviour change by the health care delivery system regarding IYCF practices among the mothers have to be emphasised and practiced.

Limitation of the study:

The study was conducted in the Urban field practice area (an urban slum) of the medical college. Sample size was small especially with regard to distribution of the children according to sex and age group. Therefore, the finding in the present study limits its representativeness.

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