Original Research Article

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Infant and young child feeding practices among mothers in Hyderabad, Telangana

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ABSTRACT

Background: The objective of the study was to assess Infant and Young Child Feeding (IYCF) practices using World Health Organization indicators in infants and young children attending immunization clinics.

Methods: A hospital based cross-sectional study was designed in a tertiary care hospital in an urban setup. Infant and young children from birth to 24 months attending immunization clinics were included. Main outcome measures were to assess IYCF Practices (8 Core and 7 Optional Indicators) and possible reasons for not practicing the same.

Results: A total of 520 mothers attending immunization clinics were interviewed from June to July 2014. Mean age of the children was 32.5 weeks. 50.1% and 47.6% belonged to Hindu and Muslim religion respectively. Only 33.78% children were breastfed within one hour of birth. Among those who had not initiated breastfeeding within one hour of birth, 60.6% were not aware and the most common reason was caesarean section. In children older than 6 months, only 80% of children were exclusively breast fed for six months and the most common reason was insufficient breast milk. Only 72.5% of mothers introduced complementary foods from 6 to 9 months.

Conclusions: The study shows poor IYCF practices in children attending immunization clinic at an urban tertiary care hospital. There is a clear knowledge gap among mothers. These faulty practices need to be addressed to improve feeding practices so as to maximize their benefits to the child. The study did not assess nutritional status of children. This would have been useful to see how inadequate IYCF practices were associated with nutritional status of the children.

Keywords: Feeding practices, Breastfeeding, Complimentary feeding

INTRODUCTION

Malnourishment and under-nutrition among children below the age of two years is a public health challenge that is faced globally. The first two years of a child's life are the most crucial in terms of proper growth and development. Optimal Infant and Young Child Feeding practices (IYCF) rank among the most effective interventions to improve child health.

Malnutrition is a wide spread condition affecting children under five years in India. Majority of the malnutrition in India is due to growth faltering in height and weight during the first two years of life (Mamidi et al). Poor infant and young child feeding practices are one of the major factors responsible for under-nutrition. ²

According to Jones et al exclusive breast feeding up to 6 months after birth and breast feeding up to 12 months was ranked the most effective intervention that could prevent under-five mortality.³ Thus initiation of early breast feeding, exclusive breast feeding and timely introduction of complementary feeds is essential for

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proper growth and development of infants and young children.

The present study assessed IYCF practices among mothers in Hyderabad, Telangana. The study is a hospital based cross sectional study conducted at the immunization OP of a tertiary care hospital in Hyderabad. A thorough questionnaire with several closed and open ended questions was used to assess IYCF practices among mothers of children younger than 2 years. The questionnaire also had provisions to determine the reasons or causes for inadequate IYCF practices.

The collected data was analyzed according to 8 core and 7 optional IYCF indicators as prescribed by the World Health Organization in 2008. Several national and international studies have been conducted to assess IYCF practices in various territories but very few of them have incorporated the 8 core and 7 optional indicators as

prescribed by the WHO in 2008.⁴ Also very few of them examined the reasons for not practicing inadequate IYCF practices.

Thus a study that incorporated the WHO indicators was conducted to assess IYCF Practices and reasons for inadequate IYCF Practices in Hyderabad, Telangana.

METHODS

Primary objective

To determine the IYCF practices using 8 core indicators and 7 optional indicators (Table 1).

Secondary objective

To determine the reasons or causes for inadequate IYCF practices.

Table 1: Optional and core indicators to assess infant and young child feeding practices as prescribed by the WHO.⁴

8 core IYCF indicators (WHO):	7 optional IYCF indicators (WHO):
1. Early initiation of breast feeding	1. Children ever breast fed
2. Exclusive breast feeding under 6 months	2. Continuing breast feeding at 2 years
3. Continued breast feeding at 1 year	3. Age appropriate breast feeding
4. Introduction of solid, semi-solid or soft foods	4. Predominant breast feeding under 6 months
5. Minimum dietary diversity	5. Duration of breast feeding
6. Minimum meal frequency	6. Bottle feeding
7. Minimum acceptable diet	7. Milk feeding frequency for non-breastfed children
8. Consumption of iron rich or iron fortified foods	

Study design

Hospital based cross sectional study. Conducted at the Immunization OP of a tertiary pediatric hospital in Hyderabad, Telangana, India.

Study subjects

Mothers of children aged 0 to 24 months were chosen for the interview.

Inclusion criteria

All mothers of children aged 0 months to 24 months

Exclusion criteria

Exclusion criteria were mothers of children with congenital birth defects such as cleft lip, cleft palate etc; mothers of adopted children.

Sample size

Sample size was calculated based on the lowest prevalence of indicators of IYCF practices (NFHS-3) i.e. initiation of breast feeding within one hour (~25%). With

an absolute precision of 5%, the required sample size was 289 children. A total of 520 children were assessed in the study. The study was conducted after obtaining permission from the Institutional Ethics Committee.

Data collection

A pretested structured questionnaire was administered to all subjects that included socio-demographics and 8 core and 7 optional IYCF indicators. Knowledge about child feeding practices and reasons for inadequate practices were also collected. The data was collected from June to July 2014.

Statistical analysis

Data was collected using printed questionnaires. Open Source Programming R was used for data analysis. Addon package Epicalc was also used. Binomial proportions, chi square test and logistic regression were used for main outcome measures. P value less than 0.05 was considered significant. For continuous variables, mean positive and mean negative standard deviation was calculated. For categorical variables, frequencies were calculated. Binomial test was used for hypothesis testing.

RESULTS

Mothers of 520 children attending immunization clinics were interviewed. The median age of the child was 32.5 weeks. The median age of the mothers was 23 years. 70.3% of the women had studied till 10th class or higher. 89.2% of the women were housewives. 54.8% of the women were from joint families followed by nuclear families at 42.5%. The detailed demographic data has been presented in Table 2.

Core indicators

33.8% of the children were put to breast within one hour of birth. 80.3% of the child infants 0-5 months of age were exclusively fed with breast milk. 86.8% of children

12-15 months of age were fed breast milk. 72.5% of the children 6-8 months of age received solid, semi-solid or soft foods. Among the children 6-23 months of age, minimum dietary diversity was 29.9%, minimum meal frequency was 34.1%, minimal acceptable diet was 6.2% and consumption of iron rich/iron fortified foods was 73.1%.

100% of the children 0-5 months of age were predominantly breast-fed. 78.1% of the children were receiving age appropriate breast-feeding. Only 30% were bottle-fed. Median duration of breast-feeding was not calculated as it considers children up to 36 months of age. The study was limited to children up to 24 years of age. Among the children 20-23 months of age, 45.8% were still being given breast milk.

Table 2: Demographic data.

Demographic parameters	N	Percentage (%)		
Sample size	520	-		
Median age of mother	23 years	-		
Median age of child	32.5 weeks	-		
Sex of the child				
Female	235	45.2		
Male	285	54.8		
Birth order				
First	224	43.2		
Second	180	34.7		
Third	94	18.1		
Fourth	17	3.3		
Fifth	4	0.8		
Religion				
Hindu	260	50.1		
Muslim	247	47.6		
Christian	8	1.5		
Other	4	0.8		
Education				
No education	97	18.7		
4th class	55	10.6		
10th class or higher	368	70.7		
(10th class	257	(49.4		
Intermediate/12th class	70	13.5		
Graduate	33	6.3		
Post Graduate)	8	1.5)		
Occupation				
Housewife	463	89.2		
Part time job	37	7.1		
Full time job	19	3.7		
Type of family				
Nuclear	221	42.5		
Joint	285	54.8		
Extended	14	2.7		

Table 3: WHO core indicators for assessment of feeding practices in infants and young children.

S.	Como in dicatom	Definition	Result	
no.	Core indicators		N	%
1	Early initiation of breastfeeding	Proportion of children born in the last 24 months who were put to breast within one hour of birth.	170	33.8
2	Exclusive breast feeding	Proportion of infants 0–5 months of age who are fed exclusively with breast milk	252	80.3
3	Continued breast feeding at 1 year	Proportion of children 12–15 months of age who are fed breast milk	33	86.8
4	Introduction of complementary foods	Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods.	216	72.5
5	Minimum dietary diversity	Proportion of children 6–23 months of age who receive foods from 4 or more food groups. (Gave at least four food groups	69	29.9
6	Minimum meal frequency	Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more	92	34.1
7	Minimal acceptable diet	Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk)	16	6.2
8	Consumption of iron-rich or iron fortified foods	Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home	193	73.1

Table 4: Optional WHO indicators for assessment of feeding practices in infants and young children.

C No	Ontional Indicators	Result		
S.No.	Optional Indicators	n	%	
1.	Ever breast fed= Yes (%)	499	97.1	
2.	Continue breast feeding at 20 to 23 months= Yes (%)	11	45.8	
3.	Age appropriate breast feeding= Yes (%)	225	78.1	
4.	Predominantly breast feeding= Yes (%)	252	100	
5.	Median duration of breast feeding	Not calculated	-	
6.	Ever bottle fed= Yes (%)	156	30	
7.	Animal milk at least 2 times a day= Yes (%)	78	92.9	

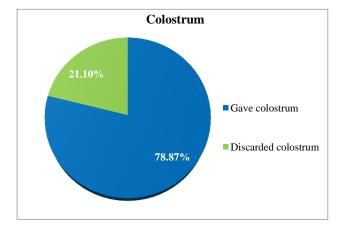


Figure 1: Colostrum feeding practices.

Colostrum feeding

78.8% mothers gave colostrum to the child after birth. The rest reported that they discarded it. The mothers gave

several reasons for discarding colostrum which included the following:

- Spoilt milk.
- Too thick.
- Thought it was stagnant milk.
- Thought it will make the baby sick.

Pre-lacteal feeds

37.9% (196) mothers reported that they gave pre-lacteal feeds to their children. Majority of these mothers were not aware that pre-lacteal feeds should not be given. Pre-lacteal feeds like honey and water were given in several cases as a part of a religious custom.

DISCUSSION

Inadequate IYCF practices are responsible for majority of under nutrition in India. This cross sectional study shows that poor IYCF practices are still widely prevalent in urban areas. The IYCF practices in the community are slightly better than the national averages reported in the third National Family Health Survey (NFHS-3 2005-06), but nevertheless much needs to be done to improve the same.⁵ Knowledge gaps were common for most indicators and many reasons were avoidable. The data has not been compared to NFHS-4 as it was conducted from January 2015 to December 2016. The study was conducted in 2014.

The odds of mortality in the newborn children are significantly higher in those who delay initiation of breast feeding within one hour (Edmond et al).⁶ According to NFHS 3 in 2006, in India only 24.5% were giving breast feeding within one hour. In the present study 33.8% gave breast feeding within one hour. This was despite 39.4% having knowledge about initiation of breastfeeding. The most common reason was lower segment caesarean section operation (54%) followed by "child was in the NICU/incubator (11.7%). The Government of India and the WHO recommend starting breastfeeding immediately after childbirth, preferably within an hour.

Delayed initiation of breastfeeding may also be the reason for high usage of pre-lacteal feeds like honey or animal milk (Agarwal et al).⁷ Pre-lacteal feeds further diminish the infant's hunger and the milk ejection reflex is not stimulated. Thus increasing the chances of lactation failure (Mathur et al).⁸

Breast feeding for the first 6 months is the best food and no other food (including water) is required during this period (WHO 2004). While in India, 46.6% were exclusively breast feeding for first 6 months (NFHS 3), in this study 80.3% were given exclusive breast feeding for the first 6 months. Factors like education and employment of the mother significantly affect duration of breastfeeding. (Agampodi et al). 45% had knowledge about exclusive breast feeding. The most common reason was "the baby weaned itself" (18.6%) followed by "milk was not enough" (13.8%).

Complementary feeding: Complementary foods are necessary after first 6 months as breast milk alone cannot meet energy requirements of Infants after this age (WHO 2006). In this study 72.5% of the mothers were giving complementary foods which was higher than the national average (56.7%). This was evident in the number of meals given (mean of 3 meals per day) with 34.1% following minimal meal frequency. However, the dietary diversity of the foods given were very poor as only 29.9% gave minimum of four food groups each day, lesser than national average (31.1%).

Dietary diversity

Poor dietary diversity has been implicated as a causal role of stunting in children of developing countries (Allen 1994). In the present study, only 13.7% were giving flesh foods and 43.2% gave eggs. 40.6% and 44.9% were giving Vitamin A rich foods and other fruits and

Vegetables to the child respectively. Dairy products were being given in 58.5% of the children. This resulted in poor minimal acceptable diet (6.2%). Meal frequency, iron intake and altitude were directly and positively associated with haemoglobin concentration; dietary diversity was indirectly associated (Hipgrave et al). 11

Iron-rich foods

69.5% of children suffer from Anaemia in India (NFHS 3). This has been attributed to inadequate consumption of Iron rich foods that are rich in heme and non heme iron. 73.1% of children were given iron rich foods on the previous day (green leafy vegetables, Flesh foods or Iron fortified foods such as Infant formula). Iron rich foods were directly linked to higher haemoglobin concentrations among children (Hipgrave et al). 11

Other indicators

30% were giving bottle-feeding. The most common reason for not giving more than four food groups was "baby was not able to digest or baby refused". Bottle feeding is a significant cause of lactation failure (Mathur et al). Bottle feeding also places the child at risk of developing cholera and other diarrhoeal diseases (Gunn et al). Preliminary observation suggest that Infant formulas were being used by most mothers.

Limitations

The study included only children from 0 to 24 months to cover all IYCF Indicators. The optional indicator "median duration of breast feeding" was not calculated due to non-coverage of 24 to 36 months. The study did not assess nutritional status of children. This would have been useful to see how inadequate IYCF practices were associated with nutritional status of the children. The study was a hospital-based study. Hence the results obtained in this study cannot be generalised for the entire region of Hyderabad.

Table 5: Comparison between present study and indicators from NFHS-3 (2005-06).

S. no.	Indicators	Present study (%)	NFHS - 3 (2005-06) (%)
1.	Initiation of breast feeding within 1 hour	33.8	24.5
2.	Exclusive breast feeding	80.3	46.6
3.	Complementary Feeding	72.5	56.7
4.	Minimum dietary diversity	29.9	31.1

CONCLUSION

Though IYCF practices are better than reported national averages, much needs to be done to improve the IYCF practices in children of low socio economic groups. Knowledge gaps were common and health care workers need to improve the existing knowledge gaps at different time points that include Antenatal check-ups, Hospital deliveries and Immunization visits. Though most reasons were avoidable; some reasons such as "insufficient breast milk" need to be explored to see whether this is psychological or due to malnutrition of the mothers. Further studies which correlate IYCF practices in an area with growth and nutritional status of children ought to be conducted.

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