

## A study on Infant and Young Child Feeding (IYCF) practices among mothers attending a Tertiary Health Care Institution, Kolkata

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**Abstract:** *Background:* Optimal feeding of infants and young children is of utmost importance for their better health and survival; deviation from this will result in infections, malnutrition or other morbidities and death as its worst consequence. *Objectives:* This study was undertaken to assess the IYCF practices among mothers having children of 0-23 Months, especially in accordance with WHO Indicators for the same. *Methods:* A Cross-Sectional Study was done among 360 mothers having children of 0-23 Months attending a tertiary health care institution, Kolkata during Oct-Nov, 2016. *Results:* Out of 170 infants aged 0-5 month 89.4% were exclusively breast fed; rest were predominantly breastfed. Around 30% babies were bottle-fed while only 33.3% children started complementary feeding from 6-8 months of age. Majority of the children i.e.70.0% of 6-23 months fulfilled minimum meal frequency whereas only 30% fulfilled minimum dietary diversity. Adequate diet was taken by 36.8 % of the 6-23 months old children. *Conclusion:* IYCF practices among mothers are still sub-optimal which need to be addressed urgently for attaining healthy childhood while avoiding morbidities and premature death.

**Keywords:** Children of 0-23 Months, IYCF practices among mothers, WHO IYCF Indicators.

### Introduction

Optimal feeding of infants and young children is essential for their nutritional status as well as for several other health issues. Poor feeding practices at this early stage of life results in malnutrition, impaired cognitive and social developments [1]. Breastfeeding confers short-term and long-term benefits on both child and mother [2-3]. Infant mortality rates are 5-10 times higher among those who have not been breastfed or have been breastfed for less than 6 months [2].

Avoiding breastfeeding and indulging in artificial feeding leads to increased risk of many acute infections like severe diarrhoea, pneumonia and urinary tract infections as well as long-term diseases like asthma, type 1 diabetes etc [3-7]. From the age of 6 months, breast milk is not enough; complementary feeding becomes necessary to fill the energy and nutrient gap [8]. Untimely and inappropriate complementary feeding leads to growth faltering, micronutrient deficiencies and infectious illnesses [3, 9]. For optimal infant and young child feeding, WHO

recommends exclusive breastfeeding for 6 months and nutritionally adequate and safe complementary feeding starting from the age of 6 months with continued breastfeeding up to 2 years of age or beyond [10]. Poor breastfeeding and complementary feeding practices are widespread. Worldwide, only around 34.8% of infants are exclusively breastfed for the first 6 months of life, the majority receiving some other food or fluid in the early months [11]. In India, 54.9% infants are exclusively breastfed for the first 6 months of life and 42.7% children of age 6-8 months are introduced to complementary foods [12]. There are very few studies on IYCF practices in West Bengal. Studies have been done elsewhere, where people are culturally and ethnically different. Considering these issues, this study on IYCF was undertaken at College of Medicine and Sagore Dutta Hospital (CMSDH), Kamarhati to assess feeding practices among mothers having children of 0-23 months old visiting CMSDH, Kamarhati, Kolkata, especially in accordance with WHO Indicators, 2008.

## Material and Methods

This study was an institution-based, descriptive type study with cross-sectional study design. Study population were mothers having children of 0-23 months of age, attending CMSDH, Kamarhati. Study area was outpatient departments (OPDs) of CMSDH, i.e., Paediatric Medicine OPD, Immunization Clinic, Medicine OPD, and Gynaecology & Obstetrics OPD. The study was conducted over three months (Sep 2016 -November 2016).

During the study period, 360 eligible mothers could be interviewed by convenience sampling. So, sample size was 360. Study tools used were i) A pre designed, pre-tested, structured schedule and ii) Mother and Child Protection (MCP) Cards, if available. Mothers who refused to give informed consent or having seriously ill children were excluded from the study. Mothers having more than one children of this age-group, IYCF practices of the youngest child were considered. Informed written consent was taken from each mother explaining the purpose and procedure of the study before enrolling in the study.

### Definitions: [3, 13]

- *Exclusive breast-feeding:* It is feeding of an infant by breast milk only (including milk expressed or from a wet nurse). Under special circumstances ORS, drops or syrups may be allowed, if medically indicated.
- *Predominant breast-feeding:* It is feeding of an infant predominantly by breast milk; certain liquids, ritual fluids and ORS, drops or syrups are taken under this category.
- *Pre-lacteal feeding:* It is the practice of giving a newborn infant ritual items before initiation of breast feeding.
- *Colostrum:* Thick, yellow, viscous milk first produced by mother's breast for 3-4 days. Rich in immunoglobulins, proteins and vitamins.
- *Complementary feeding:* It is the introduction of solid, semi-solid or soft foods to an infant with continuation of breast feeding.

*Ethical approval:* Approval was taken before conducting the study from Technical Advisory Committee (TAC) and Institutional Ethical Committee (IEC) of CMSDH, Kamarhati.

*Data analysis:* Data were entered in spreadsheet of SPSS software version 20.0 and analysis was done as required.

## Results

This descriptive study was conducted on 360 mothers having children of 0-23 months old, attending CMSDH. Of 360 children, 93.6% were administered colostrum. Colostrum giving practice was similar in boys and girls; it was less among mothers who delivered at private institutions (82.6%). Early initiation of breast feeding was more practiced among non-institutional deliveries, less common among mothers with high socioeconomic & educational status. Pre-lacteal feeding was more common among mothers with high socioeconomic & educational status and also among home deliveries.

Around 49.0% of 6-23 months old children had exclusive breast feeding (EBF) for 6 months, more among girls. Majority of 0-5 months old infants were exclusively breast fed (89.4%), the rest were predominantly breastfed. Risk factors for not practicing EBF were inadequate lactation, indicating lack of maternal health care, early age of marriage & early child birth. A total of 29.7% babies were bottle-fed in this study. Out of 152 exclusively breastfed children aged 0-5 months, majority (64.1%) were breastfed for 8 times or more per day.

And all of the children were ever breast fed. Only 33.3% children of 6-8 months of age were introduced solid, semi-solid or soft foods i.e. complementary feeding. Minimum meal frequency was observed in 70.0 % children of 6-23 months old. But minimum dietary diversity and minimum acceptable diet of 6-23 months old children were found to stand poorly at 30.0% and 36.8% respectively.

**Table-1: Distribution of study sample according to socio-demographic characteristics. N=360**

	Frequency	% age		Frequency	% age
<b>Age of the mother(Yrs)</b>			<b>Place of delivery</b>		
<19	9	2.5	Govt health facility	323	89.7
19-24	204	56.7	Private set up	23	6.4
25-30	126	35.0	Home	14	3.9
>30	21	5.8			
<b>Religion</b>			<b>Mode of delivery</b>		
Hindu	172	47.8	Normal delivery	167	46.4
Muslim	188	52.2	Caesarean section	193	53.6
<b>Residence</b>			<b>Age of children</b>		
Rural	40	11.1	0-5 month	170	47.2
Urban	320	88.9	6-23 months	190	52.8
<b>Type of family</b>			<b>Birth weight</b>		
Nuclear	138	38.3	Normal(=>2.5 Kg)	237	75.2
Joint	222	61.7	LBW(<2.5 Kg)	78	24.8
<b>Occupation of mother</b>			<b>Gender of newborns</b>		
Homemaker	343	95.3	Boys	169	47.0
Working	17	4.7	Girls	191	53.0
<b>Education of mother</b>			<b>No of siblings</b>		
Illiterate	46	12.8	Nil	203	56.4
Class I—IV	126	35.1	1	115	32.0
Class V—X	114	31.8	2	27	7.5
Class XI—XII	38	10.6	>2	15	4.1
Graduate and above	35	9.7			
<b>Socio-economic status (as per modified B.G.Prasad Scale 2016)</b>					
I(Upper Class)	3	.9			
II(Upper Middle)	43	12.5			
III(Lower Middle)	97	28.2			
IV(Upper Lower)	142	41.3			
V(Lower)	59	17.1			

**Table-2: Distribution of study sample according to various aspects of feeding practices**

Various aspects of feeding practices	Boys		Girls		Total	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
1. Pre lacteal feeding given (0-23 m) n=360	13 (7.7)	156 (92.3)	10 (5.2)	181 (94.7)	23 (6.8)	337 (94.1)
2. Colostrum given (0-23 m) n=360	159 (94.0)	10 (5.9)	178 (93.1)	13 (6.8)	337 (93.6)	23 (6.4)
3. EBF for 6 months (6-23 m) n = 190	42 (44.2)	53 (55.8)	51 (53.7)	44 (46.3)	93 (48.9)	97 (51.1)
4. Night feeding practice (0-5 months). n = 170	63 (85.1)	11 (14.9)	76 (79.2)	20 (20.8)	139 (81.8)	31 (18.2)
5. Timely introduction of complementary feeding at 6 months of age (6-23m). n= 190	39/95 (41.0)	56/95 (59.0)	26/95 (27.4)	69/95 (72.6)	65/190 (34.2)	125/190 (65.8)

**Table-3: Distribution of study sample according to WHO Indicators of Appropriate IYCF practices [13]**

Indicators	Definitions	Proportion
1. Early initiation of breastfeeding	Proportion of children born in the last 24 months who were put to the breast within one hour of birth	187/360 = 51.9%
2. Exclusive breastfeeding under 6 months:	Proportion of infants 0-5 months of age who were fed exclusively with breast milk	152/170 = 89.4%
3. Continued breastfeeding at 1 year	Proportion of children 12-15 months of age who are fed breast milk	31/43 = 72.1%
4. Introduction of solid, semi-solid or soft-food	Proportion of infants 6-8 months of age who receive solid, semi-solid or soft foods	7/21 = 33.3%
5. Minimum dietary diversity#	Proportion of children 6-23 months of age who receive foods from 4 or more food groups.	57/190 = 30.0%
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 not including milk feeds for non-breastfed children) the minimum number of times or more	For Breastfed Children 119/169 = 70.4%
		For Non- breastfed children 14/21 = 66.7%
7. Minimum Acceptable Diet:	Proportion of children 6-23 months of age who receive a minimum acceptable diet	For Breastfed Children 58/169= 34.3%
		For Non-breastfed children 12/21 = 57.1%
8. Children ever breastfed:	Proportion of children born in the last 24 months who were ever breastfed	360/360 = 100.0%
9. Continued breastfeeding at 2 years:	Proportion of children 20-23 months of age who are fed breast milk	31/45 = 68.9%
10. Predominant breastfeeding under 6 months:	Proportion of infants 0-5 months of age who are predominantly breastfed	18/170 = 10.6%
11. Bottle feeding:	Proportion of children 0-23 months of age who are fed with a bottle	107/360 = 29.7%

# The 7 food groups used for this indicator are --1.grains, roots and tubers 2.legumes and nuts3. Dairy products (milk, yogurt, cheese)4.flesh foods (meat, fish, poultry and liver/organ meats)5.eggs6. Vitamin- A rich fruits and vegetables 7.other fruits and vegetables.

## Minimum is defined as – a. 2 times for breastfed infants 6-8 months old except breast-feeding. b. 3 times for breastfed children 9-23 months except breast-feeding.c.4 times for non-breastfed children 6-23 months old.

### Discussion

In the current study 51.9% children were put on breastfeeding within one hour of birth compared to India or West Bengal figure (41.6% or 47.5% respectively) as found in NFHS-4 for children under 3 years [12, 14]. Also this practice was better than several other study findings [15-18]. One study from Shimla had similar finding (i.e.50.5%) on this practice [19]. Again the current study showed better practice of giving

colostrums to newborns compared to studies done in rural West Bengal and Chandigarh (93.6% vs 76.3% and 84.7% respectively); also pre-lacteal feeds were given to only 6.8% newborns in this study compared to worse finding from several other studies [15, 17, 20]. Only 48.9% children of 6-23 months old practiced EBF for six months compared to 58.3% in another study from rural West Bengal [15]. However, it was better than DLHS-4 finding of 34.2% children of 6-35

months old from West Bengal [21]. A few other studies found lower prevalence [18, 20].

In this study 89.4% of children under six months had EBF by 24-hour recall which is better than NFHS-4 findings for India as well as West Bengal (54.9% & 52.3% respectively) or several other studies [12,14,15-17]. However, one study from Shimla found better practice (94.9%) in this regard [19]. In the current study, 72.1% children continued breastfeeding at 1 year, better than the study from Shimla (50%) but similar to the study from Delhi; however there was better prevalence found in a study in West Bengal [15,17,19]. Only 33.3% children of 6-8 months of age were introduced solid, semi-solid or soft foods in the present study in comparison to several other studies which showed higher prevalence [15, 18-20]. For India and West Bengal the figure for the same is 42.7% and 52% respectively as found in NFHS-4 [12, 14].

The minimum dietary diversity was observed in only 30% children of 6-23 months in the present study, which is similar to the study from Delhi (32.6%) and Shimla (29.6%) but lower in comparison to 83.3% in the study from rural West Bengal [15,17,19]. Also children of same age group as above in the present study had minimum meal frequency of 70.4%(for breastfed) and 66.7%(for non-breastfed) compared to better practice of 87.5%or 78.5% as found in the study in West Bengal or Shimla respectively [15,19]. However, it was better than the study from Delhi, where minimum meal frequency was observed in 48.6% children of the same age group [17]. Minimum acceptable diet was found for 34.3% and 57.1% of breastfed and non-breastfed children of 6-23 months old respectively, better than the study in Delhi (19.7%) or NFHS-4 findings of 9.6% and 19.6% for the India and West Bengal respectively [12,14,17].

Also, 68.9% children in the present study continued breastfeeding at 2 years compared to overwhelmingly better practice (94.6%) in the study in rural West Bengal, though it was better than the study from Karnataka [15,18]. Regarding predominant breastfeeding under 6 months, the current study showed more prevalence (10.6%) than another study from West Bengal (7.1%) [15] and regarding bottle feeding, almost similar picture was found in the current study as several other studies [15-17, 19].

However, this study is not devoid of limitations. Though most of the questions asked to mothers pertained to the last 24 hours, there were other questions related to events farther in the past and chance of faulty recall or incorrect answering may have changed the results. Also, the study subjects were chosen by convenience sampling in a health care institution, so the sampling units may not be fully representative of the population and generalizability of the findings of this study is not beyond doubt. Thus, to conclude, IYCF practices among mothers are still sub-optimal in many aspects. These need to be addressed urgently for attaining healthy childhood while avoiding morbidities and premature death in the children. Training and mobilizing health workers towards counselling the mothers, especially in antenatal period, involving family members would run a long way to minimize this problem.

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