

Original Research Article

# Infant and young child feeding practices of mothers attending immunisation clinic at a tertiary care hospital of Lucknow

Mukesh Shukla<sup>1\*</sup>, Shantanu Tyagi<sup>2</sup>, Monika Agarwal<sup>3</sup>

<sup>1</sup>Senior Resident, Department of Community and Family Medicine, All India Institute of Medical Sciences, Patna, India

<sup>2</sup>Senior Resident, Department of General Surgery, MLB Medical College, Jhansi, India

<sup>3</sup>Associate Professor, Department of Community Medicine and Public Health, King George's Medical University, Lucknow, India

\*Corresponding author email: [drmukeshshukla@gmail.com](mailto:drmukeshshukla@gmail.com)

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## Abstract

**Background:** Adequate infant and young child feeding (IYCF) practices are essential to ensure optimal survival, health, growth, development and overall nutritional status of children.

**Objective:** The objective of the present study was to assess the IYCF practices among mothers with children aged 0-23 months attending immunisation clinic at a tertiary care hospital of Lucknow, capital of Uttar Pradesh.

**Materials and methods:** A hospital based cross-sectional study was conducted at immunisation clinic, King George's Medical University from January 2015 to September 2015. Systematic random sampling was used and a total of 240 mothers with children 0-23 months old attending immunisation clinic were interviewed with the help of pre-designed, pre-tested and semi-structured questionnaire.

**Results:** Breastfeeding (BF) was initiated within one hour of birth in 18.3% of children. Early initiation of BF was significantly associated with educational and socioeconomic status of mother and type of delivery. Pre-lacteal feeds were given to 23.4% of the children, children born at government health facility and with birth order  $\leq 2$  received pre-lacteal feeds more often. Colostrum was given by 67.9% of the mothers. Children born at private institutions or home were more likely to receive colostrum ( $p < 0.05$ ). The prevalence of exclusive breastfeeding for at least 6 months was 53.8%. It was higher in children belonging to low socioeconomic group ( $p < 0.05$ ). Complementary feeding was initiated at 6 months in 32.8% of children. Children of mothers belonging to upper socioeconomic

class, nuclear family and delivered at government institution through normal delivery were more likely to be started on timely complementary feeding ( $p < 0.05$ ).

**Conclusion:** The study revealed that inadequate IYCF practices are still quite prevalent in the community and therefore emphasis should be given to IYCF education sessions.

## Key words

IYCF, Immunisation clinic, Practices.

## Introduction

Although there has been a decline in the under-five child mortality in India, the rates are not sufficient enough to achieve the Millennium Development Goal 4 by 2015 [1]. Malnutrition is among the foremost cause of infant mortality in the developing countries like India. In India, the infant mortality rate (IMR) has declined to 40, but, still there is scope for improvement by providing better and comprehensive health care services [2]. The risk of death from diarrhoea and pneumonia increases about 7-fold and 5-fold respectively, among infants aged 0–5 month who are not breastfed as compared to those who are exclusively breastfed [3]. On the other hand, nonexclusive rather than exclusive breastfeeding among infants aged 0–5 month leads to more than 2-fold increased risk of dying from diarrhoea or pneumonia [4]. Apart from that it has been reported that optimal breastfeeding and complementary feeding are among the most cost-effective child survival interventions that could prevent, 13% and 6% respectively, of under-five child deaths [5, 6]. Infant and young child feeding, therefore need extreme attention of researchers and policy makers due to the fact that growth and development is maximum during early years of life and infant and young child feeding (IYCF) practices comprising both breastfeeding as well as complementary feeding is one of the major determinant of nutritional status of children.

The World Health Organization (WHO) and UNICEF have developed the Global Strategy for Infant and Young Child Feeding (IYCF) focussing on appropriate infant feeding practices in 2002 [7]. The national guidelines on IYCF came in 2006 with the aim to further enhance the

optimal IYCF practices [8]. The recent guidelines of infant and young child feeding are exclusive breast feeding for the first 6 months of life and initiating complementary foods at 6 months while continuing breast feeding up to the age of 2 years and beyond [9]. With this background present study was conducted to assess the IYCF practices among mothers with children aged 0-23 months attending immunisation clinical at a tertiary care hospital of Lucknow, capital of Uttar Pradesh.

## Material and methods

**Study Design:** Hospital-based cross-sectional study.

**Study Setting:** The study was conducted at immunisation clinic, Queen Mary Hospital, King George's Medical University, Lucknow.

**Study Population:** Mothers of the children in age group 0 – 23 months attending immunisation clinic.

**Sample Size:** Assuming 19.4% as the prevalence of exclusive breast feeding in children 0-5 months of age in Uttar Pradesh (according to District level Household and Facility Survey-3) [10] and an absolute precision of 5%, the total sample size required was calculated to be 240 (formula used:  $n = Z^2pq/e^2$ ; where  $n$  = sample size,  $z$  = value of standard normal deviate = 1.96 at 95% confidence interval (CI),  $p$  = prevalence of non-adherence,  $q = 1-p$ , and  $e$  = absolute precision) [11].

**Sampling:** During the study period of nine months from January 2015 to September 2015 the mothers of children aged 0-23 months attending the immunisation clinic were enrolled in the study using systematic random sampling. Children not accompanied with their mother

were excluded, as it would have given incorrect information about feeding practice of the child.

**Data Collection Tools:** A total 240 mothers of children aged 0-23 months attending the immunisation clinic were interviewed using pre-designed, pre-tested and semi-structured questionnaire after availing informed verbal consent. The questions consisted of domains including socio-demographic characteristics like name, age of mother and child, religion, type of family, years of formal education, socio economic status, type and place of last delivery and regarding IYCF practices like initiation of breastfeeding, exclusive breastfeeding, pre-lacteal feeds, colostrum intake, and initiation of complementary feeding.

**Data Processing and Analysis:** The information collected on the study schedule was transferred on the pre-designed classified tables and analysed according to the aims and objectives.

## Results

In the present study, about two-third of the children were aged less than one year (36.7% and 32.1% in age group 0-6 months and 7-12 months respectively). Boys constituted 58.3% while 41.7% were girls. Out of 240 mothers interviewed, majority (75.8%) belonged to socioeconomic class III or below according to modified B.G. Prasad socioeconomic classification. Majority (77.9%) of the mothers were educated maximum up to high school (11.2% were illiterate). About four-fifth (82.5%) of the mothers were of Hindu religion and 71.3% of the mothers were residing in the nuclear family. One-third (29.2%) of the mothers were working currently with majority of them were unskilled workers. Out of 240 children, 83.3% of the children were of birth order less than or equal to two. The delivery of most of the children were in government institution (45.4%) followed by private (40.8%) and home deliveries (13.8%). Majority (57.5%) of the births were through normal vaginal delivery. (**Table – 1**)

Out of 240 children, 44 (18.3%) were put on breastfeeding within an hour of birth. The

association between early initiations of breastfeeding was found to be statistically significant with educational status of mother, socio-economic status and type of delivery. The proportion of children who were breastfed earlier were quite high (37.7%) among mothers who were educated more than high school as compared to those who were less educated (12.8%). Apart from that only among 4.9% of the children belonging to low socioeconomic status (III or below) breastfeeding was initiated within one hour of birth. Breastfeeding was found to be delayed among children who were delivered through caesarean section (among 4.9% the breastfeeding was initiated earlier). (**Table - 2**) Colostrum was given by 67.9% of the mothers. Children born at private institution or home were more likely, 72.4% and 81.8% respectively, to receive colostrum ( $p=0.02$ ). Apart from that the mothers belonging to low socioeconomic status (III or below) were more likely feed colostrum to their children ( $p=0.03$ ). Pre-lacteal feeds were given to 23.4% of the children. Children born at government institution had comparatively more pre-lacteal feed (31.6%) than those who born at private institutions or home (17.4% and 18.2% respectively). Children of non-working mothers were more likely to receive pre-lacteal feed ( $p=0.03$ ). (**Table – 3**)

Initiation of timely complementary feeding and exclusive breastfeeding was studied in 152 children aged 6 months or more. Among these, 53.8% were exclusively breastfed for at least 6 months. Exclusive breastfeeding for at least six months was significantly more among children belonging to lower socioeconomic class (III or below). Complementary feeding was started at 6 months in 32.8% of children. Type of family, working status of mother, socioeconomic class and place and type of delivery were significantly associated with initiation of complementary feeding at 6 month of age. Timely initiation of complementary feeding was found more (60.6%) among the children belonging to comparatively higher socioeconomic class (I and II). (**Table – 4**)

**Table - 1:** Socio demographic characteristics of the study population. (N=240)

Characteristics	Number	Percentage (%)
<b>Age group of children (months)</b>		
0-6	88	36.7
7-12	77	32.1
13-24	75	31.3
<b>Gender</b>		
Male	140	58.3
Female	100	41.7
<b>Religion</b>		
Hindu	198	82.5
Non-Hindu	42	17.5
<b>Type of Family</b>		
Nuclear	171	71.3
Joint	69	28.3
<b>Level of education of mother</b>		
High school and below	187	77.9
More than high school	53	22.1
<b>Level of education of father</b>		
High school and below	173	72.1
More than high school	67	27.9
<b>Working status of mother</b>		
Working	70	29.2
Non-working	170	70.8
<b>Socio-economic status *</b>		
I and II	58	24.2
III and below	182	75.8
<b>Birth order</b>		
≤2	200	83.3
>2	40	16.7
<b>Place of delivery</b>		
Government institution	109	45.4
Private institution	98	40.8
Home	33	13.8
<b>Type of Delivery</b>		
Normal	138	57.5
Caesarean	102	42.5

\*Modified B.G. Prasad socioeconomic classification 2014

## Discussion

The present study was conducted at immunisation clinic of a tertiary care hospital of Lucknow to assess the infant and young child feeding practices. Out of total studied children, only 18.8% were put on breast feeding within an

hour of birth, which is quite similar to that reported in national surveys like DLHS-3 and NFHS-3 (15.4% in Uttar Pradesh and 23.4% in India respectively) [10, 12, 13]. A study conducted by Gupta, et al. in urban slums of Lucknow reported quite similar findings [14].

However the figures were much lower than those reported in other studies [15, 16]. The proportion of children born in health facility were more likely to be breastfed (18.3% for government and 22.4% for private) earlier than those born at home; a finding consistent to NFHS-3 [12].

**Table - 2:** Factors associated with early initiation of breastfeeding. (N=240)

Variable	Total Number	Early initiation of breastfeeding <sup>#</sup>		p
		Number(n=44)	Percentage	
<b>Gender of child</b>				
Male	140	28	20.0	0.43
Female	100	16	16.0	
<b>Type of family</b>				
Nuclear	171	33	19.3	0.54
Joint	69	11	15.9	
<b>Birth order</b>				
≤2	200	37	18.5	0.58
>2	40	7	17.5	
<b>Educational status of mother</b>				
High school and below	187	24	12.8	<b>0.00</b>
Above high school	53	20	37.7	
<b>Current Employment Status of mother</b>				
Working	70	12	17.1	0.76
Not working	170	32	18.8	
<b>Socioeconomic class*</b>				
III and below	182	9	4.9	<b>0.00</b>
I and II	58	35	60.3	
<b>Place of Delivery</b>				
Government	109	20	18.3	0.10
Private	98	22	22.4	
Home	33	2	6.1	
<b>Type of Delivery</b>				
Normal	138	39	28.3	<b>0.00</b>
Cesarean	102	5	4.9	

<sup>#</sup> Within an hour of birth

Early initiation of breastfeeding was found to be statistically associated with education of mother, socioeconomic status and type of delivery. A study conducted by Gupta et al in an urbanized village of Delhi reported similar findings [16]. Similar to the present study, other studies also reported caesarean section consistently as negative factor for early initiation of breastfeeding [16, 17, 18]. Colostrum was given to 67.9% of the children which was quite lower to that observed in other studies [16, 17, 19]. The feeding of colostrum was observed to be higher

in private institutional births and home based deliveries as compared to the government institutions. Lack of provision of information about colostrum to the mothers immediately after the child might be the reason for low intake of colostrum in government institutions. Pre-lacteal feeds were given by 23.4% of the mothers, which was quite lower to that reported in other studies [12, 16]; but higher to that reported by Davalgi, et al. [20]. Increase in level of awareness and preference of mothers towards the institutional deliveries might be the reason for decrease in

intake of pre-lacteal feeds. The mothers with birth order less than or equal to two were more likely to give pre-lacteal feed to their children. Exclusive breastfeeding for at least six months was done by 53.8% of the mothers, which was much higher to that reported as per DLHS-3 for Uttar Pradesh and NFHS at national level [16, 20].

**Table – 3:** Factors associated with giving pre-lacteal feeds and colostrum feeding. (N=240)

Variable	Colostrum		Pre-lacteal feed	
	Given(n=163)	p	Given (n=56)	p
<b>Gender of child</b>				
Male (n=140)	96 (68.6%)	0.71	36 (25.7%)	0.30
Female (n=100)	67 (67.0%)		20 (20.0%)	
<b>Type of family</b>				
Nuclear (n=171)	118 (69.0%)	0.56	38 (22.2%)	0.50
Joint (n=69)	45 (65.2%)		18 (26.1%)	
<b>Birth order</b>				
≤2 (n=200)	136 (68.0%)	0.95	56 (28.0%)	<b>0.00</b>
>2 (n=40)	27 (67.5%)		0 (0.0%)	
<b>Educational status of mother</b>				
High school and below (n=187)	132 (70.6%)	0.09	44 (23.5%)	0.80
Above high school (n=53)	31 (58.5%)		12 (22.6%)	
<b>Current Employment Status of mother</b>				
Working (n=70)	50 (71.4%)	0.45	10 (14.3%)	<b>0.03</b>
Not working (n=170)	113 (66.5%)		46 (27.1%)	
<b>Socioeconomic class*</b>				
III and below (n=182)	130 (71.4)	<b>0.03</b>	38 (20.9%)	0.10
I and II (n=58)	33 (56.9)		18 (31.0%)	
<b>Place of Delivery</b>				
Government (n=109)	65 (59.6%)	<b>0.02</b>	31 (31.6%)	<b>0.04</b>
Private (n=98)	71 (72.4%)		19 (17.4%)	
Home (n=33)	27 (81.8%)		6 (18.2%)	
<b>Type of Delivery</b>				
Normal (n=138)	89 (64.5%)	0.18	33 (23.9%)	0.80
Cesarean (n=102)	74 (72.5%)		23 (22.5%)	

The proportion of mothers in low socioeconomic status who exclusively breastfed their child was about double as compared to mothers of higher socioeconomic group. This might be attributed to the fact that due to lack of financial resources the mothers of low socioeconomic status are more likely to prefer exclusive breastfeeding. About 32.8% of children were started on complementary feeding at 6 months of age. This is much lower than 54.5% reported in DLHS-3

[10] and 55% reported in NFHS-3 [12]. In the present study complementary feeding was found to be started comparatively late among children who were delivered through caesarean section. Timely initiation of complementary feeding was found to be comparatively more (60.6%) in higher socioeconomic group. This might be attributed to the fact that upper socioeconomic group had more resources in all terms to initiate complementary feeding timely.

**Table - 4:** Factors associated with exclusive breastfeeding for at least 6 months and initiation of complementary feeding at 6 months of age. (N=152)\*\*

Variable	Exclusive breastfeeding for at least 6 months		Complementary feeding started at 6 months age	
	Given (n=83)	p	Given (n=50)	p
<b>Gender of child</b>				
Male (n=94)	50 (53.2%)	0.65	30 (31.9%)	0.74
Female (n=58)	33 (56.9%)		20 (34.5%)	
<b>Type of family</b>				
Nuclear (n=107)	55 (51.4%)	0.22	42 (39.3%)	<b>0.01</b>
Joint (n=45)	28 (62.2%)		8 (17.8%)	
<b>Birth order</b>				
≥2 (n=126)	66 (52.4%)	0.22	40 (31.7%)	0.50
>2 (n=26)	17 (65.4%)		10 (38.5%)	
<b>Educational status of mother</b>				
High school and below (n=119)	62 (52.1%)	0.23	38 (31.9%)	0.63
Above high school (n=33)	21 (63.6%)		12 (36.4%)	
<b>Current Employment Status of mother</b>				
Working (n=47)	27 (57.4%)	0.63	9 (19.1%)	<b>0.01</b>
Not working (n=105)	56 (53.3%)		41 (39.0%)	
<b>Socioeconomic class*</b>				
III and below (n=119)	29 (87.9%)	<b>0.00</b>	30 (25.2%)	<b>0.00</b>
I and II (n=33)	54 (45.4%)		20 (60.6%)	
<b>Place of Delivery</b>				
Government (n=66)	38 (57.6%)	0.11	29 (43.9%)	<b>0.02</b>
Private (n=63)	37 (58.7%)		20 (31.7%)	
Home (n=23)	8 (34.8%)		1 (4.3%)	
<b>Type of Delivery</b>				
Normal (n=87)	52 (58.9%)	0.13	41 (47.1%)	<b>0.00</b>
Caesarean (n=65)	31 (47.7%)		9 (13.8)	

\*\*Children aged ≥6 months

## Conclusion

The study revealed that inappropriate infant and young child feeding practices are still very much prevalent in the community. Early initiation of breast feeding was seen in only 18.3% of the children. Pre-lacteal feeds were given to about 23.4% of the children. About one-third (32.1%) of the children didn't receive colostrum. Exclusive breastfeeding for at least 6 months was seen in only half (53.8%) of the children while

complementary feeding was initiated timely in only 32.8% of the children.

## Limitations

The study was conducted at immunisation clinic of a tertiary care hospital situated in Lucknow; therefore the generalizability of the study is limited. Apart from that included mothers with children who were health conscious, coming to the centre for immunization of their children.

## Recommendations

Mothers along with the caregivers and family members should be educated during all possible contacts about appropriate infant and young child feeding practices and its role in maintenance and restoration of the child health. The communication between nursing mothers with the healthcare providers in both public as well as private sectors should be made more frequent and interactive to ensure more sustainable and efficient infant and child care practices.

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