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Newborn Feeding Practices in the Rural Population of North India

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Abstract

Background: WHO recommends initiation of breastfeeding within the first hour after birth and exclusive breastfeeding? Delayed initiation of breastfeeding was found to be associated with increased mortality among newborns.

Objectives: To assess the newborn feeding practices of mothers and to assess the knowledge of mothers on breastfeeding.

Methods: The cross-sectional study was carried out in randomly selected villages of the Muradnagar Block of Ghaziabad district, Uttar Pradesh. A total of 300 mothers of infant from one month to six months of age were interviewed in a house-to-house survey. A study instrument was used to collect data. Chi-square test was used to analyze the data.

Results: Most mothers were educated up to middle school (45.7%), belonged to Hindu religion (74.7%) and socio-economic class IV. Only 62.7% mothers initiated breastfeeding within one hour of birth and 54.3% had knowledge of early initiation of breastfeeding. Demand feeding was practiced by 54% mothers. Although 74.3% of the mothers had knowledge of exclusive breastfeeding but only 47.3% mother practiced it. Only 54% mothers had knowledge that colostrum provides immunity to the newborn and 58.3% of mothers practised feeding colostrum to their newborn. Many children received pre-lacteal feeds (46%).

Conclusions: Exclusive breastfeeding was not practiced by most of the mothers. There is a need to improve the newborn feeding practices by designing activities that motivates mothers to adopt healthy newborn feeding practices.

Keywords: Breastfeeding; Newborn; Pre-lacteal feeds; Colostrum; demand feeding

Introduction

The first month of life is the most crucial period in the life of an infant.

To boost newborn survival, postnatal care delivers essential and evidence-based interventions which include breastfeeding within one hour of birth and the reinforcement of exclusive breastfeeding practices messaging among families and caregivers.

All newborn that cry soon after birth and do not show any signs of illness must be kept with their mothers. This will ensure warmth, initiation of breastfeeding and emotional bonding. WHO recommends initiation of breastfeeding within the first hour after birth and exclusively feeds up to two years of age or beyond? Delayed initiation of breastfeeding was found to be associated with increased neonatal mortality. A study by Madhu on newborn care practices in rural Karnataka studied 100 mothers with infants aged 9 months who visited a primary health care centre for a period of four months and found that 90% of the deliveries were hospital deliveries and 10% were home deliveries. It was noted that 97% of the mothers went for at least two antenatal check-ups and 44% of the mothers initiated breastfeeding within 30 minutes with home delivery and 38% with Caesarean section. A total of 19% of the mothers in this study didn't breastfeed even after 24 hours after the delivery and discarded colostrum. In this study, 13% of the babies were fed only sugar water for more than 48 hours. Honey (6%) and ghee (3%) were also used pre lacteal feed.

Material and Methods

A community based cross-sectional study was carried out in eight villages of the Muradnagar block of Ghaziabad district, Uttar Pradesh. These eight villages were selected by multistage sampling method in the Ghaziabad district. The study participants were mothers of infant of one month to six months of age. The participants were interviewed in a house-to-house survey. A total of 300 mothers of infant of one month to six months of age in the selected area were interviewed.

Semi-structured study schedule for in-depth interview of the mother of the children was used as the tool for data collection. All respondents were briefed about the need and objectives of the study and consent to participate in this study were taken from them. The respondents were interviewed to record the various socioeconomic variables and the knowledge and practice of the mothers regarding newborn feeding.

Modified B.J. Prasad's classification was applied to measure the individual's socioeconomic status.

The data will be collected and entered in MS Excel 2020 (version 16). Different statistical analysis was performed using SPSS software version 16. Descriptive statistics was calculated for qualitative and categorical variables. Graphical representation of the variable was shown to understand the results clearly. To measure the association for categorical, dataset was analyzed using Chi-Square test. If p value <0.05, considered as statistically significant and if p-value>0.05, then it is statistically insignificant.

Result

(Table 1) shows the distribution of the mothers of the children who were interviewed according to age.

Maximum number of mothers falls in the age group of 21 to 25 years, 136 (45.3%). Followed by 26 to 30 years, 113 (37.7%) and more than 30 years of age, 38 (12.7%). Only 13 (4.3%) mothers were less than 20 years of age. The mean age of the mothers was 26 years with a standard deviation of 4.18. Majority of the mothers did schooling up to middle school, 137 (45.7%) followed by 75 (25%) mothers who had completed intermediate. Only 37 (12.3%) mothers were graduated. Also, 25 (8.3%) mothers attended primary school and 13 (4.3%) attended high school. Only, 13 (4.3%) mothers were illiterate. Out of 300, 287 (95.7%) of the mothers were homemakers. Only 7 (4.3%) mothers were working and among those 2.3% mothers were labourer and 6 (2%) of mothers had a private job.

Table1: Distribution of mother and father of the children according to the demographic variables (n=300).

Sl. No.	Demographic variables	Mother (%)
1	Age (in years)	
	< 20	13 (4.3)
	21-25	136 (45.3)
	26-30	113 (37.7)
	>30	38 (12.7)
2	Literacy Status	
	Illiterate	13 (4.3)
	Primary	25 (8.3)
	Middle	137 (45.7)
	High School	13 (4.33)
	Intermediate	75 (25.0)
	Graduate	37 (12.3)
3	Occupation	
	Homemaker	287 (95.7)
	Labourer	7 (2.3)
	Farmer	0
	Business	0
	Semi-Skilled	0
	Skilled	0
	Semi-profession or profession	6 (2.0)

Table2: shows that majority of the mothers were Hindu 224 (74.7%) and 76 (25.3%) were Muslims.

It shows 186 (62%) mothers belonged O.B.C. caste, 63 (21%) belonged to general caste and 51 (17%) were SC/ST. Majority of the mothers belonged to the joint family 164 (54.7%) followed by nuclear family 99 (33%). Least number of mothers belonged to a three-generation family 12.3 (12.3%). Also 112 (37.3%) families belonged to Social Class IV followed by 88 (29.3%) belonging to Class II. None of the families belonged to Class I and 17% belonged to Class V and 16.3% belonged to Class III

Table2: Distribution of the mothers according to social variables (n=300).

Sl. No.	Social variables	Number	Percentage (%)
1	Religion		
	Hindu	224	74.7
	Muslim	76	25.3
2	Caste		
	General	63	21
	O.B.C.	186	62
	SC/ST	51	17
3	Type of family		
	Nuclear	99	33
	Joint	164	54.7
	3 generation	37	12.3
4	Social Class		
	II	88	29.3
	III	49	16.3
	IV	112	37.3
	V	51	17
	Total	300	

Table 3 shows depicts that 163 (54.3%) mothers had knowledge of early initiation of breastfeeding after birth and 137 (45.7%) mothers had no knowledge regarding early initiation of breastfeeding after birth. More than one-third of mothers (112) said that a newborn should be fed whenever the child demands (37.3%) followed by 110 (36.7%) mothers who think 8 to 10 feedings per day is sufficient for a newborn child. Whereas 39 (13%) mothers said a newborn requires less than eight feeds in a day. Remaining 39 (13%) of mothers did not know about number feeds should be given to a newborn in a day. In the present study only 223 (74.3%) mothers had knowledge of exclusive breast eeding and remaining 77 (25.7%) mothers were unaware of exclusive breast eeding.

Table3: Distribution of the mothers according to knowledge regarding breastfeeding a newborn (n=300).

Sl. No.	Knowledge regarding breastfeeding	Number	Percentage (%)
1	**Early initiation of breastfeeding**		
	Aware	163	54.3
	Did not know	137	45.7
2	**Adequate frequency of feeding a newborn**		
	Demand feed	112	37.3
	8 to 10 times	110	36.7
	Less than 8 times	39	13.0
	Did not know	39	13.0
3	**Knowledge of exclusive breastfeeding**		
	Aware	223	74.3
	Did not know	77	25.7
4	**Breastfeeding during newborn illness**		
	Should be given	63	21.0

	Should not be given	173	57.7
	Did not know	64	21.3
5	**Advantages of colostrum (multiple response)**		
	Provides immunity	162	54.0
	Prevents constipation	12	4.0
	Did not know	138	46.0
6	**Advantages of breastfeeding (multiple response)**		
	Protection from diseases	187	62.3
	Nutritious	175	58.3
	Prevent diarrhea	73	24.3
	Promotes mother and child bonding	25	8.3
	All of the above	25	8.3
	Did not know	76	25.3
7	**Danger of bottle-feeding**		
	Risk of infection	26	8.7
	Diarrhoea or vomiting	49	16.3
	Poor digestion	24	8.0
	No danger	63	21.0
	Do not know	138	46.0

Only 63 (21%) mothers were aware that a newborn should be given breastfeed during illness while majority of the 173 (57.7%) mothers said a newborn should not be breastfed during illness. Around 64 (21%) mothers did not know about breastfeeding during newborn illness.

Only 162 (54%) mothers had knowledge that colostrum provides immunity to the newborn and 138 (46%) mothers had no knowledge of advantage of colostrum feeding. Twelve (4%) mothers said colostrum prevents constipation. Majority of the 187 (62.3%) mothers had knowledge that breastfeeding prevents diseases followed by 187 (58.3%) mothers who knowledge of breastmilk nutritious for the child. Around one-fourth (73) of mothers had knowledge that that breastfeeding prevents diarrhoea (24.3%), 25 (8.3%) promotes mother and child bonding and all the above advantages were known to 25 (8.3%) mothers. Around 76 (25.3%) of mothers did not have any knowledge about the advantages of breastfeeding for the newborn.

Majority of 138 (46%) mothers were unaware of disadvantages of bottle feeding for a child followed by 63 (21%) mothers who considered use of bottle feeding is safe for the newborn. Overall 49 (16.3%) mothers were aware of the risk of diarrhoea (16.3%) and 26 (8.7%) of infection to the newborn from bottle feeding. Least number of mothers said that bottle-feeding can cause poor digestion in the newborn (24, 8%).

The table 4 shows that 188 (62.7%) of mothers initiated breastfeeding within one hour of birth followed by 61 (20.3%) mothers who breastfed within post one hour after birth and the first 24 hours after birth. Around 26 (8.7%) mother's breastfeed one day after birth and 25 (8.3%) mothers did not breastfeed their newborn.

Table4: Distribution of the mothers according to newborn feeding practices (n=300).

Sl. No.	Feeding practices	Number	Percentage (%)
1	**Initiation of breastfeeding**		
	Within 1 hour of birth	188	62.7
	After 1 hour of birth but on same day	61	20.3
	After one day	26	8.7
	Not breastfeed	25	8.3

2	**Reasons for late/no initiation of breastfeeding (N=112)**		
	Caesarean section	36	32.1
	Discomfort/difficulty to the mother	38	33.9
	Poor sucking	13	11.6
	No breastmilk secretion	25	22.3
3	**Feeds given in a day**		
	Demand feeding	162	54
	8 to 10 feeds	113	37.7
	< 8 feeds	25	8.3
4	**Feeding at night**		
	Practised	226	75.3
	Not practised	74	24.7
5	**Exclusive Breastfeeding**		
	Practised	142	47.3
	Not practised	158	52.7
6	**Colostrum feeding**		
	Practised	175	58.3
	Not practised	125	41.7
7	Reasons for not giving colostrum (n=125)		
	Lack of milk secretion	38	30.4
	Caesarean section	37	29.6
	Social custom	37	29.6
	Lack of awareness	13	10.4
8	**Pre-lacteal feeds**		
	Not given	162	54
	Formula milk	64	21.3
	Cow milk	38	12.7
	Ghutti	24	8
	Honey	12	4
9	**Reasons for giving pre-lacteal feeds (N=138)**		
	Caesarean section	39	28.3
	No or less breastmilk secretion	37	26.8
	Social custom	25	18.1
	Improves digestion for newborn	24	17.4
	Difficulty during breastfeeding	13	9.4
10	**Bottle-feeding**		
	Not Practised	198	66
	Practised	102	34
11	**Reasons for using bottle feed (N=102)**		

	Insufficient breastmilk	90	88.2
	Convenient	12	11.8

In the present study 112 mothers practised late or no initiation of breastfeeding. Among these 38 (33.9%) mothers were not able to breastfeed due to discomfort or difficulty during process breastfeeding followed by 36 (32.1%) mothers who had caesarean section, lack of breastmilk secretion by 25 (22.3%) and least common reason given by 13 (11.6%) mothers for late or no initiation of breastfeeding was poor sucking by the newborn.

The data shows that 162 (54%) mothers practised demand feeding for their children followed by 133 (37.7%) mothers gave 8 to 10 feeds in a day to their children during the first month of their lives. But 25 (8.3%) mothers gave less than eight feeds per day to the child.

Around one-fourth mothers (74) did not practice feeding newborn at night (24.7%) while rest 226 (75.3%) mothers practised feeding newborn at night.

Mothers who practiced exclusive breastfeeding were 142 (47.3%) and 158 (52.7%) mothers did not practice exclusive breastfeeding.

The data depicts that only 175 (58.3%) of mothers practised feeding colostrum to their newborn and 125 (41.7%) did not practised the same. Out of 125 mothers who did not practice colostrum feeding, 38 (30.4%) of mothers did so due to lack of milk secretion followed by 37 (29.6%) due to caesarean section. Social custom prevented 37 (29.6%) mothers and lack of awareness prevented 13 (10.4%) mothers from practising colostrum feeding.

Majority of the 162 (54%) mothers did not give pre-lacteal feeds to their newborns followed by 64 (21.3%) of mothers who gave formula milk to the newborn. Other pre-lacteal feeds given to the newborns by mothers were 38 (12.7%) gave cow's milk, 24 (8%) gave ghutti and 12 (4%) honey.

In the present study 138 newborns received pre-lacteal feeds. Majorly due to caesarean section of the 39 (28.3%) mothers followed by decreased or lack of breastmilk secretion in 37 (26.8%) mothers. Social custom followed by 25 (18.1) mothers, 24 (17.4%) to improve of newborn's digestion and difficulty during breastfeeding reported by 13 (9.4%) mothers as reason for giving pre-lacteal feed to their children.

The present study shows 102 (34%) mothers practised bottle feeding. Out of these 102 mothers, 90 (88.2%) mothers practised bottle feeding due to lack of breastmilk secretion or insufficient milk secretion and 12 (11.8%) did so because it was convenient.

Discussion

In the present study, 54.3% mothers had knowledge of early initiation of breastfeeding after birth. Only 21% mothers agreed that newborn should be given breastfeed during illness [Table 3]. In Rama 48% mothers had knowledge of early initiation of breastfeeding after birth and 33% mothers had knowledge of exclusive breastfeeding. Similarly in the study by Devasenapathy, 58% mothers were aware about initiating breastfeeding within one hour of birth.[6,7] More than one-third of mothers said that a newborn should be fed whenever the child demands (37.3%) followed by 36.7% mothers who think 8 to 10 feedings per day is sufficient for a newborn child. In the present study 74.3% mothers had knowledge of exclusive breastfeeding. Only 21% mothers were aware that a newborn should be given breastfeed during illness.

Only 21% mothers were aware that a newborn should be given breastfeed during illness while majority of the (57.7%) mothers said a newborn should not be breastfed during illness. Around 21% mothers did not know about breastfeeding during newborn illness. [Table3]. Similarly in study by Abeba shows nearly half of the women whose babies were sick during the neonatal period had either lower or the usual levels of breastfeeding during the illness period.

The present study shows that half of the mothers had poor knowledge of benefits of breastmilk for a child since only 54% mothers knew that colostrum provides immunity to the newborn and 62.3% mothers had knowledge that breastfeeding prevents diseases, nutritious for the child (58.3%), breastfeeding prevents diarrhea (24.3%), promotes mother and child bonding (8.3%) and all the above advantages (8.3%). Majority of 46% mothers were unaware of disadvantages of bottle feeding for a child followed by 21% mothers who considered use of bottle feeding is safe for the newborn

In the present study, 62.7% mothers initiated breastfeeding within one hour of birth. In Dhir initiation of breast milk was less than one hour in 753 (78%) mothers and pre-lacteal feeds were administered in 70% of the children. In a population-based cross-sectional study by Lyngdoh conducted in rural villages of UP, it was found that 49.5% respondents initiated breastfeeding within one hour of birth.

Table 4 shows that 62.7% of mothers initiated breastfeeding within one hour of birth followed by 20.3% mothers who breastfed within post one hour after birth but within first 24 hours after birth. Around 8.7% mother's breastfeed one day after birth and 8.3% mothers did not breastfeed their newborn. In the present study mothers who practised late or no initiation of breastfeeding, 33.9% of them were not able to breastfeed due to discomfort or difficulty during process breastfeeding followed by 32.1% mothers who had caesarean section, lack of breast milk secretion by 22.3% and least common reason given by 11.6% mothers for late or no initiation of breastfeeding was poor sucking by the newborn. In the study by Devasenapathy 48.6% mothers initiated breastfeeding within one hour of birth.

The data shows that 54% mother's practised demand feeding for their children followed by 37.7% mothers gave 8 to 10 feeds

in a day to their children during the first month of their lives. In a cross-sectional study by Gandhi conducted in a rural area of Gujarat, it was found that 93% mothers practiced feeding the newborn on demand. In a cross-sectional study by Saaka in Ghana, it was found that 73.7% mothers practiced adequate newborn feeding.

Around one-fourth mothers did not practice feeding newborn at night (24.7%) while rest 75.3% mothers practised feeding newborn at night.

In the present study, 54% practised exclusive breastfeeding and only 58.3% mothers practised feeding colostrum to their newborn. In a population-based cross-sectional study by Lyngdoh conducted in rural villages of UP, it was found that 83.1% respondents fed colostrum to their newborns. In the study by Devasenapathy 78.7% participants practiced feeding colostrum to their newborn. In the study by Mani only 27.8% children were given colostrum and 55.8% mothers practised EBF. In a cross-sectional study by Gandhi conducted in a rural area of Gujarat, it was found that 90.9% mothers practiced giving colostrum to the newborn. In a community based cross-sectional study by Alemu conducted in rural district of Ethiopia, it was found that 57.2% of the lactating mothers practiced EBF. Only 14.1% mothers gave colostrum to their newborn.

In the present study, 54% mothers did not give pre-lacteal feeds to their newborns. In a cross-sectional study by Gandhi conducted in a rural area of Gujarat, it was found that 32.1% mothers gave pre-lacteal feeds to the newborn.

The present study shows 34% mothers practised bottle feeding. Out of these 88.2% mothers practised bottle feeding due to lack of breast milk secretion or insufficient milk secretion and 11.8% did so because it was convenient. As per NFHS-4, only 5.8% children of less than 2 months of age were using a bottle with a nipple (NFHS-5 is completed but results are not yet published or available on internet).

Demand feeding was more prevalent in this study. Exclusive breastfeeding was not practiced by majority of the mothers although most of them were aware about it. This could be due to in caesarean sections, insufficient breast milk, lack of proper breastfeeding technique etc.

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