



## Determinants of pre-lacteal feeding among mothers of newborn: Evidence from a Hospital based cross-sectional at district Mahendragarh, Haryana

### KEYWORDS

Pre-lacteal feeding, Breastfeeding, Infant and young child feeding practices

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### ABSTRACT

**Background:** Despite mass media campaign about the importance of exclusive breast feeding and colostrum, pre lacteal feeding is still the common social norms across different parts of India. There are several factors which hinders early initiation and exclusive breastfeeding. Present study examined the factors associated with pre-lacteal feeding among mothers of newborn living in a district of Haryana, India. **Material & Methods:** A cross sectional study was conducted in 3 hospitals of Haryana district for the duration of six months in the year 2013. Data from 576 mother- new born pair was collected. Multivariate logistic regression analyses were used to examine factors associated with pre-lacteal feeding. **Results:** During the first 24 hours after birth, 209 (36.9%) of the newborns were given pre-lacteal feeding in various form. Most common type of pre-lacteal feed was animal milk (56.9 %) followed by holy water (22.5 %). Factors increasing the odds of pre-lacteal feeding included delivery by caesarean section, living in joint family, first time mothers and delivering a male child. **Conclusions:** Reducing the prevalence of pre-lacteal feeding can be achieved by improving knowledge and confidence of mothers and family members through appropriate counseling and support.

### INTRODUCTION

Breast-feeding is the only the natural way of feeding a newborn. Mothers of a newborn are therefore encouraged to exclusively breastfeed their babies for a period of at least 6 months<sup>1</sup>. As per the guidelines, after a vaginal delivery breast feeding should be initiated within half to one hour of birth instead of waiting several hours as is currently followed by many mothers across the country. The first milk, i.e. the "colostrum" is the most suitable food for the baby immediately after birth because it contains a high concentration of protein, immunoglobins and other vital nutrient that newborn needs; the immunoglobins act as an anti-infective factors which protect the baby against various infections<sup>2</sup>. Pre-lacteal feeds are defined as any kind of foods given to newborns before breastfeeding is established or before breast milk "comes in," usually on the first day of life<sup>2</sup>. One of the reason for pre-lacteal feeding is the common belief that breast milk is secreted mostly by the second or third day after birth, and hence pre-lacteal feeds are given to a newborn for fear that he/she may be hungry since birth or become dehydrated<sup>3</sup>. There are various social belief for which pre-lacteal feeds are given including that they act as laxatives, cleansing agents or hydrating agents or as a mean of clearing the meconium<sup>4,5</sup>. Giving pre lacteals to a newborn may be in the context of a ritual whereby the person administering the pre lacteals holds an elevated status within the family or community<sup>6</sup>. Pre-lacteal feeding has been associated with poor neonatal and infant health outcomes, including increased risk of illness and possibly even mortality<sup>4,5,6</sup>. By interfering with breastfeeding during early neonatal period, pre-lacteal feeding diminishes the immunological benefits a newborn receives, thus increasing his/her susceptibility to infection. In addition, pre-lacteal feeding can directly lead to illness by exposing infants to contaminated feeds, utensils, water, or hands. Pre-lacteal feeding may also affect neonatal health by disrupting the priming & maturation of gastrointestinal tract<sup>7</sup>. Further, mother-infant bonding may be in-

terrupted by pre-lacteal feeding as it prevents skin-to-skin contact between a mother and her baby, thus increasing the chances of hypothermia among newborns.

Pre-lacteal feeds such as honey, sugar-water, jaggery water, castor oil, goat's milk are commonly given in many developing countries including India which carries potential risk of infection and aspiration<sup>4</sup>. Administration of these feeds interferes with sucking and prolactin production and ultimately undermines the mother's confidence in her ability to breast feed<sup>7</sup>. WHO/UNICEF strongly discourages the traditional practice of pre-lacteal feeding unless medically indicated<sup>8</sup>. The use of honey as a pre-lacteal deserves special mention. Honey is a known source of the heat resistant organism *Clostridium botulinum*, which can lead to infant botulism<sup>6, 8</sup>. Introduction of pre-lacteal feeds is a known barrier to continuation of exclusive breastfeeding. By definition, a child provided with pre-lacteal feeds is not exclusively breastfed. In depth knowledge of practice and determinants of pre-lacteal feeds is thus essential to promote exclusive breastfeeding and early initiation of breastfeeding<sup>9</sup>. As per the surveys done time after time prevalence of pre-lacteal feeding is very high in India and it varies from state to state and also within a state<sup>8</sup>. The practice of offering pre-lacteal feeds to the newborns is at minimal level in the states of Kerala (10.8%), Sikkim (12.3%) and Arunachal Pradesh (16.7%). The prevalence of pre-lacteal feeding is highest in Bihar (90.6%), followed by Uttar Pradesh (86.0%), Rajasthan (71.6%) and Jharkhand (66.3%)<sup>10</sup>. Present study was conducted to determine the practices of pre-lacteal feeding/breastfeeding and determinants of pre-lacteal feeding among mothers of an early neonates in selected health facility Mahendragarh district of Haryana.

**Material and Methods: Study design:** This was a cross sectional study **Setting:** The present study was conducted upon subjects (mothers) living in both rural and urban

areas of a district Mahendragarh, Haryana. Present study was conducted among women who delivered at one private and two primary health centre of the district Mahendragarh. The total duration of study was 6 month, starting from May 2013 to October 2013. The period of data collection was 4 months. The data for the study was collected during the period of postpartum stay of the women at the hospital/ primary health centre. **Participants:** All the women delivering at the selected health center/hospital. **Inclusion criteria:** 1 Women admitted at the selected centres during the postpartum stay on the day of data collection. 2. Women/husband/ relative who gave valid informed consent for study. 3. Women who had delivered at least 24 hours before data collection. **Exclusion criteria:** 1 Women who delivered a still born child 2. Women with intra- uterine fetal death. 3 Newborn who were given oral medicine when medically indicated. 4. Women whose newborn was admitted to Sick Newborn Care Unit /Neonatal Intensive Care Unit after birth. **Variables:** The main outcome variable was the prevalence of pre-lacteal feeding among study participants. **Pre-lacteal feeding definition:** For the purpose of study pre lacteal feeding was defined as feeding newborn anything other than breast milk within 24 hours after birth. **Data sources: Study tool:** The data was collected with the help of a pre designed and pretested questionnaire. Guidelines for breastfeeding as advised by the WHO, UNICEF and government of India were properly studied and a proper literature search on the subject was conducted. **Study tool development:** Prominent studies conducted earlier on the topic were shortlisted and studied in detail. The selections of potential determinants of pre-lacteal feeding were guided by these studies<sup>11-16</sup>. There after a questionnaire was constructed to include the entire variable that can influence the study outcome. The questionnaire was first pretested on 30 women (10 from each centre) delivering at selected study centres, thereafter necessary modifications were done. The final version of questionnaire had a reliability of 0.92. The questionnaire was translated into local language with the help of ASHA worker and the responses were again translated into English. The source of data/information was either mother or father of newborn. The questionnaire collected information on demographic variables, and variable related to breast feeding which included knowledge about exclusive breast feeding among both parents, conceptions & beliefs about social norms related to breast feeding, time of initiating breastfeeding, reason for delay in breastfeeding and practices of pre-lacteal feeding if any, content of pre-lacteal feeding and reasons for it. **Mode of data collection:** Data was collected by first and third author. The father/ mother or relative were informed about the purpose of study and their role in it. Valid informed consent from either mother or father was taken before collecting data for study. No monetary compensation was given to study participants for their involvement. The present study was conducted on all mothers full filing the inclusion criteria during the period of data collection. Following this present study included 576 mother and newborn pair. **Data Collection:** The data from each health centre was collected on a fixed day once a week. The study was approved by the ethical committee of the hospital at which it was conducted.

Data were checked for completeness, and then were finally entered in to SPSS version 18.0 software for analysis. Descriptive statistics were used to describe the sample. The results of the descriptive statistics were expressed as a percentage and frequency. P value below 0.05 was considered statistically significant and P value less than 0.001 were considered highly significant. Confidentiality of the information

given by the respondent was maintained throughout the study. All efforts were made to maintain privacy of mother and newborn. At the end of the interview health education regarding the breast feeding, immunization and newborn care was given to the mothers and families members. Multivariate logistic regression models were applied to analyze the factors associated with pre-lacteal feeding outcomes. The final models present the results as odds ratios (OR) with 95% confidence intervals (95% CI).

**Results:** A total of 576 mother newborn pairs were studied and included in the final analysis. The table 1 details the biosocial characteristic of mothers and the prevalence of pre-lacteal in each demographic categories.

**Table 1: Bio-social characteristic of study participants (n=576)**

Demographic Characteristics	n (%)	Given Pre-lacteal feed (n=209)[%]
<b>Age of Mother (in years)</b>		
< 20	76	38[18.2]
20- < 25	254	86[41.1]
25 - < 30	189	71[34.0]
30 and above	57	14[6.7]
<b>Educational Qualification of Mother</b>		
Illiterate	78	43[20.6]
Up to Primary	187	71[34.0]
Up to High School	206	63[30.1]
Intermediate and above	105	32[15.3]
<b>Occupation of Mother</b>		
House wife	198	65[31.1]
Labourer	117	63[30.1]
Business	206	61[29.2]
Service	55	20[9.6]
<b>Religion</b>		
Hindu	441	164[78.5]
Muslim	135	45[21.5]
<b>Caste (social group)</b>		
General	150	52[24.9]
OBC	246	82[39.2]
SC	112	46[22.0]
ST	68	29[13.9]
<b>Type of Family</b>		
Nuclear	167	73[34.9]
Joint	409	136[65.1]
<b>Birth order</b>		
1	155	83[39.7]
2	197	67[32.1]
3	146	43[20.6]
4 and more	78	16[7.6]
<b>Place of delivery</b>		
PHC	393	132[63.2]
Private Hospital	183	77[36.8]

Per capita income per month (in INR)		
<1000	56	21[10.0]
1000-2000	62	26[12.4]
2001-5000	190	85[40.7]
5001 and more	268	77[36.9]
Type of Delivery		
Vaginal	433	112[53.6]
Caesarean Section	143	97[46.4]

**Table 2: Pattern of pre-lacteal Feeding among study participants**

Variable	n	%
Pre-lacteal feeds		
Yes	209	36.3
No	367	63.7
Reason for Pre-lacteal feed (n=209)		
Customs & Belief	87	41.6
Pressure/suggestions from relatives	41	19.6
Mother was not well	18	8.6
No/insufficient milk secretion	34	16.3
Others	29	13.9
Type of Pre-lacteal feeds (n=209)		
Animal Milk	119	56.9
Holy water	47	22.5
Honey	23	11.0
Others	20	9.6

In our study about 36.7% children received pre-lacteal feeding even though all were delivered in hospital, which reflect poor functioning of baby friendly hospital initiative in all these hospitals. Most common reason for pre-lacteal feed was traditions & customs (41.6 %) followed by pressure/suggestions from relatives (19.6%). On being asked the type of pre-lacteal feed given the most common answer was "animal milk" (56.9 %) followed by some type of "holy water" (22.5 %).

**Table 3: Multivariate logistic regression results of the factors associated with pre-lacteal feeding**

Study Variable	Pre-lacteal feeding Adjusted Odds Ratio	Confidence Interval
Knowledge about importance of colostrum		
No	0.74	0.52–1.06
Yes	0.49	0.32–0.75
Type of delivery		
Caesarean	2.94	2.39–3.61
Vaginal delivery	1.36	1.17–1.58
Parity		
Multipara	1.01	0.86–1.19
Primi para	2.09	1.74–2.50
Type of hospital		
Private	1.05	0.69–1.59
Government	1.33	0.89–1.99
Gender of new born		
Male	2.54	2.33–3.60
Female	1.16	1.11–1.51
Place of residence		
Rural	2.11	1.68–2.65
Urban	1.34	1.12–1.62

## Discussion:

A total 576 mother-newborn pair were enrolled. In our study the most frequent reason for pre-lacteal feeding was that it is a family tradition/ social norms and they didn't consider it is as harmful practice, followed by pressure/suggestions from relatives. Most common type of pre-lacteal feed given was animal (cow) milk followed by holy water.

In our study 36.3 % newborn received pre-lacteal feeding. The prevalence of pre-lacteal was found was similar to what some previous studies have found [1720]. The fact that all the newborn were born in hospital yet they received pre-lacteal feeding is a worrisome problem. These facts indicate inefficient functioning of health system in general and baby friendly hospital initiative in particular. This also indicates lack of correct knowledge among mothers & family members regarding exclusive breastfeeding.

Government of India has started a mass media campaign against pre lacteal feeding and to promote exclusive breastfeeding, but mass media campaign being a one way communication is not successful in itself to counter this problem as it has deep social roots. To properly address this social problem it is needed to reach and counsel every mother-father pair at every service delivery point. With proper strategy, this could succeed in bringing a longterm change in the newborn health.

In our study no apparent effect of religion, caste and education of mother were evident on the practice of pre-lacteal feeding. One important factor which we came across that leads to pre-lacteal feeding was insufficient secretion of breast milk immediately after birth. This can easily be tackled with proper counseling. Other main factor was that mothers were easily convinced/ pressured by the elderly members/in-laws of the family, who often considered themselves as the carrier of customs/traditional practices.

An unusual phenomenon which we observed in our study was that the prevalence of pre-lacteal feeding increased with increase in per capita income of the families. It may be theoretical possible that families with higher per capita income have easy access to other alternatives such as infant formula, which indirectly influences their choice of pre-lacteal feeding.

Our study highlights key social/demographic factors which should be addressed to reduce the prevalence of pre-lacteal feeding. Misconception prevailing in the society especially among family members should also be dealt with utmost importance. The role of elderly members of the family should be given special importance. One of the strength of our study was that this study reduced the chance of recall bias by collecting data within a reasonable time frame.

In the end we would like to suggest one thing that support should be offered to every mother in proper initiating of breastfeeding specially those who faces difficult in initiating breast or who have insufficient milk secretions. Special attention should also be given to those who are delivering for the first time.

## CONCLUSIONS:

It is fact that traditional practices like pre-lacteal feeding will take time to be changed. The introduction of BFHI might have boosted the acceptance of exclusive breast feeding, but a long way is yet to be covered. Health edu-

cation directed at changing behavior of both mother and family members should be based on an understanding of traditional believes, and changing it for global god. One way for this is to establish breast feeding support group in every community and hospital. Traditional players like religious leaders might also be involved in this campaign to have a long lasting and greater impact. Every effort should be made through communitybased strategies and supportive intervention to discourage the use of prelacteal feeds and promote breastfeeding practices.

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