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**Research Article**

# Study of Pre Lacteal Feeding Practices and its Determinants in a Rural Area of Maharashtra

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**Abstract:** Exclusive breastfeeding is the cornerstone of adequate early infant nutrition. Prelacteal feeds such as honey, sugar-water, jaggery water, castor oil, goat's milk are given under the belief that they act as laxatives, cleansing agents or hydrating agents or as a mean of clearing the Meconium which carries potential risk of infection and aspiration. Aim and objective was to study prelacteal feeding practices among infants in rural area of the Maharashtra and to study socio demographic factors associated with prelacteal feeding. It is a community based cross sectional descriptive study conducted in the rural area of Maharashtra. All mothers in the age group of 15-45 from selected village having children in the age group of 0-1 years enlisted with help of AWW and data is collected with help of pretested, predesigned questionnaire in local language by house to house visit. Data analyzed using SPSS version 16. Proportion and chi square test used. Prevalence of the prelacteal feeding practices among the study population of 42.7%. Mother's educational status, type of family, lower socioeconomic status, place of delivery and counseling by health staff significantly associated with the prelacteal feeding practices. Counseling by the health staff during antenatal visits and promotion of the hospital delivery will have positive impact on the prelacteal feeding practices.
**Keywords:** Prelacteal feeding, Infants, Prevalence.

## INTRODUCTION

Breast-feeding is the most natural way of meeting the infant's nutritional demands. Nursing mothers are therefore encouraged to exclusively breastfeed their babies for a period of at least 6 months. Human milk has since been found to be superior to other forms of supplementary feeds that the infant receives [1]. As per the recommendation of UNICEF, breast feeding should be initiated within half an hour of birth instead of waiting several hours as is often customary. Pre-lacteal feeds are foods given to newborns before breastfeeding is established or before breast milk "comes in," usually on the first day of life [2]. It is a common misbelief that milk comes only on the second or third day of life. Prelacteal feeds are often given to a newborn for fear that he may be hungry or may become dehydrated [3]. Although there is a little milk at that time, it helps to establish feeding and a close mother-child relationship, known as "bonding". The first milk, i.e. the "colostrums" is the most suitable food for the baby immediately after birth because it contains a high concentration of protein and other nutrient to the body needs; it is also rich in anti-infective factors which protect the baby against respiratory infections and diarrheal diseases [2].

Prelacteal 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 [4]. Pre-lacteal feeds are given under the belief that they act as laxatives, cleansing agents or hydrating agents or as a mean of clearing the Meconium [5]. 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 [6].

Administration of these feeds interferes with sucking and prolactin production and ultimately undermines the mother's confidence in her ability to breast feed [2, 7]. WHO/UNICEF strongly discourages the traditional practice of pre-lacteal feeding unless

medically indicated [8]. The use of honey as a prelacteal deserves special mention. Honey is a known source of the heat resistant organism Clostridium botulinum, which can lead to infant botulism [6, 8]. Introduction of prelacteal feeds is a known barrier to continuation of exclusive breastfeeding. By definition, a child provided with prelacteal feeds is not exclusively breastfed. Knowledge on the determinants of introduction of prelacteal feeds is essential to promote exclusive breastfeeding and early initiation of breastfeeding [9].

Prelacteal feeding is very high in India [8]. 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 Pre-lacteal feeding is most common in Bihar (90.6%), Uttar Pradesh (86.0%), Rajasthan (71.6%) and Jharkhand (66.3%) [10]. This study seeks to determine the current practices and determinants of pre-lacteal feeding among lactating mothers in rural area of Maharashtra.

**Aim and objective**

- To study the prelacteal feeding practices among the infant in the rural area of Maharashtra.
- To study the socio demographic factors associated with pre lacteal feeding practices.

## MATERIALS AND METHODS

**Study design**

Community based cross sectional study.

**Study Area**

Present study conducted in rural field practice area of the Dr. Shankarrao Chavan Government Medical College Nanded, Maharashtra. Three Primary health centers are adopted as rural field practice area namely Limbgaon, Tuppa and Mughat. Primary health centre Limbgaon chosen by simple random method sampling. PHC Limbgaon had 4 sub centers namely Limbgaon, Sayal, Maralak and Pawadewadi and covering 18 villages. Two sub centers namely Limbgaon and Sayal chosen randomly and the headquarter villages are chosen as the study area with population of 4720 and 2909 respectively. All mothers in the age group of 15-45 having children in the age group of 0-1 years enlisted with help of AWW of the respective area and data is collected with help of pretested, predesigned questionnaire in local language by house to house visit. Out of total 164 mothers having children between 0-1 years of age 150 were available at the time of home visit are included in the study as respondent. Respondents were informed about the nature and benefits of the study and their consent obtained before administration of the questionnaire. The study was conducted during 16 July 2013 to 15 August 2013. At the end of the interview health education regarding the breast feeding was given to the mothers.

**Inclusion criteria**

All mothers with age group of 15-45 having the child in age group of 0-1 year

**Exclusion criteria**

Those having contraindication for breast feeding, not willing to participate and mothers who are out of station at the time of home visit are excluded from the study.

**Data Analysis**

Data analyzed using SPSS version 16. Proportion and chi square test used.

## RESULTS

**Social characteristic of the respondents**

One hundred and fifty mothers of child bearing age (respondents) recruited in study. Majority of the respondents (62%) were in the age group of 21-25 years. Ninety one (60.7%) respondents had secondary education only ten (6.7%) had no formal education. Hindus were the dominant (58.7%) religion among the respondents followed by Buddhist (25.3%) and Muslim (16%). Among the 150 respondent mothers (40%) belong to the class IV socioeconomic status as per the modified BG Prasad scale for the rural area and joint family (59.3%) was the predominant family structure followed by three generation extended (20.7%)and nuclear family (20%).

**Prevalence of prelacteal feed**

Sixty four (42.7%) out of 150 respondent practiced prelacteal feed while the remainder 86 (57.3%) did not, thus giving prevalence of the prelacteal feeding practices among the study population of 42.7%. Among the 64 respondent who practiced the prelacteal feeding 38 (59.3%) carried out the act with the advice from the elder parents from the house, while 18 (28.3%) were advised by the health staff and 8 (12%) respondent by relative and neighbor.

**Type of prelacteal feed**

Cow milk (45.3%) was the most common prelacteal feed administered followed by honey (40%). Honey with the castor oil administered by 6 (9.31%) respondent while castor oil, honey and cows milk together given by 2 (3.12%) respondent. Only one (1.56%) respondent administered Jaggery water.

**Reason for prelacteal feed administration**

Insufficient milk was the reason reported by the 20 (31.25%) mothers followed by elder's advice 19 (29.68%) and family custom 16 (25%). Thirteen mother (20.3%) gave reason of good for health (Child will talk early and Tongue will become thin) while 6 (9.37%) opine that that it will remove meconium from the gut of the child.

**Place of delivery of the child**

Highest percentage of the respondents 99 out of 150 (66%) delivered in the government hospital while 38(25.3%) delivered in the private hospital. Home delivery was reported only by 13(8.7%) of the respondents.

Type of delivery: Out of 150 respondents 129(86%) delivered by vaginal route while 21(14%) delivered by caesarean section.

**Relationship between the respondent's social characteristic and the prelacteal feeding practices**

**Age of the mother**

The age group with highest number of respondent that practiced prelacteal feeding was 21-25 years 59.4%, while the age bracket of respondents with least practice of the prelacteal feed was 35-40 years. However there was no statistically significant association between the age of the mother and the prelacteal feeding practices.

**Mothers education status**

Among respondents having education secondary school and above it was found that 33.9% practicing the prelacteal feeding practices while illiterate mothers and the respondents having education less than primary it was found that 63.3% practicing the prelacteal feeding. Chi square test showed significant association between the prelacteal feeding and literacy.

**Type of family**

Nineteen (61.3%) mothers out of 31 practiced prelacteal feeding among the three generation extended family, 38 (42.7%)out of 89 given prelacteal feeding as compared to the 7 (23.3%) out of 30 amongst the nuclear family practiced prelacteal feed. Respondents from the joint and three generation extended family are more likely to practice the prelacteal feed due to the family customs. The relation between the type of family and the prelacteal feeding practices found to be statistically significant (p value<0.05)

**Religion of the respondent**

Thirty seven (42%) out of 88 Hindu, 15 out of 38 Buddhist (39.5%) and 12 out of 24 Muslim (50%) practicing prelacteal feeding in the current study. However there is no significant association between the religion of the respondent and the prelacteal feeding practice.

**Socioeconomic status of the respondent**

In our study 16(67.7%) out of 24 respondents from the lower socioeconomic group found to be practicing prelacteal feed to their baby as compared to the 11(42%) out of 26 in the upper socioeconomic class. The relation between the socioeconomic class and prelacteal feeding practices found to be statistically significant (p value<0.001).

**Place of delivery**

Seven out of 13 (53.8%) home delivered and 20(52.6%) out of 38 respondent delivered at the private hospital given prelacteal feed to their baby as compared to only 37 (37.1%) out of 99 who delivered in government institute. It has been found that those delivered in the government hospital are practicing less prelacteal feeding than in the home and private hospital delivery. This difference may be due the better counseling at the government hospital on breast feeding. However, the difference is not statistically significant (p value> 0.05).

**Route of delivery**

Fifty two (40.3%) out of 129 and 12(57.1%) out of 21 practicing prelacteal feeding those who delivered by vaginal and caesarean section respectively. However no significant association found between the route of delivery and the prelacteal feeding.

Morbidity after prelacteal feed: Twenty three (35.9%) respondent out of 64 who given the prelacteal feed to their baby reported morbidity within one week after the birth in contrast only 8 (9.3%) out of 86 respondent reported any kind of morbidity in first week of life of baby. The relation between the morbidity in the first week of life and the prelacteal feeding practices found to be statistically significant (p value< 0.001).

**Counseling by the health staff during antenatal visits**

Prelacteal feeding practices found to be more among the respondents who did not receive the antenatal counseling about the breast feeding as compare to those who received. In present study 47(23.6%) out of 78 practiced the prelacteal feed who did not received the counseling by the health staff as compared to the 17 (60.3%) out of 72 who received the counseling. The association found to be statistically significant (p value <0.001).

**Table 1: Relationship between the respondent's social characteristic and the prelacteal feeding practices**

| | | | | | |
|---|---|---|---|---|---|
| **1** | **Distribution of the respondents according to age group** | | | | |
| | | | **Prelacteal feed given** | | **p value** |
| | Age Group | **Total** | **Yes** | **No** | |
| | <20 | 24(100) | 12(50) | 12(50) | |
| | 21-25 | 93(100) | 38(40.9) | 55(59.1) | |
| | 26-30 | 25(100) | 9(36) | 16(64) | 0.550 |
| | 31-35 | 07(100) | 4(57.1) | 3(42.9) | |
| | 36-40 | 01(100) | 1(100) | 0(0) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |
| **2** | **Distribution of the respondents according to sex of the child** | | | | |
| | Sex of child | **Total** | **Yes** | **No** | |
| | Boys | 79(100) | 33(41.8) | 46(58.2) | 0.815 |
| | Girls | 71(100) | 31(43.7) | 40(56.3) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |
| **3** | **Religion wise distribution of respondents** | | | | |
| | Religion | **Total** | **Yes** | **No** | |
| | Hindu | 88(100) | 37(42) | 51(58) | |
| | Muslim | 24(100) | 12(50) | 12(50) | 0.705 |
| | Buddhist | 38(100) | 15(39.5) | 23(60.5) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |
| **4** | **Distribution of respondents according to Socioeconomic class** | | | | |
| | Class | **Total** | **Yes** | **No** | |
| | Class I | 5(100) | 2(40) | 3(60) | |
| | Class II | 22(100) | 9(42.9) | 12(57.1) | |
| | Class III | 40(100) | 23(57.5) | 17(42.5) | 0.001 |
| | Class IV | 59(100) | 14(23.3) | 46(76.7) | |
| | Class V | 24(100) | 16(66.7) | 8(33.3) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |
| **5** | **Distribution of respondents according to type of family** | | | | |
| | Family type | **Total** | **Yes** | **No** | |
| | Nuclear | 30(100) | 7(23.3) | 23(76.7) | |
| | Joint | 89(100) | 38(42.7) | 51(57.3) | 0.01 |
| | Three Generation | 31(100) | 19(61.3) | 12(38.7) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |
| **6** | **Distribution of respondents according to literacy status** | | | | |
| | Education | **Total** | **Yes** | **No** | |
| | Illiterate | 10(100) | 6(60) | 4(40) | |
| | Primary | 34(100) | 22(64.7) | 12(35.3) | |
| | Secondary | 91(100) | 30(33) | 61(67) | 0.007 |
| | Graduation | 12(100) | 6(50) | 6(50) | |
| | Post graduation | 03(100) | 0(0) | 3(100) | |
| | Total | 150(100) | 64(42.7) | 86(57.3) | |

**Table 2: Distribution of the mothers according to the constituent of prelacteal feed used**

| Constituent of the prelacteal feed | Number | Percentage |
|---|---|---|
| Cow's milk | 29 | 45.31 |
| Honey | 26 | 40.62 |
| Honey and castor oil | 6 | 9.31 |
| Jaggery water | 1 | 1.56 |
| Castor oil honey cow's milk | 2 | 3.12 |
| Total | 64 | 100 |

**Table 3: Distribution of mothers according to the advice given for prelacteal feeding**

| Advice given by | Number | Percentage |
|---|---|---|
| Elder | 38 | 59.37 |
| Health staff | 18 | 28.12 |
| Relative | 5 | 7.81 |
| Neighbor | 3 | 4.68 |
| Total | 64 | 100 |

**Table 4: Distribution of the mothers according to the reason for giving prelacteal feed**

| Reason for giving prelacteal feed | Number | Percentage |
|---|---|---|
| Insufficient milk | 20 | 31.25 |
| Elder advise | 19 | 29.68 |
| Good for health | 13 | 20.31 |
| Family custom | 16 | 25 |
| Remove Meconium from gut | 6 | 9.37 |
| Total | 64 | 100 |

**Table 5: Distribution of the mothers according to the counseling by the health staff on breast feeding and prelacteal feeding practices**

| Counseling by health staff | Prelacteal feed given | | Total |
|---|---|---|---|
| | Yes | No | |
| Yes | 17(23.6) | 55(76.4) | 72(100.0) |
| No | 47(60.3) | 31(39.7) | 78(100.0) |
| Total | 64(42.7) | 86(57.3) | 150(100.0) |

Chi square value: 20.553; degree of freedom: 1; p value> 0.001

## DISCUSSION

Prevalence of the prelacteal feeding among the respondent in current study was 42.7%. Similar findings were observed by Jagzape *et al*. (43.2%) [11] in study conducted in Wardha and Wadade *et al*. (40.2%) [3] in Beed district of Maharashtra. Study conducted by BPNI [7] in 49 districts of India which found that 49 % of the mothers practicing prelacteal feeding. Kulkarni R N [12] also reported about 36.1% of the prelacteal feeding practices in study conducted at Mumbai slum in 2004. Rahi *et al*. in Delhi slum (47.6%) [13], Singh *et al*. (52%) [14] Mysore, Karnataka also found the same prevalence of the prelacteal feeding practices as in the current study. Gupta *et al*. (10.2%) [5] in Rajasthan, Roy *et al*. in Kolkata slum (29.16%) [15], Giridhar Lal *et al*. (27.3%& 22.7%) [2] among two tribal community in Andhra Pradesh found lower prevalence of prelacteal feeding than the current study. Raval *et al*. (61.9%) [16] Bhavnagar, Gujarat, Khan et al. (90%) [17] rural UP, Raina *et al*. (88%) [18] found higher prevalence of prelacteal feeding than in the current study.

The study further revealed that major reasons for the prelacteal feeding were the insufficient milk/ delayed lactation (31.25%) ,elder's advice (29%) and family custom (25%). This finding is consistent in another study conducted in Nigeria by the Ibadin *et al*. [19] and Roy *et al*. [15] who found (51.1%) and (62.9%) mothers giving prelacteal feed due to insufficient milk respectively.

In current study education of the mother significantly associated with the prelacteal feeding practices. This finding is consistent with Kulkarni *et al*. [12] who found higher percentage of illiterate mothers (68.7%) had given pre-lacteals to their children as compared to 31.1% of literate mothers. Raval *et al*. [16] in their study conducted in Bhavnagar, Gujrat also found that illiterate mothers (85.2%) practiced more prelacteal feeding than literate mothers (50.9%) and the observed difference according to education of mother was statistically significant (<0.01). Wadde *et al*. [3] also documented 66 (32.67%) of 202 literate mothers gave prelacteal feeds Chi square showed significant association between prelacteal feeding and literacy status (p<0.001).

Prelacteal feeding practices were more common among the lower socioeconomic class than the upper socioeconomic class and the association is found to be statistically significant in the current study. Wadde *et al*. [3] documented similar findings in their study conducted in rural area of Maharashtra.

In this study cows milk was found most common prelacteal feed (45.31%) followed by the honey (40.62%) and castor oil. Similar findings noted

by Wadde *et al*. [3] in study conducted in rural area in Maharashtra. There was no significant association between the sex of child and the prelacteal feeding which is also documented in similar studies [5].

Prelacteal feeding was more prevalent among the mothers who did not received the prelacteal feeding counseling during ANC visits and the relation is statistically significant which similar to the finding of Roy *et al*. [15] Mothers of the (44.4%) counseled by the health staff in currents study and most of them (59.7%) were by the ANM of the sub centre. Similar findings are noted in the study of the Roy *et al*. conducted in Kolkata in which (41.6%) of the mother informed about the exclusive breast feeding mostly from the health facility [15].

Elders in home especially the mother in laws who were less educated, less informed about the current practice of the breastfeeding were the main advocator (59.1%) for the prelacteal feed in current study which is also documented by the Khanal *et al*. [9].

Discussing the use of prelacteal offers an opportunity to understand cultural practices and the opportunity to educate. The feeding of sweets to new borns are deeply rooted in cultural and religious practices, and a health staffs respect and attention to these needs has the potential to build trust, improve communication, and enhance the birth experience [6].

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