

Research Article

# Determinants of Breastfeeding Practices among Lactating Mothers in a Rural Block of Haryana, India

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## I N F O

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## A B S T R A C T

**Background:** Human breast milk contributes to the physical growth of infants by meeting their nutritional needs and higher intelligence quotient by enhancing their brain development.

**Objective:** To assess the prevalence of exclusive breastfeeding and to determine the contributing factors of exclusive breastfeeding practice in a rural area of Haryana.

**Methods:** It was community-based cross-sectional study, conducted in a rural field practice area attached to the Department of Community Medicine of Pt BD Sharma, PGIMS, Rohtak. The study participants were infants aged 6-11 completed months and their mothers. Multistage sampling technique was used for enrolling 200 study subjects. SPSS was used for statistical analysis.

**Results:** 119 (59.5%) infants were exclusively breastfed for 6 months. Homemakers were 1.37 times more likely to feed exclusively than working women. Women from joint families were 2.64 times more likely to feed exclusively than women from nuclear families. Exclusive breastfeeding had a statistically significant association with mode of delivery, breastfeeding counselling, motivation to feed till 2 years, receiving postnatal checkup, number of children, initiation of breastfeeding within 1 hour, and colostrum being given to infants. Infants given breastfeed within 1 hour had 1.12 times more chance of exclusive breastfeeding.

**Conclusion:** Antenatal breastfeeding counselling and home-based postnatal visits by health workers increases the practice of colostrum administration, initiation of breastfeeding within 1 hour, and exclusive breastfeeding for 6 months. Capacity building in form of training and sensitisation of hospital staff, MPH (F), and ASHA will help increase exclusive breastfeeding among lactating mothers.

**Keywords:** Breastfeeding Practices, Determinants, Lactating Mothers, Rural

## Introduction

The first 1,000 days of a child's life starting from conception through age two is a crucial period for ensuring child survival, optimal growth, cognitive development, and healthy life. Being the first food of newborns, human breast milk contributes to the growth of an infant by meeting its nutritional needs and providing bioactive factors for growth.<sup>1</sup>

WHO and UNICEF Global Strategy for Infant and Young Child Feeding (IYCF) advocate for early initiation of breastfeeding within the first hour of childbirth, exclusive breastfeeding the infant with only breast milk with no supplemental liquids or solids except for liquid medicine or vitamin/ mineral supplements for 6 months and continued breastfeeding until age 2 years or longer, in addition to adequate and safe food.<sup>2</sup> The Global breastfeeding scorecard, 2019 reports only 43% of newborns were initiated on breastfeeding within one hour of birth, only 41% of infants were exclusively breastfed for the first six months and only 45% of children were breastfed till two years of age.<sup>3</sup> Only 41.6% of children under 3 years were breastfed within an hour of birth despite 78.9% of infants being born of institutional delivery in India<sup>4</sup> while comparative rates of early initiation of breastfeeding for State of Haryana and District Jhajjar of Haryana were 42.3% and 28.9% respectively.<sup>5</sup> 54.9% of children under 6 months of age were exclusively breastfed in India.<sup>4</sup> The exclusive breastfeeding rate for children under 6 months in Haryana and district Jhajjar is 50.4% and 70.8% respectively.<sup>5</sup>

In spite of various government programmes implemented at the community level, the exclusive breastfeeding rate is less than expected. So, we intend to determine the factors which contribute to the practice of exclusive breastfeeding. Thus, this study aimed to assess the prevalence of exclusive breastfeeding and to assess the determinants of breastfeeding practice in rural areas served by CHC Dighal, Jhajjar, Haryana.

## Material and Methods

A community-based cross-sectional study was conducted in the area of Community Health Centre (CHC) Dighal, Jhajjar, Haryana, which is the rural field practise area attached to the Department of Community Medicine, of Pt BD Sharma PGIMS, Rohtak. The study was conducted over a period of 12 months commencing from March 2019. The study population comprised of infants aged 6-11 completed months and their mothers who were willing to participate in the study. Also, infants who were apparently healthy for the last one month before enrolment for the study, with or without some minor childhood ailments were included in the study.

Infants having a history of prolonged or severe illness

requiring hospitalisation, infants with congenital anomalies which affect their growth and infants separated from their mother (death, divorce, adoption) were excluded from the study.

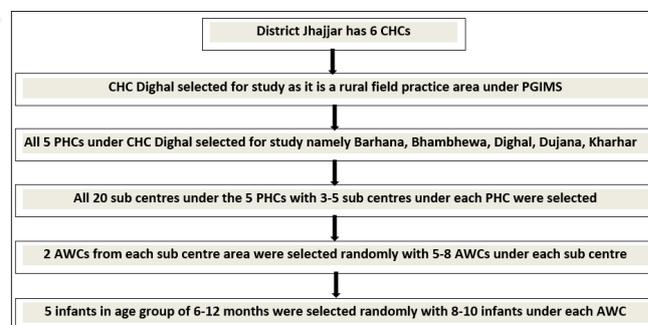
## Sample Size

Taking the prevalence of exclusive breastfeeding in Haryana as 50.4%, which has been reported by NFHS 4 (2015-16)<sup>5</sup> and further taking the allowable error to be 15% of the prevalence, the sample size came out to be 178. So for the purpose of the present study, 200 subjects were enrolled.

## Sampling Techniques

Multistage sampling technique was used for enrolling the required 200 study subjects. There are 5 PHCs and 20 sub-centres under CHC Dighal, Jhajjar, Haryana. For the purpose of the study, all 20 sub-centres were selected. Two anganwadi centres (AWC) were randomly selected by lottery method from each of these sub-centre areas and thus a total of 40 AWCs were included in the study. A list of infants having six months to one year of age was prepared from each of these anganwadis and out of this list, five infants were selected by simple random sampling technique.

Home visits were made by the investigator and informed written consent was obtained from the mothers of infants for participating in the study after informing them about the purpose of the study.



The data were collected using a pre-designed, pre-tested, semi-structured schedule which was piloted on 20 subjects for the feasibility of administration of questions, and modifications were made, before the commencement of study. For defining socio-economic status, modified BG Prasad classification (2019)<sup>6</sup> was used.

## Statistical Analysis

The data were subjected to appropriate statistical tests using SPSS 20 (Statistical package for social sciences) software. Descriptive statistics in terms of percentages and inferential statistics as chi-square test was used for qualitative data. Binary logistic regression was applied for variables whose p value was < 0.20.

## Ethics

Ethical approval was obtained from the ethics committee of Pandit Bhagwat Dayal Sharma PGIMS, Rohtak and written informed consent was obtained from parents of the patients.

## Results

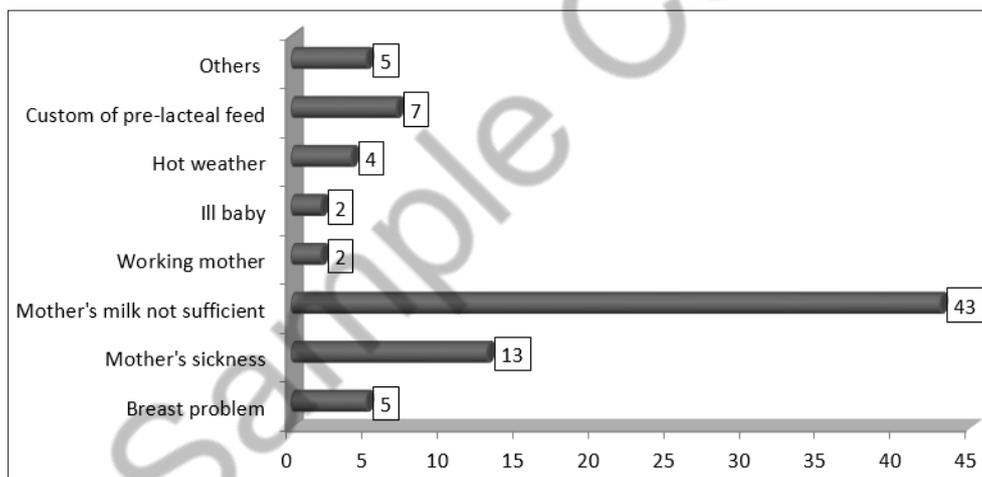
Out of 200 infants, 119 (59.5%) were exclusively breastfed for 6 months and 71.5% had initiated breastfeeding within 1 hour of delivery. As observed in Table 1, in the beginning, 161 infants were given only breastmilk but slowly many of them shifted to mixed feeding and by 6 months of age, only 119 (59.5%) were meeting all the criteria of exclusive

breastfeeding. The reasons given by mothers (n = 81) for not exclusively breastfeeding their child for 6 months and not initiating breastfeeding within 1 hour are depicted in Figure 1 and Figure 2 respectively. Different feed offered to infants as the first food is shown in Figure 3.

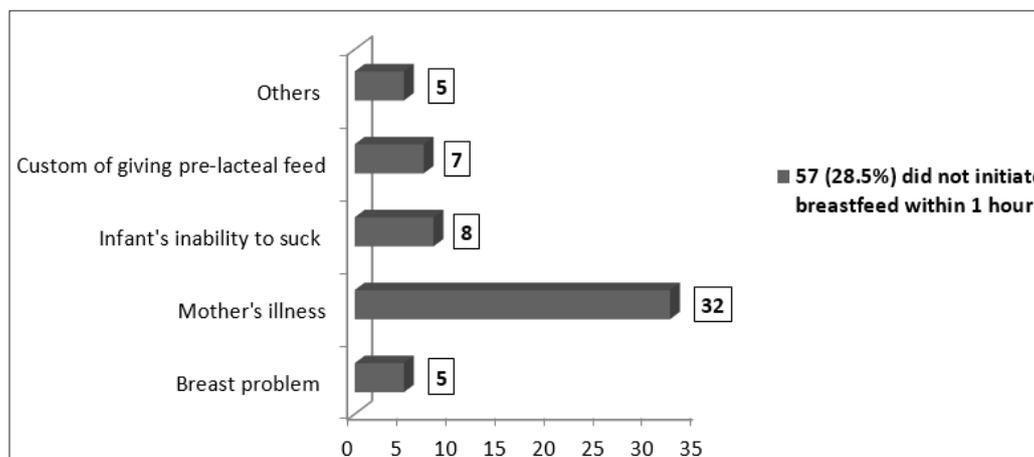
Table 2, shows the association of exclusive breastfeeding for 6 months with socio-demographic variables. On applying logistics regression, it was found that homemakers had 1.4 times more chances of feeding exclusively in comparison to working women. Likewise, women who belonged to joint families had 2.6 times more chances of feeding exclusively in comparison to those who belonged to nuclear families.

**Table 1. Infants given Exclusive Breastfeeding at different time intervals after Birth**

Age of Infant	Infants given only Breastmilk till this Age (n = 200)	Percentage
First day of life	161	80.5
At 1 week	150	75
At 1 month	148	74
At 3 months	138	69
At 6 months	119	59.5



**Figure 1. Reasons given by Mothers for not Exclusively Breastfeeding for 6 Months**



**Figure 2. Reasons given by Mothers for not Initiating Breastfeeding within 1 hour**

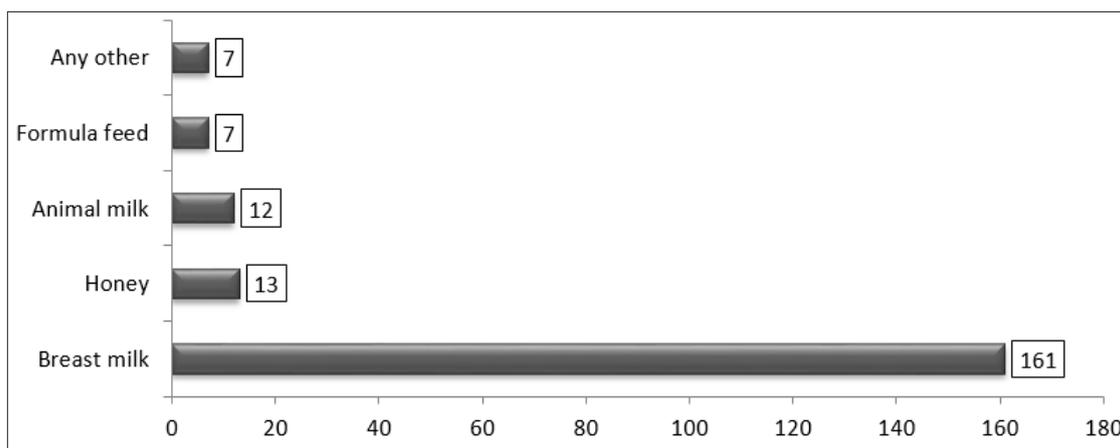


Figure 3. First Food offered to Infants after Birth

Table 2. Association of Exclusive Breastfeeding for 6 Months with Socio-demographic Variables

Variables	Exclusive Breastfed n (%)	Not Exclusive Breastfed n (%)	Total	P value
<b>Gender of infant</b>				
Male	64 (59.3)	44 (40.7)	108	0.94
Female	55 (59.8)	37 (40.2)	92	
<b>Age of mother (years)</b>				
< 35	117 (60.3)	77 (39.7)	194	0.23
> 35	2 (33.3)	4 (66.7)	6	
<b>Education of mother</b>				
Illiterate	8 (53.3)	7 (46.7)	15	0.61
Literate	111 (60.0)	74 (40.0)	185	
<b>Mother's occupation</b>				
Homemaker	114 (60.6)	74 (39.4)	188	0.19
Working woman	5 (41.7)	7 (58.3)	12	
<b>Socioeconomic Status</b>				
Upper	6 (42.9)	8 (57.1)	14	0.57
Upper middle	25 (67.6)	12 (32.4)	37	
Middle	28 (63.6)	16 (36.4)	44	
Lower Middle	39 (61.9)	24 (38.1)	63	
Lower	21 (50)	21 (50)	42	
<b>Type of family</b>				
Joint	95 (57.2)	71 (42.8)	166	0.15
Nuclear	24 (70.6)	10 (29.4)	34	
Total	119 (59.5)	81 (40.5)	200 (100)	

Table 3, shows the association of exclusive breastfeeding of a child till 6 months with obstetric factors among lactating mothers. In comparison to hospital stay of mothers for more than 2 days, women who were discharged after 2 days of delivery, on the next day of delivery, and on the same day of delivery had 3.7 times, 1.2 times, and 1.6 times more

chances of exclusive breastfeeding respectively. Figure 4 depicts the postnatal home visits given to mothers by health care workers after delivery. The types of problems faced by mothers while breastfeeding the baby in public places is depicted in Figure 5.

**Table 3. Association of Exclusive Breastfeeding for 6 Months with Obstetric Factors among Lactating Mothers**

Variables	Exclusive breastfed n (%)	Not Exclusive breastfed n (%)	Total	P value
<b>Mode of delivery</b>				
NVD	106 (65.4)	56 (34.6)	162	0.00
C/S	13 (34.2)	25 (65.8)	38	
<b>Spacing between last two children (n = 110, having two or more than two children)</b> Note: 84 mothers had 1 child and 6 infants were outcome of multiple pregnancy				
< 2 year	14 (50)	14 (50)	28	0.39
2-3 year	33 (80.5)	8 (19.5)	41	
> 3 year	26 (63.4)	15 (36.6)	41	
<b>Breastfeeding counselling during ANC</b>				
Yes	101 (63.5)	58 (36.5)	159	0.02
No	18 (43.9)	23 (56.1)	41	
<b>Day of discharge after delivery</b>				
Same day	27 (71)	11 (29)	38	0.01
Next day	33 (60)	22 (40)	55	
After 2 days	40 (67.8)	19 (32.2)	59	
More than 2 days	19 (39.6)	29 (60.4)	48	
<b>Mother's motivation to feed till 2 years</b>				
Fully motivated	88 (68.2)	41 (31.8)	129	0.00
Partially motivated	26 (52)	24 (48)	50	
Not motivated enough	5 (23.8)	16 (76.2)	21	
<b>Last child exclusively fed for 6 months (n = 110)</b>				
Yes	67 (72.8)	25 (27.2)	92	0.00
No	6 (33.3)	12 (66.7)	18	
<b>Received postnatal check up</b>				
Yes	115 (61.2)	73 (38.8)	188	0.07
No	4 (33.3)	8 (66.7)	12	
<b>Number of children</b>				
1	46 (54.1)	39 (45.9)	85	0.01
2	53 (57.6)	39 (42.4)	92	
3	14 (87.5)	2 (12.5)	16	
4	2 (66.7)	1 (33.3)	3	
5	4 (100)	0	4	

Table 4 shows the association of exclusive breastfeeding with infant feeding practices. Infants given breastfeed within 1 hour had 1.12 times more chance of exclusive breastfeeding than infants who were not given breastfeed within 1 hour. Out of 185 infants who were given colostrum, 26 (14.1%) were given pre-lacteal feeds like honey, animal

milk, formula feed etc. before giving them breast milk. Among infants who were not given colostrum feeding, 86.7% were given pre-lacteal feeds. The association between colostrum feeding and the first food offered to infants was found to be statistically significant ( $p = 0.00$ ).

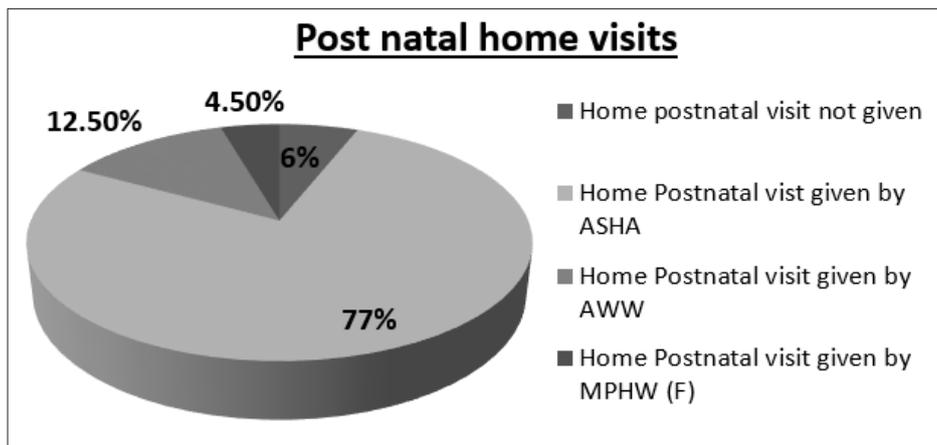


Figure 4. Postnatal Home Visits given to Mothers after Delivery

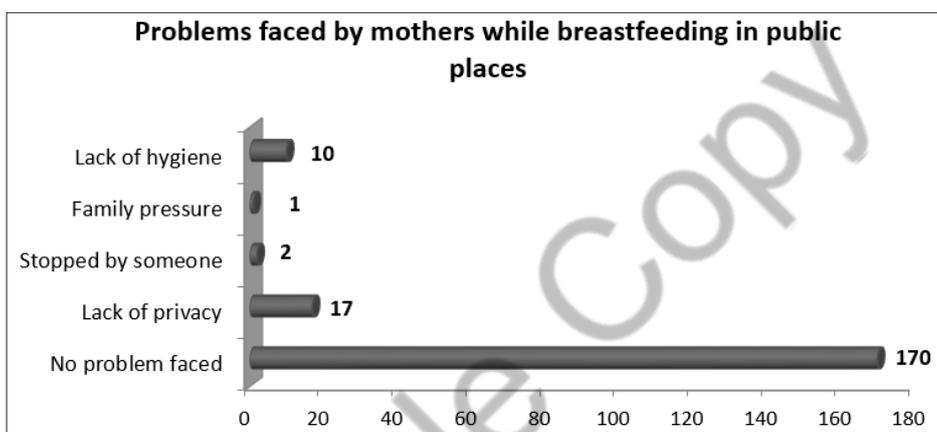


Figure 5. Problems faced by Mothers while Breastfeeding in Public Places

Table 4. Association of Exclusive Breastfeeding for 6 Months with Other Infant Feeding Practices among Lactating Mothers

Variables	Exclusive Breastfed n (%)	Not Exclusively Breastfed n (%)	Total	P value
<b>Initiation of BF within 1 hour</b>				
Yes	99 (69.2)	44 (30.8)	143	0.00
No	20 (35.1)	37 (64.9)	57	
<b>Colostrum given</b>				
Yes	118 (63.8)	67 (36.2)	185	0.00
No	1 (6.7)	14 (93.3)	15	
<b>Type of baby feeding schedule (n = 185)</b>				
Demand feeding	36 (59)	25 (41)	61	0.47
Interval feeding	80 (64.5)	44 (35.5)	124	
<b>Night feeding (n = 185)</b>				
Yes	114 (64.4)	63 (35.6)	177	0.05
No	2 (25)	6 (75)	8	

## Discussion

The prevalence of exclusive breastfeeding was found to be

59.5% in the present study, with an almost similar proportion of male and female infants (59.3% and 59.8% respectively) receiving exclusive breastfeeding for the complete 6

months. In Nagpur, Patel (2018)<sup>7</sup> reported 71% and 96% exclusive breastfeeding in control and intervention groups respectively. Anwar (2014)<sup>8</sup> found a 25.3% prevalence of exclusive breastfeeding in the 0-6 months cohort in Varanasi. The prevalence for 6 months exclusive breastfeeding was found to be 71.0% by Manyeh (2020)<sup>9</sup> in Ghana, 47% by Woldeamanuel (2020)<sup>10</sup> in Ethiopia and 62.3% (at 5 months) by Milinco (2019)<sup>11</sup> in Italy. The difference in the prevalence of exclusive breastfeeding in different studies can be attributed to different socioeconomic settings and the varied cultures of these places.

The decline in exclusive breastfeeding practices at different ages of infants was similar to a study done in Andhra Pradesh by Meshram (2012),<sup>16</sup> where exclusive breastfeeding in the first month declined to 86% at 3 months, 46% at 5 months of age, and 41% at 6 months. In an Italian study by Cinelli (2018),<sup>12</sup> exclusively breastfed infants were 69.5% (n = 321) at birth and 19.9% (n = 92) at 6 months of age.

### Reasons for not Exclusively Breastfeeding

Similar to our study, Ratnayake (2018)<sup>13</sup> found that the main reason for early cessation of exclusive breastfeeding was the mother's thinking that breast milk was not sufficient for the growing needs of the baby (52.9%).

### Exclusive Breastfeeding and Literacy Status of Mothers

Similar to this study, Cinelli (2018),<sup>12</sup> Acharya (2015),<sup>17</sup> and Berhanu (2015)<sup>15</sup> also found that maternal education was positively associated with the duration of breastfeeding. This could be due to a better understanding of health issues and better accessibility of literate mothers to literature regarding child-rearing practices.

### Exclusive Breastfeeding and Occupational Status of Mothers

In a study conducted by Ratnayake (2018),<sup>13</sup> Berhanu (2015),<sup>15</sup> and Sasaki (2010),<sup>18</sup> it was observed that working mothers were more often associated with cessation of exclusive breastfeeding. Contrary to this study, Manyeh (2020)<sup>9</sup> found a significant association between occupation and exclusive breastfeeding.

### Exclusive Breastfeeding and Mode of Delivery

Infants born by normal vaginal delivery showed a higher prevalence of exclusive breastfeeding for 6 months and early initiation of breastfeeding within 1 hour of birth as compared to those who were delivered by cesarean section. This was in line with the findings in the research of Woldeamanuel (2020)<sup>10</sup> and Elyas (2017)<sup>14</sup> who found that spontaneous vaginal delivery was a significant factor in enhancing exclusive breastfeeding.

### Home-based Postnatal Care Visits and Exclusive Breastfeeding among Mothers

Exclusive breastfeeding was 61.2% among mothers who received home-based postnatal care visits as compared to 33.3% among those who were not paid any such visit. The finding suggested a positive impact of home-based postnatal care visits, up to 42nd day after delivery, on exclusive breastfeeding practices.

### Colostrum Feeding and Exclusive Breastfeeding

A significantly higher rate of exclusive breastfeeding was seen in infants who had colostrum feeding (63.8%) as compared to those who were not given colostrum (6.7%). The social customs of discarding colostrum and giving pre-lacteal feeds still acted as a hindrance for colostrum feeding. Similar observations were made by Awasthia (2019)<sup>19</sup> in their study in Uttar Pradesh who found that pre-lacteal feeding was a major barrier to exclusive breastfeeding.

### Early Initiation of Breastfeeding and Exclusive Breastfeeding

Similar to our study, Ratnayake (2018)<sup>13</sup> in Sri Lanka also found that failure in timely initiation of breastfeeding was associated with premature discontinuation of exclusive breastfeeding.

### Motivation of Mothers for Continued Breastfeeding and Exclusive Breastfeeding

The study showed that motivation played a significant role in exclusive breastfeeding practice. Similarly Ratnayake (2018)<sup>13</sup> also found that mothers' poor attitude towards exclusive breastfeeding (Adjusted OR 2.98) was itself associated with its early cessation.

### Limitations of Study

A causal relationship of exclusive breastfeeding with obstetric factors or infant feeding practices could not be established. Some part of the study questions relied on the memory of respondents which may have introduced recall bias in the findings.

### Conclusion

The prevalence of exclusive breastfeeding till 6 months in the rural area was 59.5%. The factors affecting the same were birth order of infant, antenatal counselling on exclusive breastfeeding, mode of delivery, duration of mother's stay in hospital after delivery, colostrum feeding, early initiation of breastfeeding within 1 hour of birth, and motivation of mothers to continue breastfeeding for 2 years. Antenatal breastfeeding counselling to young married women and expectant mothers along with home-based postnatal visits by health workers will increase their self-

confidence, knowledge, and awareness about maintenance of good habits (advantages of colostrum administration and exclusive breastfeeding till 6 months, and about harms of pre-lacteals and mixed feeding). Capacity building in the form of training and sensitisation of hospital staff (institutional deliveries), MPH (F), and ASHA (home-based postnatal care visits) will help increase exclusive breastfeeding among lactating mothers.

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**Conflict of Interest:** None

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