

# Breastfeeding and colostrum feeding practices adopted by mothers of infants (6-30 Months)

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Infant feeding practices is prevailing universally and considered important determinants for development of infants. The feeding practices develop immunity in the infants to fight against diseases in the later phase of their life. In the present study, feeding practices include both breast feeding and colostrum feeding practices. A study was conducted in Jodhpur, Rajasthan to assess the feeding practices of infants among the working –non working mothers of rural – urban areas. The purposive sampling technique was used to select 240 infants, 120 infants belonged to working mothers (60 infants from each rural – urban area) and 120 infants of non-working mothers (60 infants from each rural and urban area). The data was collected by interview method by using semi structure and standarized questionnaire based on the guidelines of World Health Organization (WHO) on breastfeeding. The evaluation criteria was also framed and standardization was done along with the formation of the tool for the study. The responses were categorized under good and poor ranking. The result shows a significant association between the feeding practices – breastfeeding and colostrum feeding practices among mothers of rural- urban areas. Majority (96.7 %) of mothers exclusively breastfeed their infants. The non working mothers of rural areas breastfeed their infants for more than 18 months. Insufficient milk secretion was the most common reason for delay of breastfeeding among the working mothers of rural areas (93.3%). The working mothers of rural areas, who fed their infants according to the ‘schedule’, were rated good whereas poor rating was given to non working mother of rural areas who had breastfeed their infants ‘on demand’. Lack of knowledge and superstitions prevailing among the non working mothers (1.3%) of rural areas which was one of the reasons for onset of next pregnancy which affects the breast feeding practices. Discard of colostrum was found among the non working mothers of rural areas *i.e.* maximum of 43.3%. Based on the result, it can be concluded that exclusive feeding practice among the mothers of rural-urban areas was upto the standard. These findings highlighted that mothers should be given proper knowledge of feeding practices both in rural and urban areas during the pregnancy itself.

**Key Words :** Working non-working mothers, Rural-urban areas, Feeding practices, Exclusive breast feeding, Colostrum, Pre lacteal feed

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## INTRODUCTION

Breastfeeding is considered as a universal feeding practice for infants (Woldegebriel, 2002). Breastfeeding is an important determinant for infants as it fulfills the nutritional requirements for the first 6 months of infant's life. The infant is fully dependent on mother for food,

survival and for prevention from early childhood diseases (Kumari and Murlidhar, 2015). The breastfeeding becomes beneficial for the infant only when the initiation of breastfeeding is at appropriate time (Mahmood *et al.*, 2012). The long term consequences of breastfeeding is that it affects the metabolism of infant as it develops immunity against diseases which a child faces later in life (Oddy, 2001). Each and every mother is recommended do exclusively breastfeeding to her infants for 6 months. Exclusive breastfeeding means the infant is completely fed on the mother's milk and it prohibits any kind of solid foods except the drops of vitamins and minerals or any medicine prescribed by the doctors (Tan, 2011). The World Health Organization (WHO) has confirmed that exclusively breastfeeding for 6 months is beneficial for both mothers and infants. The National Family Health Survey 2015-16 (NFHS-4) of Rajasthan reported that overall 28.4% of the children under the age of 3 years were breastfeed within 1 hour of birth whereas 58.2 % of the children under the age of 6 months were exclusively breastfeed. The breastfeeding practices are well known and universally adopted practices but the colostrum practices among the mother were not much prevalent. Many a times even the mother herself discarded colostrum despite of its high nutrition value (Kakati *et al.*, 2016). Therefore, the present study was conducted with the objective to assess the breastfeeding and colostrum feeding practices among the working – non working mothers of rural and urban areas of Jodhpur.

## METHODOLOGY

A comparative, observational and analytic study was conducted in rural - urban areas of Jodhpur, Rajasthan. The study comprised of mothers having infants aged 6 months to 30 months. The research was conducted on total 240 infants. Out of these 240 infants, 120 infants belong to working mothers (60 infants each from rural and urban areas) and 120 infants of non working mothers (60 infants from each rural and urban areas). For the purpose of study, subjects were collected from aganwadi centers and home by door to door visit. The children, who were enrolled in aganwadi register from November 2013 to April 2015, were taken from both rural and urban areas. The mothers were also approached through house to house visit. Mothers were informed about the purpose of the study. The informed consent form was filled from each and every mother before onset of interview. The

data was collected by interview method by using self - semi structure and standardized questionnaire) based on guidelines of World Health Organization (WHO) on breastfeeding. The data was entered and analyzed using Micro Soft Excel and SPSS 16.0 version. The data was presented in percentage and chi-square test was used to find out the association between the mothers of rural-urban areas and their infant breastfeeding, exclusive breastfeeding and colostrum feeding practices. The evaluation criteria was also framed and standardized along with the formation of tool for the study. The responses were categorized under good and poor ranking. The following sections were used for critical evaluation:

- Exclusively breastfeeding for 6 months among the infants of working- non working mother of rural- urban areas.
- Continuity of breastfeeding to infants by working - non working mother of rural - urban areas.
- Frequency of breastfeeding among working - non working mothers of rural -urban areas.
- Prevalence of pregnancy among the mothers at the time of breastfeeding of rural- urban areas.
- Colostrums given as first pre lacteal feed among the infants of working - non working of mother of rural - urban areas.

Above sections which were critically evaluated were assessed by the following method:

Practices of feeding	Good	Poor
Exclusive breastfeeding	Upto 6 months	Not up to 6 months
Continuity of breast feeding	18 months	More or less than 18 months
Frequency of breastfeeding	With schedule	On demand
Pregnancy during breastfeeding period	Absence	Conceived
Colostrum as first pre lacteal feed	Within 1 hour of birth	Not given

## OBSERVATIONS AND ASSESSMENT

The result of the socio-demographic evaluation of the respondents shows that 240 infants upto the age of 30 months were carefully studied. Out of which 110 (45.8%) were male and 130 (54.2%) were female. Majority *i.e.* 149 (62.1%) infants ordinal position in family was second and 142 (59.2%) of infants belonged to joint family. A maximum 26.7% of urban working mothers were above graduate (holder of honors degree), whereas

in rural area, illiteracy prevailed at highest of 26.7% among the non working mothers. The result of the present study was categorized under eight main headings:

- Exclusively Breastfeeding for 6 Months among the infants of working -non working mother of rural-urban areas;
- Continuity of breastfeeding to infants of working-non working mother of rural -urban areas;
- Reason for Delay in Breastfeeding of infants of working -non working mother of rural- urban areas;
- Frequency of breastfeeding among infants of working- non working mother of rural-urban areas;
- Prevalence of pregnancy among the mothers at the time of the breastfeeding of rural-urban areas;
- Colostrum given as first per lacteal feed among the infants working - non working mother of rural- urban areas;
- Types of pre-lacteal feed given to the infants of working - non working mothers of rural-urban areas;
- Ranking good and poor breastfeeding practices among the mother's of infants.

### Exclusively breastfeeding for 6 months among the infants of working and non-working mother of rural and urban areas :

Exclusively breastfeeding is important for the infant. Exclusively breastfeeding means that infant is feed on breast milk only and nothing else (animal milk, food items, not even water). Therefore, infant is completely dependent upon mother for food supply. The mothers' milk nourishes the infant, which is necessary for the growth and

development of an infant. From the data in Table 1 it is shown that 96.7% of the mothers had exclusively breastfeed their infants. Whereas only 3.3% of the infants of working mothers were not breastfeed due to various reasons such as, malnourished mother, non- production of mother's milk, job conditions, mother's mental stress, infant's illness etc. Table 8 shows that the significant association was found among the mother of rural and urban areas in the exclusive breastfeeding practices ( $\chi^2=25.26, p=3.45$ ). Similar finding was observed in the studies of, Senarath *et al.* (2010); Singhal *et al.* (2013); Sultana *et al.* (2014); Ayisi *et al.* (2014); Mohammed (2014); Rahman *et al.* (2014), Vijayalakshmi *et al.* (2014); Solanki *et al.* (2015); Chinnasam *et al.* (2016); Kasahun *et al.* (2017) and Beyene *et al.* (2017). After studying them all concluded that the infants were exclusively breastfeeding for six months. Another study by Ryan *et al.* (2006) showed that 26.1% of the mothers who were employed full time had exclusively breastfeed their children as compare to non working mothers (35 %). The study by Nkrumah (2017) stated that the working mothers had exclusive breastfeed their infants from 0 to 6months without interference of their work.

### Continuity of breastfeeding to infants by working-non working mother of rural- urban areas:

The period of breastfeeding by mother to their infant varies in rural and urban areas. The data shown in the Table 2 reveals that the majority of 52.5% of mothers feed their infants for 18-24 months whereas 3.3% of the infants were fed for 6-12 months. In rural areas, 28.4%

**Table 1 : Exclusively breastfeeding for 6 months among the infants of working-non working mother of rural-urban areas**

Exclusively Breastfeeding	Working mothers		Non – working mothers		Total
	Urban	Rural	Urban	Rural	
Yes	55(91.7)	57(95.0)	60(100.0)	60(100.0)	232(96.7)
No	5(8.3)	3(5.0)	-	-	8(3.3)
Total	60 (100)	60 (100)	60 (100)	60 (100)	240(100.0)

Figure in parenthesis indicates percentage to total number

**Table 2 : Percentage distribution of continuity of breastfeeding of infants of working- non working mother of rural- urban areas**

No. of months	Working mothers		Non – Working mothers		Total
	Urban	Rural	Urban	Rural	
6-12	5 (8.3)	3 (5.0)	-	-	8 (3.3)
12-18	21 (35.0)	24 (40.0)	29 (48.3)	2 (3.3)	76 (31.7)
18-24	26 (43.3)	28 (46.7)	31 (51.7)	41 (68.3)	126 (52.5)
24-30	8 (13.3)	5 (8.3)	-	17 (28.4)	30 (12.5)
Total	60 (100.0)	60 (100.0)	60 (100.0)	60 (100.0)	240 (100.0)

Figure in parenthesis indicates percentage to total number

of non working mothers have breastfeed for 24- 30 months, whereas 8.3% of the working mothers breastfeed their infants for 24-30 months. In urban areas, majority *i.e.* 51.7% of the infants of non working mother were breastfeed, whereas 43.3% of the working mother breastfed their infants 18-24 months.

#### Reason for delay in breastfeeding of infants of working-non working mother of rural - urban areas:

Breastfeeding is important for infant as they are fully dependent on mother for their existence. Table 3 recorded the reasons for the delay in breastfeeding: insufficient milk, caesarian birth and infant illness. A majority of 56.2% of the infants were not breastfeed as insufficient milk was produced by mothers, whereas 36.7 % of mothers had given caesarian birth, so there was delay in breastfeeding. In urban areas, 76.7% of the working mothers produced insufficient milk due to malnutrition, whereas 33.3% of the non-working mothers were unable to breastfeed their infant due to above reasons. In rural areas, majority of the working mothers (93.3%) were unable to breastfeed their infants as compared to 21.7% of the non- working mothers. About 18.3% of the infants could not be breastfeeding due to their own illness. Similar to the present research, Oche *et al.* (2011), recorded the reason for the delay in initiation of breastfeeding, lack of breast milk and child illness. Another study by Singhal *et al.* (2013) that was different to the present study showed that most common reason of delay breastfeeding of infant is social customs and belief.

#### Frequency of breastfeeding among infants of working- non working mother of rural-urban areas:

The infants were breastfeed time to time to satisfy their hunger. Table 4 shows the interval of breastfeeding prevailing in both working and non working mothers of rural and urban areas. A majority (56.7%) of mother's breastfeed their infants within an interval of 3-4 hours. The non working mothers of both rural (30%) and urban (15%) areas breastfeed their infants at any time as per the demands of the infants. Lakati *et al.* (2002) stated that most of the mothers (95%) breastfeed their infants at least three times a day and only 23 mothers were reported for not being able to breastfeed their infants during the day. The study by Cacodcar *et al.* (2015) showed that 58% of the mothers had breastfeed their infants according to 'schedule', whereas 42% of the mothers had breast feed their infants 'on demand'.

#### Prevalence of pregnancy among the mothers at the time of the breastfeeding of rural-urban areas :

Table 5 presented the data regarding prevalence of pregnancy among the mothers during the breastfeeding period of infants. Majority 93.7% of the mothers were not pregnant whereas 6.3% of the mothers were found pregnant. The reasons given by the mothers for the prevalence of pregnancy were that the older generation also had large number of children in the family, desire to have male child, lack of knowledge about the methods of family planning etc. The reason given by the mother who were pregnant and stop breastfeeding during pregnancy

**Table 3 : Reason for delay in breastfeeding of infants of working-non working mother of rural- urban areas**

Type	Working mothers		Non-working mothers		Total
	Urban	Rural	Urban	Rural	
Insufficient milk	46 (76.7)	56 (93.3)	20 (33.3)	13 (21.7)	135 (56.2)
Caesarian	14 (23.3)	4 (6.7)	34 (56.7)	36 (60.0)	88 (36.7)
Infant illness	-	-	6 (10.0)	11 (18.3)	17(7.1)
Total	60 (100)	60(100)	60(100)	60(100)	240(100)

Figure in parenthesis indicates percentage to total number

**Table 4 : Frequency of breastfeeding among working -non working mothers of rural- urban areas**

Interval of feeding(hours)	Working mothers		Non-working mothers		Total
	Urban	Rural	Urban	Rural	
3-4	34 (56.7)	37(61.70)	34(56.7)	31(51.7)	136(56.7)
5-6	26 (43.3)	23 (38.3)	17 (28.30)	11 (18.3)	77(32.1)
Any time	-	-	9 (15.0)	18(30.0)	27 (11.2)
Total	60 (100.0)	60 (100.0)	60(100.0)	60(100.0)	240(100.0)

Figure in parenthesis indicates percentage to total number

was that breast is infected and milk produce by breast become harmful for the child. Chinnasam *et al.* (2016), also found that onset of pregnancy was sole cause to stopped early breastfeeding. The study by Oche *et al.* (2011) stated that one mother out of 23 had stopped breastfeeding before six months due to onset of pregnancy. Due to cultural belief that new pregnancy produces the milk that is contaminated and harmful to the child hence it needs to put off the breast milk from child.

### Colostrum given as first pre lacteal feed among the infants working - non working mother of rural-urban areas :

Colostrum is known as the first yellow coloured milk which is rich in antibodies and helps in boosting the immunity of the newly born infant. The colostrum is low in fat and rich in carbohydrate. It is easily digestible by the infant. The colostrum given by mothers to their infants' during first 24 hours Therefore, it is essential to give colostrums as first pre lacteal fed given by the mothers to the new born. Table 6 recorded the data's regarding the first pre lacteal fed given by mothers to infants. Overall 67.5% of the mothers had given colostrum as a first pre lacteal fed whereas 32.5% of the mothers had given other pre lacteal feed (honey, water etc.) to their infants.

Because of the elder person in the family didn't allow her to give colostrums to their infants. Other reasons for not giving colostrum were superstition and cesarian birth. In Table 8 it is shown the significant association was found among the mothers of rural and urban areas and colostrum feeding practices ( $\chi^2 = .955, p=3.45$ ). Finding of Mahmood *et al.* (2012) consistent with that of present study showed about 84.6% of mothers fed colostrums to their infants. The study by Gupta and Chhabra (2015) mentioned that 79.4% of the mothers had given colostrum as first pre lacteal feed. The study by Chandwani *et al.* (2015) revealed that only 42% of the infants were given pre lacteal feed.

### Types of pre lacteal feed given to the infants of working - non working mothers of rural-urban areas:

The pre lacteal feed beside colostrum was named as "ghutti". Ghutti include honey and religious water that were given by mothers to their infants. As per Table 8, majority of 66.7% of the mothers had given honey as a pre lacteal feed and rest 33.3% of infants' mothers gave religious water. In urban areas, 83.3% of the working mothers had given honey as pre lacteal feed and 16.7% of the working mothers gave water as pre lacteal feed. Findings of the present study are in consistence with many

**Table 5: Prevalence of pregnancy among the mothers during the breastfeeding period of infants of rural-urban areas**

Type	Working mothers		Non – working mothers		Total
	Urban	Rural	Urban	Rural	
Yes	-	-	-	15(25.0)	15(6.3)
No	60(100.0)	60(100.0)	60(100.0)	45(75.0)	225(93.7)
Total	60 (100.0)	60(100.0)	60(100.0)	60(100.0)	240(100.0)

Figure in parenthesis indicates percentage to total number

**Table 6 : Colostrum given as first pre lacteal feed among the infants working - non working mother of rural- urban areas**

Pre lacteal feed	Working mothers		Non – working mothers		Total
	Urban	Rural	Urban	Rural	
Colostrum	48 (80.0)	37 (61.7)	43 (71.7)	34 (56.7)	162 (67.5)
Other	12 (20.0)	23 (38.3)	17 (28.3)	26 (43.3)	78 (32.5)
Total	60 (100.0)	60 (100.0)	60 (100.0)	60 (100.0)	240 (100.0)

Figure in parenthesis indicates percentage to total

**Table 7 : Types of pre lacteal feed given to the infants of working and non working mothers of rural and urban areas**

Type	Working mothers		Non – working mothers		Total
	Urban	Rural	Urban	Rural	
Honey	10 (83.3)	8 (34.8)	16 (94.1)	18(69.2)	52(66.7)
Water	2(16.7)	15(65.2)	1(5.9)	8(30.8)	26(33.3)
Total	12(100.0)	23(100.0)	17 (100.0)	26 (100.0)	78(100.0)

Figure in parenthesis indicates percentage to total number

**Table 8 : Association of feeding practices and infants of rural and urban areas**

Feeding practices	Status	Rural infants	Urban infants	Total	2 p-value
Exclusive breast feeding	Yes	117(48.75%)	115(47.92%)	232(96.67%)	25.26*
	No	3(1.25%)	5(2.08%)	8(3.33%)	
	Total	120(50%)	120(50%)	240(100%)	
Colostrum feeding	Yes	49(20.41%)	29(12.08%)	78(32.5%)	.955*
	No	91(37.92%)	71(29.58%)	162(67.5%)	
	Total	140(58.33%)	100(41.66%)	240(100%)	

\* indicates significance of value at P=0.05

**Table 9 : Overall evaluation of feeding practices prevailing among the working- non working mothers of rural –urban areas**

Feeding Practices	Good	Poor
Exclusive breastfeeding	Non-working mothers urban –rural areas	Working mothers urban areas.
Continuity of breast feeding	Non-working mothers of urban areas.	Less than 18 months- working mothers of urban areas.
Good upto 18 months		More than 18 months-non working mothers rural areas.
Poor less than 18 months		
More than 18 months		
Frequency of breastfeeding	Working mothers of rural areas.	Non-working mothers of rural areas.
Pregnancy during breast feeding period	Working mothers of rural-urban areas, non working mothers urban areas.	Non-working mothers of rural areas.
Colostrum as first pre lacteal feed	Working mothers of urban areas.	Non-working mothers of rural areas.

other studies. About one-quarter of the respondents mothers have given “ghutti” (boiled water, tea, animal milk, honey etc) as the per-lacteal fed to their child. Oche *et al.* (2011); Singhal *et al.* (2013); Mahmood *et al.* (2012); Karnawat *et al.* (2015) and Chinnasam *et al.* (2016).

### Critical evaluation of feeding practices among the mothers of infants :

The study reflected the feeding practices among the mothers which were ranked good and poor breastfeeding practices as shown in Table 9. Almost all non working mothers were good in exclusive feeding of their infant for 6 months whereas poor rating was prevailing among the working mothers of urban areas. The continuity of breastfeeding of infants till 18 months was good among the non-working mothers of urban areas, whereas the poor rating was rated among working mothers of rural areas (continuity breastfeeding less than 18 months) and non-working mothers of rural areas (continuity of breastfeeding were more than 18 months). The working mothers of rural fed their infants according to the “schedule” were rated good whereas poor rating was given to non-working mother of rural areas who had breastfeeding their infants “on demand”. Almost all the working - non working mothers of rural - urban areas

were not pregnant during the period of breastfeeding were ranked as good, whereas poor ranked was given to few non-working mothers of rural areas who had conceived during the period of breastfeeding. The working mothers of urban areas had fed colostrum as the first pre lacteal feed to their infants were rated good while non-working mothers of rural areas rated poor as not fed colostrum as first pre lacteal fed.

### Conclusion

The present study revealed that although the exclusive breastfeeding practice was reasonably good among the infant of working -non working mothers of rural –urban areas. The finding of the study showed there was significant association between the breastfeeding and colostrum feeding among the mothers of rural- urban areas. These significant associations indicate faulty feeding practice and knowledge prevails in rural-urban areas. Faulty feeding practices such as discard of colostrum, feeding any time on demand of child, other pre lacteal fed beside colostrum. Whereas the lack of knowledge among the non-working mothers of rural areas leads to pregnancy which affect the breastfeeding practices and health of infant. The study suggests proper education related to feeding practices should be given to the mother.

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