



## A COMPARATIVE STUDY OF BREASTFEEDING PRACTICES AMONG WORKING AND NON-WORKING WOMEN ATTENDING A TERTIARY CARE HOSPITAL, MYSURU

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## ABSTRACT

**Introduction:** Breastfeeding plays a very important role in determining the growth and development of the infant. Considering women's empowerment, increased women workforce in India, this study was conducted with the objective of comparing infant feeding practices among working and non-working women.

**Methods:** The present study is a hospital based cross-sectional comparative study using purposive sampling with a sample size of 214, 107 in each arm of working and non-working mothers of the children aged between 13-24 months, attending the immunization centre of the Paediatric Medicine department in JSS Hospital, Mysuru from January 2014 to December 2014.

**Results:** Majority among both the groups were found to be below 25 years of age. 53.3% of the non-working and 42.1% of the working women had initiated breastfeeding within one hour of birth. 95.3% of non-working women and 97.2% of the working women had fed their children with colostrum.

**Conclusion:** Exclusive breastfeeding rate was quite higher among the non-working group compared to the working group of women. Mother's education, socio-economic status, type of family, type of delivery, birth order were the factors found to have influence on breastfeeding practices in the present study.

**Key Words:** Working women, pre-lacteal feeds, breastfeeding initiation, exclusive breastfeeding

## INTRODUCTION

Breast milk is considered to be the best milk for infants. It is well suited for the needs of infants. Breastfeeding plays a very important role in determining the growth and development of the infant. Factors in breast milk protect infants from a wide variety of illnesses. Children who have been breastfed have less risk of becoming overweight or obese, even as adults. Breastfeeding reduces the incidence, and severity of a large number of infections, including pneumonia and meningitis in infants. Breastfeeding protects infants against a variety of illnesses, such as diarrhea and infant botulism. Breastfed babies have less chance of allergies, asthma and eczema. Evidence suggests that exclu-

sive breastfeeding for at least two months protects susceptible children from Type I insulin dependent diabetes mellitus (DDM).<sup>1</sup> Colostrum is the special milk that is secreted in the first 2-3 days after delivery. Colostrum is rich in white cells and antibodies, especially sIgA, and it contains a larger percentage of protein, minerals and fat-soluble vitamins (A, E and K) than later milk.

Exclusive breastfeeding for the first 6 months can help in child spacing among women who do not use contraceptives (The Lactation Amenorrhea Method). Breastfeeding reduces the risk of breast and ovarian cancer. Breastfeeding may reduce the risk of osteoporosis. The cost of infant formula has

increased 150 percent since the 1980's. Breastfeeding reduces health care costs.<sup>1</sup>

In India the status of IYCF practices are as follows: early initiation of breastfeeding-40%, exclusive breastfeeding for first six months-46.3%.<sup>2</sup>

Increased female literacy rate to 65.46%<sup>3</sup> (2011 census) and rapid urbanization has increased the workforce participation rate of females in rural sector to 26.1% and to 13.8% in the urban sector.<sup>4</sup>

A woman's ability to breastfeed is markedly reduced when she returns to work if breastfeeding breaks are not available, if quality infant care near her workplace is inaccessible or unaffordable, and if no facilities are available for pumping or storing milk.<sup>5</sup>

Keeping in mind women's empowerment, increased women workforce in India, this study was conducted with the objective of comparing infant feeding practices among working and non-working women. An attempt is being made to describe and compare the factors influencing breastfeeding practices among working and non-working women.

## OBJECTIVES

The objectives of the study were to assess and compare breastfeeding practices among working and non-working women and to describe and compare the factors influencing breastfeeding practices among working and non-working women.

## MATERIALS & METHODS

The study was conducted at the JSS Hospital which is a tertiary care hospital located in M.G .Road, Mysuru. The study was conducted in the Immunization Centre of the Dept. of Paediatric Medicine, J.S.S. Medical College, Mysuru.

The present study is a hospital based cross-sectional comparative study conducted among working and non-working mothers of the children aged between 13-24 months attending the immunization centre of the Paediatric Medicine department in JSS Hospital, Mysuru for a period of one year from January 2014 to December 2014.

All women attending the immunization centre having children aged between one to two years and all working women engaged in income generating activity (occupation) for at least one year were included in the study. Mothers of children who were severely ill were excluded from the study.

The sample size is calculated from the following formula  $n=2pq (Z\alpha+Z\beta)^2/d^2$ , considering  $p_1=28.43\%$  (prevalence of exclusive breastfeeding among non-working women) and  $p_2=13.6\%$  (prevalence of exclusive breastfeeding among working women), by substituting the values,  $n=107$  in each arm.

Purposive Sampling was done to select the subjects. A pretested structured questionnaire by interview method was used to assess the socio-demographic factors influencing infant feeding practices among working and non-working women.

The questionnaire included general information like mother's and father's name, age of the mother and the child, sex of the child, religion, education of the mother and the father, occupation of the mother and the father, place of residence, type of family, income of the family and total family members.

**Socio-economic status (SES):** It is classified according to **Modified BG Prasad's Classification**.<sup>8</sup> Breast feeding practices included questions regarding initiation of breastfeed, colostrum feed, pre-lacteal feeds, duration of exclusive breastfeeding, schedule of feeding, position preferred while feeding.

Ethical Clearance was obtained from the IEE (Institution Ethics Committee) for the study. Informed written consent was obtained from the study participants after explaining them about the purpose of conducting the study in their local language.

The data collected was entered in epi-data version 3.1. Data was analyzed using SPSS software version 22. Chi-square test was used to find the association between socio-demographic characteristics among working and non-working women.

## RESULTS

Total 214 women were included in the study. Table 1 shows that majority of the working mothers were educated and 47.8% of them were graduated and belonged to Class I socio-economic status and the associations were found to be statistically significant.

Table 2 shows that in both the groups 29% of the mothers had given pre-lacteal feeds to their children. It was observed that among the non-working women, 77.5% of them gave sugar water, 22.5% of them gave honey as pre-lacteal feeds. Among working women, 66.6% of them had given sugar water, 23.3% of them gave honey and 0.1% of them gripe water.

**Table 1: Distribution of the study subjects based on their socio-demographic characteristics**

Characteristics	Non-working mothers (n=107)	Working mothers (n=107)	Total (n=214)	P value
<b>Mother's education</b>				
Illiterate	08 (7.5)	02 (1.9)	10 (4.7)	
Primary	32 (29.9)	10 (9.4)	42 (19.6)	
Secondary	38 (35.5)	11 (10.3)	49 (22.9)	
Pre-University	24 (22.4)	30 (28.0)	54 (25.2)	
Graduation	05 (4.7)	51 (47.6)	56 (26.2)	
Post-graduation	00 (0.0)	03 (2.8)	03 (1.4)	
<b>Mother's Age (years)</b>				
≤25	83 (77.6)	58 (54.2)	141 (65.9)	<0.001*
≥26	24 (22.4)	49 (45.8)	73 (34.1)	
Total	107 (100.0)	107 (100.0)	214 (100.0)	
<b>Type of Family</b>				
Nuclear	81 (75.7)	64 (59.8)	145 (67.8)	<0.001*
Joint	18 (16.8)	14 (13.1)	32 (15.0)	
Three Generation	8 (7.5)	29 (27.1)	37 (17.2)	
<b>Socio-economic status</b>				
Class I	24 (22.4)	70 (65.4)	94 (43.9)	<0.001*
Class II	54 (50.5)	33 (30.8)	87 (40.7)	
Class III	25 (23.3)	04 (3.7)	29 (13.6)	
Class IV	04 (3.7)	00 (0.0)	04 (1.8)	

^χ<sup>2</sup> test. \*P-value <0.05 significant. Figures in parenthesis indicate percentages.

**Table 2: Distribution of study subjects based on history and type of pre-lacteal feeds given**

Practices	Non-working mothers (n=107)	Working mothers (n=107)	Total (n=214)	P value
<b>Pre-lacteal feeds given</b>				
Yes	31 (29.0)	31 (29.0)	62 (29.0)	1.000
No	76 (71.0)	76 (71.0)	152 (71.0)	
<b>Type of pre-lacteal feeds given</b>				
Sugar water	24 (22.5)	20 (18.7)	44 (20.6)	0.187
Honey	07 (6.6)	07 (6.6)	14 (6.6)	
Gripe water	00 (0.0)	03 (2.8)	03 (1.4)	

^ -χ<sup>2</sup> test. Figures in parenthesis indicate percentages.

**Table 3: Distribution of study subjects based on breastfeeding practices**

Practices	Non-working mothers (n=107)	Working mothers (n=107)	Total (n=214)	P value
<b>Initiation of breastfeeding (hrs)</b>				
Within 1 hr	57 (53.3)	36 (33.6)	93 (43.5)	0.05*
1-6	36 (33.6)	45 (42.1)	81 (37.9)	
6-12	08 (7.5)	17 (15.9)	25 (11.7)	
12-24	02 (1.9)	05 (4.7)	07 (3.3)	
24-48	02 (1.9)	03 (2.8)	05 (2.2)	
48-72	02 (1.9)	01 (0.9)	03 (1.4)	
<b>Colostrum</b>				
Given	102 (95.3)	104 (97.2)	206 (96.3)	0.712
Not given	05 (4.7)	03 (2.8)	08 (3.7)	
<b>Exclusive breastfeeding</b>				
Yes	50 (46.7)	17 (15.9)	67 (31.3)	<0.001*
No	57 (53.3)	90 (84.1)	147 (68.7)	
<b>Continued breastfeeding at 1 year</b>				
Yes	23 (21.5)	00 (0.0)	23 (10.7)	<0.001*
No	84 (78.5)	107 (100.0)	191 (89.3)	

^ -χ<sup>2</sup> test. \*P-value <0.05 significant. Figures in parenthesis indicate percentages.

**Table 4: Distribution of study subjects based on the type of other milk given during first 6 months**

Other milk given	Non -working women (n=52)	Working women (n=88)	Total (n=140)	P value
Cow's milk	41 (78.8)	47 (53.4)	88 (62.9)	0.003*
Buffalo milk	08 (15.4)	17 (19.3)	25 (17.9)	
Formula milk	03 (5.8)	24 (27.3)	27 (19.2)	

^ -χ<sup>2</sup> test. \*P-value <0.05 significant. Figures in parenthesis indicate percentages.

**Table 5: Factors influencing exclusive breastfeeding among non-working and working women**

Factors influencing IYCF	Non-working women		P value	Working women		P value
	EBF (%)	No EBF (%)		EBF (%)	No EBF (%)	
<b>Mother's age</b>						
<25 years	42(84.0)	41(71.9)	0.135	09(52.9)	49(54.4)	0.909
>25 years	08(16.0)	16(28.1)		08(47.1)	41(45.6)	
<b>Mother's education</b>						
Illiterate	06(12.0)	02(3.5)	0.363	01(5.9)	01(1.1)	0.503
Primary	17(34.0)	15(26.3)		03(17.6)	07(7.8)	
Secondary	16(32.0)	22(38.6)		01(5.9)	10(11.1)	
Pre-university	09(18.0)	15(26.3)		04(23.5)	26(28.9)	
Graduation	02(4.0)	03(5.3)		08(47.1)	43(47.8)	
Post-graduation	00(0.0)	00(0.0)		00(0.0)	03(3.3)	
<b>Location</b>						
Rural	16(32.0)	19(33.3)	0.883	04(23.5)	13(14.4)	0.467
Urban	34(68.0)	38(66.7)		13(76.5)	77(85.6)	
<b>Family</b>						
Nuclear	39(78.0)	42(73.7)	0.762	07(41.2)	57(63.3)	0.07
Joint	07(14.0)	11(19.3)		05(29.4)	09(10.0)	
Three generation	04(8.0)	04(7.0)		05(29.4)	24(26.7)	
<b>Socio-economic status</b>						
Class I	12(24.0)	12(21.1)	0.359	11(64.7)	59(65.6)	0.147
Class II	21(42.0)	33(57.9)		04(23.5)	29(32.2)	
Class III	15(30.0)	10(17.5)		02(11.8)	02(2.2)	
Class IV	02(4.0)	02(3.5)		00(0.0)	00(0.0)	
<b>Type of delivery</b>						
Normal	34(68.0)	40(70.2)	0.808	08(47.1)	55(61.1)	0.28
Caesarean-section	16(32.0)	17(29.8)		09(52.9)	35(38.9)	
<b>Birth order</b>						
1	42(84.0)	40(70.2)	0.12	11(64.7)	68(75.6)	0.335
2	08(16.0)	14(24.6)		05(29.4)	21(23.3)	
3	00(0.0)	03(5.3)		01(5.9)	01(1.1)	

^ - $\chi^2$ test. \*P-value <0.05 significant. Figures in parenthesis indicate percentages. (EBF - Exclusive Breast Feeding)

The percentage of non-working women (53.3) who initiated breast feeding within one hour after birth was higher than that of non-working women (33.6) ( $p = 0.05$ ). It was found that the percentage of non-working women (46.7) who followed exclusive breast feeding was higher than that of working women (15.9) ( $p < 0.001$ ). None of the working women continued breast feeding at one year while 21.5% of non-working women did ( $p < 0.001$ ).

Table 4 shows that among non-working mothers majority of the mothers gave cow's milk and though it was same with working mothers the number of working mothers who fed their babies with formula milk was 27.3% and the association was found to be statistically significant.

Mothers' education, type of family, type of delivery, socio-economic status and birth order were the factors found to have influence on IYCF practices.

## DISCUSSION

According to NFHS-3 report (2005-2006),<sup>2</sup> 57% of the new born received pre-lacteal feeds. In our study it was found that 29% of the mothers in both the groups had given pre-lacteal feeds. The findings are lower when compared to NFHS-3 report,

increased literacy rate among mothers could be one of the reasons for the findings.

Among the non-working women, 77.5% of them gave sugar water, 22.5% of them gave honey as pre-lacteal feeds. Among working women, 66.6% of them had given sugar water, 23.3% of them gave honey and 0.1% of them gripe water. Family customs is one of the main reason for giving pre-lacteal feeds in our study but they are the main reason for causing infections. This is similar to the findings observed in a study conducted by Nitin Joseph et al<sup>9</sup> in 2005 and Kulkarni et al<sup>10</sup> in Mumbai in 2004, where the pre-lacteal feeding rate was observed to be 33.5% and 31.6% respectively. In a study conducted at Davangere city by Shubha DB<sup>11</sup> among working and non-working mothers, it was observed that 6% of working and 11% of non-working mothers gave pre-lacteal feeding. This is lower when compared to the present study.

Most common substance used for pre-lacteal feeding was sugar water which was similar to the findings in the studies conducted by Nitin Joseph et al<sup>9</sup>, Srivastava SP et al<sup>12</sup> and Sinhababu A et al.<sup>13</sup> However it was diluted milk in Awasthi NN et al<sup>14</sup> study, it was Ghutti in Chaturvedhi Met al<sup>15</sup>, and in studies done in Bhosale NA<sup>16</sup> study and Das P et al<sup>17</sup> it was honey.

According to IYCF guidelines 2006, Government of India recommends initiation of breastfeeding should begin immediately after birth, within one hour of birth.<sup>18</sup>

In the present study it was found that among the non-working women, 53.3% of them had breastfed their child within 1 hour, 33.6% of them from 1-6 hours. Among the working group, 42.1% of them had breastfed their child from 1-6 hours followed by 33.6% of them who breastfed within one hour. In India according to NFHS-3<sup>2</sup> report early initiation rate is 40%.

Early initiation rate among non-working group is higher than NFHS-3 report but lower among working group of women. The reasons for lower rate among working women could be higher rate of caesarean sections and baby in NICU. The early initiation rate in the studies of Devang Raval et al<sup>18</sup> and Sinhababu A et al<sup>13</sup> were 38% and 13.6% respectively. In a study done in Singapore by Gary Ong,<sup>19</sup> it was found that working status had no effect on initiation of breastfeeding, 95.2% of the working mothers' breastfed their children. Ryan and co-researchers<sup>20</sup> demonstrated that breastfeeding rates in the immediate post delivery period among part-time and full time working women were closer at 68.8% and 65.5% respectively.

In the present study it was found that the EBF rate among non-working group is similar to NFHS-3<sup>2</sup> report (46.3%) whereas it is much lower among the working women. Working status of women has reduced the duration of exclusive breastfeeding.

A meta-analysis by Arun Gupta<sup>22</sup> and Y. P. Gupta<sup>22</sup> showed that more than half the children (54%) in the age group of 0-3 months were exclusively breastfed whereas this percentage was much lower (26%) for children in the age group of 4-6 months. A similar study done by Rajesh et al<sup>23</sup> in Gujarat revealed that 37% of the infants were exclusively breastfed and also inferred that the factors influencing breastfeeding were parental education, number of deliveries by the mother and the maternal age.

The study in South East Ethiopia by Tesfaye et al<sup>24</sup> indicated a significant difference among employed and unemployed mothers with regard to exclusive breastfeeding (33% vs 73%) and also revealed that unemployment of the mothers is a predictor of exclusive breastfeeding.

Shubha DB<sup>11</sup> in her study observed that 16% of the working and 62% of the non-working women had exclusively breastfed their children.

In a study done by Amir Marooj Khan<sup>25</sup>, in UHC in East Delhi, observed that 57% of the participants followed exclusive breastfeeding.

A study done in Nigeria among medical women by A. E. Sadoh<sup>26</sup> showed that 11.1% of the study participants had practiced exclusive breastfeeding and working status of the women was the main reason for reduced rate of exclusive breastfeeding.

Ashmika Motee et al<sup>27</sup> in their study observed that only 17.9% of the mothers followed exclusive breastfeeding and the major barrier was found to be their employment status.

## CONCLUSIONS

The prevalence of optimal feeding practices was higher among non-working women compared to the working women. Though the initiation of breastfeeding among working women did not differ from that of non-working women, exclusive breastfeeding rate was higher among the non-working group compared to the working group of women.

Mother's education, socio-economic status, type of family, type of delivery, birth order were the factors found to have influence on breastfeeding practices in the present study.

## LIMITATIONS

Prevalence of breastfeeding practices in the present study is based on a small sample size and the present study being a hospital-based study the chance of selection bias exists and the sample cannot represent the general population.

Results of present study cannot be generalized due to the differences in socio-economic status, dietary habits and cultural practices existing in the country.

## RECOMMENDATIONS

Mothers should be educated about the harmful effects of pre-lacteal feeds and discourage them from feeding their infants with pre-lacteal feeds. Measures should be taken to provide facilities at the work place for the mother to feed their babies confidently. Hospitals, health centers and nursing homes should promote the guidelines of BFHI and train all the medical and paramedical staff regarding the guidelines of BFHI. Family members should be involved to support the mother in feeding the baby optimally.

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