

# Breast-feeding Counselling and Its Effect on the Prevalence of Exclusive Breast-feeding

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## ABSTRACT

This prospective intervention study was undertaken to assess the impact of repeated breast-feeding counselling on the rate of exclusive breast-feeding up to five months. The study was carried out in two breast-feeding counselling sub-centres, established at the community level in the vicinity of two maternity facilities and one main centre established in an urban children hospital. Eighty-four pregnant mothers who attended the maternity facilities for delivery of babies were randomly selected and repeatedly counselled regarding breast-feeding—once just before delivery and subsequently at the completion of 1, 2, 3, 4, 5, 6, 9, and 12 month(s) of age of the child. These child-mother pairs comprised the intervention group. Another group of 90 child-mother pairs was selected from the maternity facilities. Mothers in this group (comparison group) received a single session of breast-feeding counselling just before delivery of babies. Fifty-nine and 55 child-mother pairs in the intervention and the comparison groups respectively completed the one-year follow-up. In the intervention group, 54.2% and in the comparison group 36.4% of the babies were exclusively breastfed up to five months of age. Forty-two (88%) children in the intervention group and 29 (53%) in the comparison group were given complementary foods at the optimum time, e.g. after completion of five months, and 81% of the children in the intervention group and 100% of the children in the comparison group were given complementary foods in the first year of life. It was observed that repeated organized breast-feeding counselling significantly improved the prevalence of exclusive breast-feeding to 54% which is much above the existing national prevalence (12.7%) in Bangladesh.

**Key words:** Breast-feeding; Counselling; Interventions; Prospective studies; Impact studies; Bangladesh

## INTRODUCTION

Breast-feeding is the fundamental component of the child-survival strategy. It has been estimated that 1.3 million deaths could be prevented each year if babies were exclusively breastfed for the first months followed by appropriate complementary feeding at least in the first year of life (1). Exclusive breast-feeding for five

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months with colostrums being fed [which is termed as the first immunization] (2) and continuing breast-feeding for at least two years are crucial for survival, growth, and development of children (3). The beneficiaries of breast-feeding are not only the child, but also the mother, the family, and the society as a whole. Exclusive breast-feeding reduced mortality due to diarrhoea 11-fold in infants of poor mothers in urban Dhaka, Bangladesh (2) and urban slums in Lima, Peru (4). Risk of mortality from diarrhoea is 25 times higher in infants aged 0-2 month(s), who are not breastfed, compared to infants who are exclusively breastfed (5). In Bangladesh, studies have focused on protective effect of breast-feeding against most causal agents of diarrhoea. The most

convincing effect of breast-feeding has been found in the case of cholera and shigellosis (6). Breast-feeding also reduces fertility. Exclusively breast-feeding women with lactational amenorrhoea are 98% protected from pregnancy for six months after delivery (7).

Although Bangladesh is traditionally regarded as a country with widespread breast-feeding, the practice continues to be improper as different studies observed (8). In a recent study (9) conducted in Bangladesh to estimate the national prevalence of breast-feeding practices, some major problems with breast-feeding were identified: colostrum is often rejected and breast-feeding begins on the second or third day after birth; pre-lacteal feeds are almost universal; exclusive breast-feeding, which is recommended up to five months, is very rare; 39% of children were given complementary feeding within four months of age. As many as 41% of infants aged over six months are fed virtually nothing else but breastmilk until the age of two years. Bottle-feeding is prevalent mainly in the urban areas. Healthcare providers promote the idea of 'insufficient milk' and encourage women to bottlefeed. These problems can be overcome by counselling mothers and other relevant family members regarding breast-feeding through well-organized counselling centres established especially at the community level so that mothers have an easy access. This study shows the impact of repeated breast-feeding counselling on the rate of exclusive breast-feeding.

#### MATERIALS AND METHODS

This prospective intervention study was carried out during March 1998-February 2000. Two breast-feeding counselling centres (sub-centres) were established in the vicinity of two maternity centres. Another centre (main centre) was established in a children hospital in the Dhaka city. Two groups of mother-child pairs were randomly selected following the convenient sampling method as there was no sampling frame. All the expectant mothers coming to the maternity centres for delivery of babies during the study period were recruited. Informed consents of the mothers were taken. The dyads were distributed into two groups. In the intervention group, there were 84 expectant mothers who were counselled and motivated for breast-feeding once before delivery of the babies. Subsequently, these mothers attended the breast-feeding counselling sub-centres after completion of 1, 2, 4, and 5 month(s) and at the main centre after completion of 3, 6, 9, and 12 months of age of the child. In each visit, the mothers

were counselled regarding breast-feeding. They were advised that: (a) the baby has to be kept in the right position; eyes should be in direct contact with the mother's; and the mother should sit in an easy position, (b) frequency of suckling should be increased; each episode of suckling should be for at least 15 minutes, (d) the baby should be in close skin-to-skin contact with the mother, (e) the nipple and most of the areola should be introduced inside the mouth of the infant, (f) the mother should be relaxed and free of tension, (g) the mother should be motivated and convincingly assured that she is able to produce enough milk for the baby (what is required is her determination to breastfeed the baby), (h) the mother should eat extra food with a concept that she needs extra energy to produce milk for the baby, (i) the mother should take enough fluid in the form of water, milk, fruit-juice, etc., and (j) treatment for illness of mother, if any, is also important.

In the comparison group, 90 expectant mothers were selected from the two sub-centres. They were counselled only once before birth of their babies. These mothers again attended the main centre on completion of 12 months of age of their children. In both the groups, children with congenital anomalies, women with gestational age less than 37 completed weeks, birth-weight less than 2 kg, and those with severe perinatal asphyxia were excluded from the study. The sample size was calculated on the basis of the national prevalence of exclusive breast-feeding (12.7%), aiming at raising the level up to 50% by breast-feeding counselling and using the following formula:

$$N = \frac{P_1(100 - P_1) + P_2(100 - P_2)}{(P_1 - P_2)^2} * \text{Factor of } \alpha, \beta$$

where,  $P_1$  = Percentage of success expected for the control = 12.7% (as per existing prevalence in Bangladesh)

$P_2$  = Percentage of success expected for the experimental treatment, power of 90% and significance level of 5%.

$$\begin{aligned} N &= \frac{13(100 - 13) + 50(100 - 50)}{(50 - 13)^2} * 10.5 \\ &= \frac{13(100 - 13) + 50(100 - 50)}{(50 - 13)^2} * 10.5 \\ &= \frac{13 * 87 + 50 * 50}{37^2} * 10.5 \\ &= 28 \end{aligned}$$

Data were collected on breast-feeding and complementary feeding following the indicators of breast-feeding practices

as defined by the World Health Organization (10). Data on sociodemographic characteristics of the mothers were also collected. Analysis of data was done using SPSS programme, and  $p < 0.05$  was considered significant.

### RESULTS

The mothers were distributed into three age groups: below 20 years, 20-30 years, and above 30 years. In the below 20-year age group, 14 (23.7%) and 8 (14.5%) and in the 20-30-year age group, 17 (28.8%) and 12 (21.3%) mothers in the intervention and comparison groups respectively exclusively breastfed their babies. The maximum number of mothers was in the 20-30-year age group (Table 1).

(90%) of 55 mothers were housewife, and of them, 18 (32.7%) exclusively breastfed their children (Table 3).

Ninety-one percent of the mothers in the intervention and 94% in the comparison group were Muslims. There were a few Hindus, but no other religious groups were there. There was no significant difference in the rate of exclusive breast-feeding in the two religious groups (Table 4).

There were high rates of colostrum feeding in both intervention (100%) and comparison (98.2%) groups (Table 5).

In the intervention and comparison groups, respectively, 48 (81%) and 55 (100%) children were

**Table 1.** Age of mothers and type of breast-feeding

Age (years)	Type of breast-feeding	Intervention group (n=59)		Comparison group (n=55)	
		No.	%	No.	%
<20	Exclusive	14	23.7	8	14.5
	Non-exclusive	8	13.6	10	18.2
20-30	Exclusive	17	28.8	12	21.3
	Non-exclusive	17	28.8	24	43.6
>30	Exclusive	1	1.7	0	-
	Non-exclusive	2	3.4	1	1.8

Statistically not significant ( $p=0.10$ )

**Table 2.** Education of mothers and type of breast-feeding

Education	Type of breast-feeding	Intervention group (n=59)		Comparison group (n=55)	
		No.	%	No.	%
Illiterate	Exclusive	7	11.9	2	3.6
	Non-exclusive	1	1.7	1	1.8
0-Class V	Exclusive	3	5.1	1	1.8
	Non-exclusive	5	8.5	3	5.5
Class VI-X	Exclusive	12	20.3	7	12.7
	Non-exclusive	6	10.2	12	21.8
SSC and above	Exclusive	10	16.9	10	18.2
	Non-exclusive	15	25.4	19	34.5

Statistically significant ( $p=0.03$ )

Seven (87%) of 8 illiterate mothers in the intervention group and 2 (67%) of 3 illiterate mothers in the comparison group exclusively breastfed their babies. Twenty-five (42.5%) and 19 (32.7%) mothers in the intervention and comparison groups respectively were educated at SSC level and above. A comparatively less number of mothers in this group exclusively breastfed their babies (Table 2).

Fifty-five (93%) of 59 mothers in the intervention group were housewife. Of them, 32 (54.2%) exclusively breastfed up to five months. In the comparison group, 50

**Table 3.** Occupation of mothers and exclusive breast-feeding

Occupation	Intervention group (n=59)		Comparison group (n=55)	
	No.	%	No.	%
Housewife	32	54.2	18	32.7
Working mothers	0*	-	2	3.6

Not significant ( $p=0.14$ )  
\* Number of working mothers was small, and none exclusively breastfed the baby

given complementary food within the first year of life. Three (6%) children in the intervention group and 5 (9%)

in the comparison group were on complementary feeding before the 5th month of age. Forty-two (88%) children in the intervention group and 29 (53%) in the comparison

**Table 4.** Exclusive breast-feeding and religion of mothers

Religion	Intervention group (n=59)		Comparison group (n=55)	
	No.	%	No.	%
Muslim	29	49.2	20	36.4
Hindu	3	5.1	0	-
Not significant (p=0.63)				

**Table 5.** Incidence of colostrum feeding

Colostrum	Intervention group (n=59)		Comparison group (n=55)	
	No.	%	No.	%
Given	59	100	54	98.2
Not given	0	-	1	1.8

group were given complementary food at the optimum time, i.e. after completion of five months (Table 6).

**Table 6.** Starting age of complementary feeding

Age (months)	Intervention group (n=48)		Comparison group (n=55)	
	No.	%	No.	%
<5	3	6.25	5	9.1
5	3	6.25	10	18.2
6	42	87.5	29	52.7
>6	0	-	11	20
Not significant (p=0.15)				

**Table 7.** Prevalence of breast-feeding during illness of the children

Breast-feeding	Intervention group (n=59)		Comparison group (n=59)	
	No.	%	No.	%
Continued	46	77.9	51	92.7
Not continued	13	22.1	4	7.3
Not significant (p=0.18)				

**Table 8.** Prevalence of exclusive breast-feeding up to five months

Time after birth (months)	Intervention group (n=59)		Comparison group (n=55)	
	No.	%	No.	%
1	45	70.30	55	100
2	41	67.21	37	67.3
3	39	65.00	31	56.4
4	34	56.66	27	49.1
5	32	54.23	20	36.4
$\chi^2=3.66$				
Not significant (p=0.06)				

About 78% and 93% of the mothers in the intervention and comparison groups respectively continued breast-feeding during illnesses of their children, such as in diarrhoea and acute respiratory infections (ARI) (Table 7).

54.2% of the mothers in the intervention and 36.4% in the comparison groups exclusively breastfed their babies up to five months (Table 8).

## DISCUSSION

Most mothers were aged 20-30 years, and a few were aged above 30 years. The rates of exclusive breast-feeding were not significantly different in the mothers of different age groups (23% vs 28% in  $\leq 20$ -year and 20-30-year age groups in the intervention group and 14% and 21% in the comparison group respectively). One study showed that older women breastfed for a longer duration than their younger counterparts (11). Another study did not find any significant effect of age on the duration of breast-feeding (12). Our study did not, however, aim at finding the relation between age of mothers and duration of breast-feeding. Among the illiterate, significantly more mothers (87% and 67% in the intervention and comparison groups respectively) exclusively breastfed their babies up to five months of age. Some other studies showed that duration of breast-feeding was negatively associated with educational level of mothers (13,14). In our study, the difference in breast-feeding practice between Muslim and Hindu women was only marginal. This was also the observation of another study (13). Breast-feeding counselling improved the rates of colostrum feeding in both intervention (100%) and comparison groups (98%).

Discontinuation of breast-feeding during illnesses, such as diarrhoea and ARI, of the children contributes to childhood malnutrition (15). In our study, most children in both intervention (78%) and comparison groups (93%) were breastfed during their illnesses. Timely starting of complementary feeding is an important factor in child growth. Eighty-eight percent of the children in the intervention group and 53% in the comparison group were given complementary foods at proper time, i.e. after completion of five months. A study in northern Bangladesh showed that the mean age of introducing complementary food was very high (13.5 months) (16). So, breast-feeding counselling had a positive impact on starting complementary feeding. In our study, breast-feeding counselling improved the rate of exclusive breast-feeding up to five months. It was

about 54% in the intervention group, which is actually more than our targeted level, and 36% in the comparison group. Both the rates are higher than the existing national rate (12.7%) in Bangladesh (9). The mothers in the comparison group were also counselled once before delivery of the baby. So, comparison was made between the impact of single session of breast-feeding counselling with repeated breast-feeding counselling.

Although there were high rates of drop-outs (30% and 39% in the intervention and comparison groups respectively), this did not affect the result as the sample size taken was much above 28, the number required for the results to be statistically significant.

The findings of this study suggest that repeated organized counselling may increase the rate of exclusive breast-feeding, including colostrum feeding; play an important role in timely introduction of complementary feeding; and prevent discontinuation of breast-feeding during illnesses, such as diarrhoea and ARI. We recommend repeated breast-feeding counselling through organized centres established especially at the community level so that the maximum number of pregnant and lactating mothers may have easy access.

#### ACKNOWLEDGEMENTS

The study was funded by Bangladesh Breastfeeding Foundation (BBF). We are specially thankful to Dr. S.K. Roy, Scientist, ICDDR,B and President of Research Subcommittee of BBF, for his continued support and inspiration throughout the study.

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