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Original Research Article

A comparative study of impact of breastfeeding practices on the nutritional status of the infants among the working and non-working women

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ABSTRACT

Background: Amongst the many determinants that influence the exclusivity of breastfeeding, the working status of the mother is the probably the most important.
Methods: A comparative analysis was done regarding the feeding pattern in early infancy between working and non-working mothers. The anthropometric indices of the groups were studied and compared. 50 working mothers and non-working mothers were taken up for the study and they were followed on regular intervals i.e., 6, 10, 14, 18 and 24 weeks.
Results: Age of working mothers was more than non-working mothers. 51.06% mothers in study group and 85.41% mothers in control group had exclusively breastfed their infants' upto 18 weeks. The mean weight was 7.77 (0.52) and 7.35 (0.59) among female study and control group, 8.19 (0.50) and 7.84 (0.50) among male study and control group.
Conclusions: Breastfeeding practices were comparable among the study and control group till the study group availed their maternity leave. Anthropometry is comparable among the study and control group for female babies, but there is a significant difference in anthropometry measures among male babies.

Keywords: Anthropometry, Breastfeeding, Working mother

INTRODUCTION

Infant feeding practices have a major role in determining the nutritional status of a child. About 60% of all deaths among children <5 years of age are directly or indirectly, attributed to malnutrition. About two-thirds of these deaths are associated with inappropriate feeding practices and occur during the first year of life. Poor feeding practices during infancy and early childhood results in malnutrition and thus contribute to impairment of cognitive and social development, poor school performance and reduced productivity in later life.[1]

Optimal infant and young child feeding (IYCF) practices as recommended by WHO ensures that young children get the best possible start to life.[2] Early initiation of breastfeeding (within an hour of birth) has been found to be associated with a 22% decrease in the risk of neonatal mortality. Exclusive breastfeeding (EBF) during the first 6 months of life has been associated with a lower incidence of diarrhoea and respiratory disease in infants, particularly in less-developed countries.[3]

Even though the benefits of breastfeeding are well established, only 46% of the infants are exclusively

breastfed in India. One of the commonest reason that people give for the decline of breastfeeding is that more and more mothers have paid jobs.

Even though it might improve the socioeconomic status, mothers' employment could indirectly affect child nutrition due to their inability to devote adequate time for feeding and care.[4,5] Hence this present was undertaken to determine the breastfeeding practices and its impact on the nutritional status of the infants among the working and non-working mothers.

METHODS

The present study was conducted over a period of one year at Maternal and Child Health (MCH) clinic of Bapuji Child Health Institute and Research Center, Davangere, Karnataka. During the one-year period of study, all mothers with their babies who were attending MCH clinic for immunization were included and depending on working status they were divided into study groups and control groups.

A total of 50 subjects were included in each group. Pretested structured proformas were given for study and control groups with specific questionnaires to the mothers regarding, working status, duration of leave availed, facility of nursing breaks, availability of crèche (study group), breastfeeding practices at birth. Specific problems (if any) faced by mothers with regard to exclusive breastfeeding were enquired. All working mothers were taught the art of expressing breastmilk and storage of milk.

The follow-up was conducted on every Tuesday. A register was maintained to record the details of babies who were included in the study. Infants were seen between 9am to 1pm. The mothers were questioned on their infants feeding behaviour and problem faced by working mothers when they returned to work. All working mothers were supported by lactational management counseling. Working mothers were also informed about managing exclusive breastfeeding once they had to return to work.

Anticipatory guidance was given at each follow up visits. If any women missed follow up, the breastfeeding pattern was recorded retrospectively when she came for the next follow-up. The following parameters were noted weight, length, head circumference, chest circumference and entered into the follow-up chart.

The measurements were taken by the same observer. Comparison of means between two groups was done by students t-test for continuous data. For categorical data Fischer exact test was applied. A p-value of <0.05 was considered for statistical significance. Growth charts for various anthropometric measurement were prepared comparing with NCHS charts (25th, 50th, 75th centiles) at various intervals.

RESULTS

Table 1: Distribution of subjects based on the age.

Age	No. of cases	
	Study group N (%)	Control group N (%)
<20	0	6 (12)
21-25	6 (12)	29 (58)
26-30	28 (56)	13 (26)
31-35	11 (22)	1 (2)
36-40	5 (10)	1 (2)

In the present study total number of cases studied were 50 in each group. The number of cases who completed 6 weeks followup were 100%, 10 weeks 100%, 14 weeks 94%, 18 weeks 24% and for 24 weeks its 90% in study group. In control group 100% came for followup at 6 and 10 weeks, 98% at 14 weeks, 22% at 18 weeks and finally 96% completed followup till six months. Mean age of mother in study group was 29.7 years compared to 24.2 years in control group. Of the study infants, 60% were males and 40% were females in study group, whereas it was 56% and 44% in the control group. Based on the leave availed, 70% of working mothers availed leave upto 135 days, as it was provided by government as maternity leave.

Table 2: Distribution of subjects based on the initiation of breastfeeding.

Breastfeeding onset (Hours)	Working mothers	Non-working mothers	P value
<1/2	18 (36)	27 (54)	>0.05
1/2-1	12 (24)	06 (12)	
1-5	20 (40)	16 (32)	
>6	-	01 (02)	

Of the study group all working mothers had regular antenatal check-ups and were immunized with 2 dose of inj TT whereas it was 96 % in control groups. All working women delivered in hospital, whereas 6% mothers delivered at home and 94% in hospital.

Table 3: Distribution of subjects based on Exclusivity of breastfeeding.

Exclusivity of breastfeeding	Working mothers	Non-working mothers	P value
6 weeks	50(100)	49(98)	>0.75
10 weeks	50(100)	48(96)	>0.37
14 weeks	44(89.79)	45(91.8)	>0.88
18 weeks	24(51.06)	41(85.41)	<0.01
24 weeks	05(11)	19(39.58)	<0.01

In study group, 42% mothers delivered via naturalis and 58% via caesarian section but in control group 80%

delivered via naturalis and 20% via caesarian section. In the present study, early initiation of breastfeeding was done in both the groups, all mothers were able to initiate within 6 hours of delivery. On applying chi square test the difference was found to be statistically insignificant with p value > 0.05. In the present study, 51.06% mothers in study group and 85.41% mothers in control group had exclusively breastfed their infants' upto 18 weeks. It declined to 11% and 39.58% in study and control group respectively at 24 weeks. The difference was found to be statistically significant at 18 and 24 weeks. Of the study, no working mothers have given bottle feeding to their babies but in control group 8% mothers had initiated bottle feeding. The mean head circumference of the infants in study group was less than control group. In the present study mean weight, length, head size of the infants in study group was more than control group. On applying chi square test, it is found to be statistically significant with p-value <0.01.

Table 4: Comparison of growth of infants at 6 months of age (females).

Parameter	Study mean (SD)	Control mean (SD)	p-value
Weight (kg)	7.77 (0.52)	7.35 (0.59)	<0.01
Head circumference (cm)	42.85 (0.93)	49.90 (0.94)	0.02
Length (cm)	64.97 (1.3)	64.00 (1.97)	>0.05
Chest circumference (cm)	41.79 (1.11)	41.26 (1.84)	>0.05

Table 5: Comparison of growth of infants at 6 months of age (males).

Parameter	Study mean (SD)	Control mean (SD)	p-value
Weight (kg)	8.19 (0.50)	7.84 (0.50)	0.02
Head circumference (cm)	43.63 (0.91)	42.91 (0.77)	<0.01
Length (cm)	67.02 (1.57)	65.57 (1.89)	<0.01
Chest circumference (cm)	42.33 (1.24)	42.22 (1.33)	<0.77

DISCUSSION

According to IYCF guidelines 2006, Government of India recommends initiation of breast feeding should begin immediately after birth, within one hour of birth.2 Breastfeeding was initiated early in all babies in both the groups. Majority of women around 60% were able to initiate within 1 hour and rest 40% of mothers could able to initiate within 6 hours. There were no differences in study or control group in terms of initiation of breastfeeding, as most of the deliveries occurred in hospitals and this hospital has an explicit policy and services for promoting, protecting and supporting breastfeeding. This is similar study done in Singapore by Gary Ong.[6] In India according to NFHS-3 report breastfeeding early initiation rate is 40%.[7] Also, in a study conducted by 53.3% of the non-working women and only 33.6% of the working women had breastfed their child within 1 hour.[8]

Exclusivity of breastfeeding declined to 51.06% at 4 ½ months in study group compared to 85.41% in control group and it was only 11% at the end of 6 months in study group whereas it was around 40% in control group. This is understandable because as mothers resume their work, because of various work-related problems they cannot continue breastfeeding and introduction of supplements to the baby is done when they are away from the house. Most of the mothers in control group have started topfeeding at the end of 5 months as most of the mothers said breastmilk is not sufficient for their infants. This is similar to the study conducted by Sinniah et al who have shown that 237 of 317 nursing personnel mothers are breastfeeding at birth.[9] The figure declined to 35.5% at 1 month, 5.4% at 6 months and it is only 3.5% at 9-12 months. Yimyam S and Morrow M have shown that resumption of employment generally had negative effect on breastfeeding rate and duration.[10] At 6 months 80% of the mothers who were at home were exclusively breastfeeding, while it is around 37% in working mother who were working in public sector and 39% in women in private sector 17 and most of the studies have shown that resumption of work has negative influence on exclusive breastfeeding.[11,12,13] However NFHS 3 and various other studies showed higher rate of EFB.[7]

There is evidence from several countries that growth of breast-fed infants deviates from current-reference data. In present study, weight for age in male and female infants in both the groups were between 50th and 75th centiles in the standard US-NCHS charts, and at the end of 6 months weight for age in study group was higher than in the control group. Although both the groups fed their babies with breastmilk, most of the mothers in the study group had started supplements at the end of 4 months. After 4 months of the age, growth of the exclusively breastfed babies falters as shown in a study by Arun et al where growth of normal birth weight exclusively breastfed infants were studied. The weight curves of study infants appeared to slow down after going parallel for the first 4 or 5 months. In the DARLING study where growth of normal birth weight breastfed infants was compared with formula fed infants, the breastfed boys and girls remained above the median of NCHS upto 8 months of age.[14]

The head circumference curves of the present study fell between 50th and 75th centiles in both the groups. At the end of 6 months a statistically significant difference of head growth was noted in male infants which was more in study group. In the DARLING study the mean head circumference of the breastfed group was 50th centile as

for NCHS standards for the 6 months of age.14 However Phatak et al have concluded that the babies of the SMSH study as well as the breastfed babies of the DARLING study were healthy, thriving and with normal motor and mental development.[15]

CONCLUSION

This study shows that with proper motivation and support, many working mothers are able to continue exclusive breastfeeding in spite of returning to work. Longer leave, nursing breaks, broken hours of work and strong motivation could extend the length of exclusive breastfeeding.

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