**ORIGINAL RESEARCH**

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

[1]Dr. Pradeep Sharan, [2]Dr. Hari Shankar Choubey, [3]Dr. C.B. Kumar

[1]DCH, DNB, Pediatrics, Specialist Medical Officer, SDH, Narkatiyaganj, Bihar, India
[2]Assistant Professor, Department of Pediatrics, RDJM Medical College, Muzaffarpur, Bihar, India
[3]Professor, Department of Pediatric, RDJM Medical College, Muzaffarpur, Bihar, India

**Corresponding Author**
Dr. Hari Shankar Choubey
Assistant Professor, Department of Pediatrics, RDJM Medical College, Muzaffarpur, Bihar, India

Received: 2 July, 2023 Accepted: 7 August, 2023

## ABSTRACT

**Background:** Infant feeding practices have a major role in determining the nutritional status of a child. About 60% of all deaths among children <5years of age are directly or indirectly, attributed to malnutrition. The present study was conducted to compare impact of breastfeeding practices on the nutritional status of the infants among the working and non-working women.

**Material & Methods:** A total of 100 subjects were included in each group. Pretested structured performs were given for working mother group and non working mother group with specific questionnaires. The following parameters were noted weight, length, head circumference, chest circumference and entered into the follow-up chart. A p-value of < 0.05 was considered for statistical significance.

**Results:** Maximum mothers in working group initiate breastfeeding in 1-5 hours (40%) followed by <1/2(35%). In non-working mothers group maximum mothers initiate breastfeeding in <1/2hour (56%) followed by 1-5hours (30%). Exclusivity of breastfeeding between working mothers group and non-working mothers group shows statistically significant difference at 18weeks, 24 weeks. Weight of female infant shows significant difference between working and non working mothers. Head circumference, Length and Chest circumference shows significant difference between male infants of both groups.

**Conclusion:** The present study concluded that weight of female infant shows significant difference between working and non working mothers whereas head circumference, length and chest circumference shows significant difference between male infants of both groups.

**Keywords:** re-schooling, development of children.



## INTRODUCTION

Breast milk is the main food for babies from first 6 month of life. At first, the baby cannot consume other additional food unless breastfeeding. In breast milk contains the most complete nutrition for babies. Breast milk is the first natural food for babies. World Health Organization (WHO), recommends that babies continue to be exclusively breastfed for the first six months of a baby's life.[1,2] 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 sIg A, and it contains a larger percentage of protein, minerals and fat-soluble vitamins (A, E and K) than later milk.[3] Exclusive breastfeeding (EBF) means providing only breast milk for infants for up to six months without the addition of solid or liquid matter with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals, or medicines.[4,5] Breastfeeding has several benefits for infants, including reduced risk and severity of malnutrition as well as infections such as diarrhoea, pneumonia and otitis media.[6-9] The presence of the characteristic antimicrobial agents in the contents of breast milk provide the infants with protection against several viral, bacterial, and protozoan infections.[10] The risk of two or more episodes of otitis media is reduced in breast-fed infants for 1 year.[11] Breastfeeding is also shown to prevent many types of cancers, such as lymphoma and leukemia, in infants.[12] Type 1 diabetes mellitus (DM) in breast-fed infants also has a lower rate of occurrence in comparison with infants who are

formula-fed.[13] In addition, the longer the duration of breastfeeding, the more of a boost is typically seen in the intelligence quotient (IQ) of that infant.[14] 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.[15] The present study was conducted to compare impact of breast feeding practices on the nutritional status of the infants among the working and non-working women.

## MATERIAL & METHODS

The present study was conducted among 200 infants at RDJM Medical College & Hospital, Muzaffarpur, Bihar during the time period of September 2022 to June 2023. During the time period of study, all mothers with their babies who were attending OPD for immunization were included and depending on working status they were divided into working mother group and non working mother group. A total of 100 subjects were included in each group. Pretested structured proformas were given for working mother group and non working mother group 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 breast milk and storage of milk. The follow-up was conducted every week on Monday. Infants were seen between 9am to 1pm. A register was maintained to record the details of babies who were included in the study. 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. A p-value of $< 0.05$ was considered for statistical significance. Growth charts for various anthropometric measurements were prepared comparing with NCHS charts at various intervals.

## RESULTS

In the present study total number of mothers studied was 100 in each group. Of the study infants, 55% were males and 45% were females in working mothers group, whereas it was 60% and 40% in the non-working mother group. Maximum mothers in working group initiate breastfeeding in 1-5 hours (40%) followed by <1/2(35%). In non-working mothers group maximum mothers initiate breastfeeding in <1/2hour (56%) followed by 1-5hours (30%).

**Table 1: Distribution of subjects based on the initiation of breastfeeding**

| Breastfeeding onset (Hours) | Working mothers | Nonworking mothers | p value |
|---|---|---|---|
| <1/2 | 35 | 56 | >0.05 |
| 1/2 | 25 | 11 | |
| 1-5 | 40 | 30 | |
| >6 | - | 3 | |

**Table 2: Distribution of subjects based on Exclusivity of breastfeeding**

| Exclusivity of breastfeeding | Working mothers | Nonworking mothers | p value |
|---|---|---|---|
| 6 weeks | 100 | 96 | >0.05 |
| 10 weeks | 100 | 95 | >0.05 |
| 14 weeks | 88 | 92 | >0.05 |
| 18 weeks | 52 | 86 | <0.01 |
| 24 weeks | 10 | 40 | <0.01 |

Exclusivity of breastfeeding between working mothers group and non-working mothers group shows statistically non-significant difference at 6weeks, 10 weeks and 14 weeks. Exclusivity of breastfeeding between working mothers group and non-working mothers group shows statistically significant difference at 18weeks, 24 weeks.

**Table 3: Comparison of growth of infants at 6 months of age (female)**

| Parameter | Working mothers Mean±SD | Nonworking mothers Mean±SD | p value |
|---|---|---|---|
| **Weight (kg)** | **7.75±0.55** | **7.40±0.58** | **<0.01** |
| **Head circumference (cm)** | **40.87±0.94** | **47.78±0.97** | **>0.05** |
| **Length (cm)** | **65.46±1.13** | **65.00±1.96** | **>0.05** |
| **Chest circumference (cm)** | **42.78±1.12** | **42.34±1.83** | **>0.05** |

Weight of female infant shows significant difference between working and non working mothers whereas Head circumference, Length and Chest circumference shows non-significant difference between female infant of both groups.

**Table 4: Comparison of growth of infants at 6 months of age (male)**

| Parameter | Working mothers Mean±SD | Nonworking mothers Mean±SD | p value |
|---|---|---|---|
| **Weight (kg)** | **8.22±0.55** | **7.85±0.56** | **0.02** |
| **Head circumference (cm)** | **43.68±0.92** | **42.96±0.76** | **<0.01** |
| **Length (cm)** | **68.04±1.58** | **65.56±1.87** | **<0.01** |
| **Chest circumference (cm)** | **42.35±1.25** | **42.23±1.35** | **<0.76** |

Weight of male infant shows non-significant difference between working and non working mothers whereas Head circumference, Length and Chest circumference shows significant difference between male infants of both groups.

## DISCUSSION

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.[16]In the present study total number of mothers studied was 100 in each group. Of the study infants, 55% were males and 45% were females in working mothers group, whereas it was 60% and 40% in the non-working mother group. Maximum mothers in working group initiate breastfeeding in 1-5 hours (40%) followed by <1/2(35%). In non-working mothers group maximum mothers initiate breastfeeding in <1/2hour (56%) followed by 1-5hours (30%). Exclusivity of breastfeeding between working mothers group and non-working mothers group shows statistically non-significant difference at 6weeks, 10 weeks and 14 weeks. Exclusivity of breastfeeding between working mothers group and non-working mothers group shows statistically significant difference at 18weeks, 24 weeks. Weight of female infant shows significant difference between working and non working mothers whereas Head circumference, Length and Chest circumference shows non-significant difference between female infant of both groups. Weight of male infant shows non-significant difference between working and non working mothers whereas Head circumference, Length and Chest circumference shows significant difference between male infants of both groups. Polineni V et al compared infant feeding practices among working and non-working women. 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. The study concluded that 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.[3] Maheni FD et al did a literature review and concluded that Babies who were exclusively breastfed at the age of 4 to 6 months had a better nutritional status than babies who were given nonexclusive breastfeeding.[16] Muchina EN et al assessed the breastfeeding practices of mothers and the relationship between these practices and the nutritional status of their children. Fifteen (3.6%) of the

420 children studied had mixed feeding from birth, while 273 (65.0%) were exclusively breastfed for six months. Two hundred and sixty-eight (63.8%) of them were still breastfeeding at the time of the study, while 152 (36.2%) had stopped breastfeeding. Nearly one-quarter (103/420; 24.5%) of the children were undernourished. A significantly lower proportion of children who had exclusive breastfeeding were undernourished, compared to those who were not exclusively breastfed (p = 0.033). Exclusive breastfeeding was independently associated with reduced odds of undernutrition (OR = 1.62, 95% CI = 1.02-2.57, p = 0.039). The study concluded that breastfeeding for six months significantly reduces the risk of undernutrition among young children.[17] Ashok A et al did a comparative analysis regarding the feeding pattern in early infancy between working and nonworking mothers. 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. The study concluded that 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.[18]

## CONCLUSION

The present study concluded that weight of female infant shows significant difference between working and non working mothers whereas head circumference, length and chest circumference shows significant difference between male infants of both groups.

## REFERENCES

1. WHO (2018). Breastfeeding. World Health Organization, dari http://www.who.int/nutrition/topics/ex clusive breastfeeding/en/ Diakses 12 November 2019
2. Kementerian Kesehatan RI. Infodatin : Menyusui sebagai dasar kehidupan. Jakarta: Kemenkes RI; 2018. ISSN 2442-7659.
3. Polineni V, Boralingiah P, Kulkarni P, Manjunath R. A comparative study of breastfeeding practices among working and non-working women attending a tertiary care hospital, Mysuru. National Journal of Community Medicine. 2016 Apr 30;7(04):235-40.
4. World health organization. Exclusive breast feeding for optimal growth, development and health of infants: Geneva, Swizerland; 2019.
5. UNICEF. Optimal breastfeeding: New York, USA; 2019
6. Lamberti LM, Fischer-Walker CL, Noiman A, Victora C, Black RE. Breastfeeding and the risk for diarrhea morbidity and mortality. BMC Public Health 2011; 11: S15-27. https://doi.org/10.1186/1471-2458-11-S3- Ss15
7. Hanieh S, Ha TT, Simpson JA, Thuy TT, Khuong NC, Thoang DD, et al. Exclusive breastfeeding in early infancy reduces the risk of inpatient admission for diarrhea and suspected pneumonia in rural Vietnam: a prospective cohort study. BMC Public Health 2015; 15: 1166. https://doi.org/10.1186/s12889-015-2431-9
8. Story L, Parish T. Breastfeeding helps prevent two major infant illnesses. Internet J Allied Health Sci Pract 2008; 6: 1-5.
9. Bowatte G, Tham R, Allen K, Tan D, Lau M, Dai X, et al. Breastfeeding and childhood acute otitis media: a systematic review and meta-analysis. Acta Paediatr 2015; 104: 85-95. https://doi.org/10.1111/apa.13151.
10. Isaacs CE, Kashyap S, Heird WC, Thormar H. Antiviral and antibacterial lipids in human milk and infant formula feeds Arch Dis Child. 1990;65:861–4
11. Dewey KG, Heinig MJ, Nommsen-Rivers LA. Differences in morbidity between breast-fed and formula-fed infants J Pediatr. 1995;126:696–702
12. Kwan ML, Buffler PA, Abrams B, Kiley VA. Breastfeeding and the risk of childhood leukemia: A meta-analysis Public Health Rep. 2004;119:521–35
13. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, et al Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect Lancet. 2016;387:475–90
14. Mortensen EL, Michaelsen KF, Sanders SA, Reinisch JM. The association between duration of breastfeeding and adult intelligence JAMA. 2002;287:2365–71
15. Heymann J, Raub A, Earle A. Bulletin of the World Health Organization 2013;91: 398-406.
16. Benefits of breastfeeding, Women Child Health Supplementary Nutrition Programmes. Available at http:// www.cdph.ca.gov/programs/BreastFeeding/Pages/defa ult.aspx.Accessed on Nov 26th 2015.
17. Maheni FD, Oktova R. The Differences In Nutritional Status Of Infants Aged 4-6 Months Who Were Exclusively Breastfed And Those Were Given Nonexclusive Breastfeeding: Literature Review. SEAJOM: The Southeast Asia Journal of Midwifery. 2021 Sep 14;7(1):28-38.
18. Muchina EN, Waithaka PM. Relationship between breastfeeding practices and nutritional status of children aged 0-24 months in Nairobi, Kenya. African Journal of Food, Agriculture, Nutrition and Development. 2010;10(4).
19. Ashok A, Shwetha JH, Mahesh TK. A comparative study of impact of breastfeeding practices on the nutritional status of the infants among the working and non-working women. Int J Contemp Pediatr 2018;5:1759-62.