

## ORIGINAL RESEARCH

# Issues related to breast feeding in neonates delivered at a tertiary care centre

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### ABSTRACT

**Background:** Breastfeeding is process by which human milk is fed to infant, may be from breast, or expressed by hand or pumped and fed to the infants. Breastfeeding is natural process that seems to have been adversely affected by the “modernization” of society. Several factors affect initiation, continuation, and cessation of breastfeeding among Indian women which includes various maternal factors, infant characteristics and socio-demographic factors. The aim of this study was to identify issue related to breastfeeding and study the various factors that affect the exclusive breastfeeding. Methods-cross-sectional observational study conducted at postnatal care ward of a tertiary care centre. **Result:** This study included 803 mothers and 811 neonates which were not admitted in neonatal ICU. Out of 811 neonates 577(71.15%) were exclusively breastfed while 234(28.85%) were not, from that 60.9% male neonates and 81.07% female neonates were exclusively breastfed. In twin pregnancy exclusive breastfed were 25% while in singleton pregnancy 72.08%. According to mode of delivery in vaginal delivery 86.20% and in caesarean 55.53% were exclusively breastfed. Around 71.48% term neonates were exclusively breastfed compared to 62.07% preterm neonates. Breast problems in mother that led to non-exclusive breastfeeding contributed around 18.38% while problems in neonates around 4.70%. **Conclusion:** Twin pregnancy and caesarean section delivery were associated with significant fall while there is no effect of gestational age of neonates, parity of mother, maternal education on rates of exclusive breastfeeding. So, we need to focus on a community based educational programme to promote antenatal counseling about benefits of early and exclusive breastfeeding.

**Key words:**breastfeeding, neonates

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### INTRODUCTION

Breastfeeding is a process by which human breastmilk is fed to the infant, may be from breast, or may be expressed by hand or pumped and fed to the infants. The World Health Organization (WHO) and American Academy of Pediatrics (AAP) have declared breastfeeding and the administration of human milk to be the normative practice for infant feeding and nutrition. Breastfeeding has documented short and long term medical and neurodevelopmental advantages and rare contraindications.

Breastfeeding is a natural process that seems to have been adversely affected by the “modernization” of society. Though it is now widely accepted that breast milk is the best for the baby, it is also a well-known fact that exclusive breastfeeding rates in early infancy are still too low <sup>1, 2</sup>. Several factors affect initiation, continuation and cessation of breastfeeding among Indian women. These include maternal age, gestational age, mode of delivery and parity, breast or nipple abnormalities, illness. Additionally, socio-demographic factors such as education level, socioeconomic status and sex of the infant can affect

breastfeeding practices as well. There may also be infant characteristics that contribute to breastfeeding initiation such as gestational age, weight at birth, suckling ability and temperament. A number of studies have shown that deficits in knowledge amongst health care workers and lack of adequate information being given to mothers are major factors responsible for low rates of exclusive breastfeeding.

The aim of this study was to identify issue related to breastfeeding and study the various factors that affects the exclusive breastfeeding. This cross-sectional study was undertaken to identify factors that adversely affected exclusive breastfeeding in the perinatal period. This study also helps to develop strategies to improve exclusive breastfeeding rates and prevent the complications due to non-exclusive breastfeeding and pre-lacteal feeding practice.

## METHODS

**STUDY DESIGN:** It was cross-sectional observational study.

**STUDY AREA:** It was conducted at postnatal care ward of a tertiary care centre affiliated to medical college.

**STUDY POPULATION:** Mother-neonate dyads admitted in postnatal care ward of a tertiary care centre.

**STUDY PERIOD:** August 2020 to August 2021.

**SELECTION CRITERIA:** Following inclusion and exclusion criteria was used to select the study subjects.

**A) INCLUSION CRITERIA:** Mother-neonate dyads with stable neonates admitted in postnatal care ward of a tertiary care centre.

**B) EXCLUSION CRITERIA:** Admitted in neonatal intensive care unit at the time of study.

## METHODOLOGY

A total of 811 mother-neonate dyad were recruited over the period of august 2020 to august 2021.

Study was performed after maternal stabilization while mother- neonate dyad was admitted in the postnatal ward. Data collection from each dyad was done only once during the admission. Data was collected by maternal interview, detailed maternal history, neonatal history and examination. The clinicodemographic details of mother and baby were recorded along with pattern of breastfeeding problems of mother and baby related to initiation and continuation of breastfeeding. Both mother and baby were examined for breastfeeding position, attachment and local problems related to breastfeeding.

The data was tabulated in excel sheet and Appropriate statistical analysis used. Observed result is statistically significant at a p-value of  $\leq 0.05$  and confidence level of 95%.

Small for gestational age defined as birth weight of baby is less than 10th percentile for gestational age<sup>3</sup>.

Appropriate for gestational age defined as birth weight of baby is between 10th and 90th percentile for gestational age<sup>3</sup>.

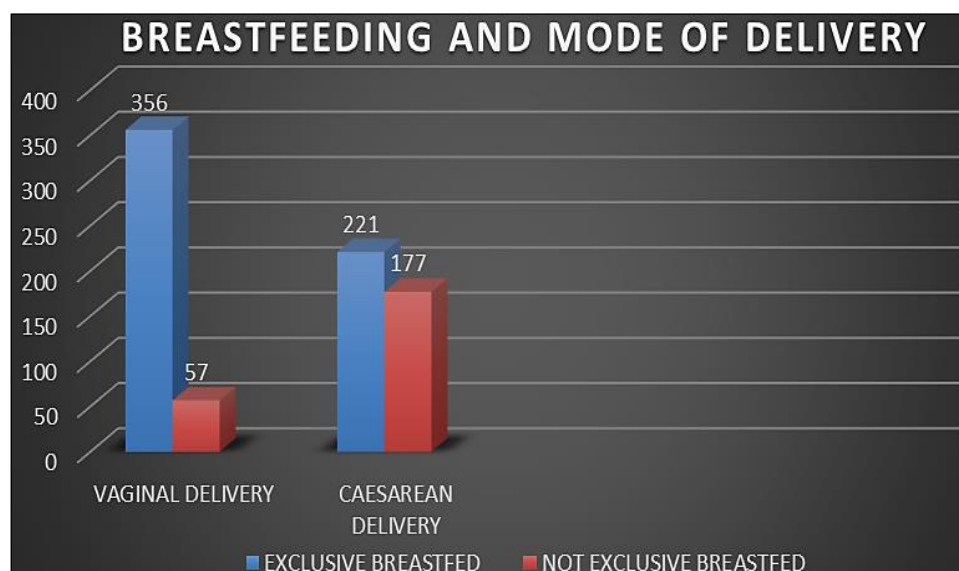
Large for gestational age defined as birth weight of baby is more than 90<sup>th</sup> percentile for gestational age<sup>3</sup>.

## ETHICAL CONSIDERATION

Informed consent was taken in vernacular language.

## RESULT

Total 811 neonates are taken in this study out of which 577 (71.15%) neonates were exclusively breastfed while 234(28.85%) were not exclusively breastfed. The data shows that while majority of neonates were breast fed (71%), almost one third were not exclusively breast fed.



**Figure I: Breastfeeding and Mode of Delivery**

Figure I showing that, In vaginal delivery out of 413 neonates, 356(86.20%) were exclusively breast fed

while in caesarean delivery out of 398 neonates, 221(55.53%) were exclusively breastfed which

showed a significant difference (P VALUE- < 0.00001). It is an established fact that initiation of breast feeding is more problematic in CS delivered babies as compared to normal vaginal births.

**Table I: Distribution of Neonates According to Gender**

	Exclusive breast fed	Not Exclusively breast fed	Total	P value
Male neonates	243(60.9%)	156(39.1%)	399(49.20%)	0.00001(<0.05)
Female neonates	334(81.07%)	78(18.93%)	412(50.80%)	
Total	577	234	811	

Out of 811 neonates, 399 were male neonates and 412 were female neonates. Among the male neonates 243 (60.90%) were exclusive breastfed and among the female neonates 334(81.07%) were exclusively

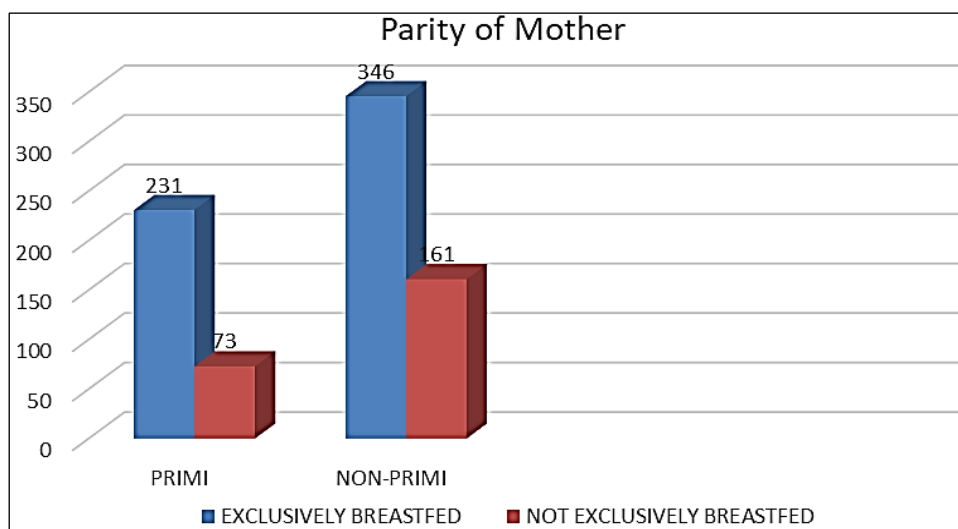
breastfed. There was significant difference (P VALUE-0.00001) in rate of breast feeding among male and female.

**Table II: Demographic Profile of Mother**

Demographic characteristic of mother	Exclusive breast fed	Not Exclusively breast fed	Total
<b>Maternal age</b>			
a)18-22years	133(74.7%)	45(25.3%)	178(21.95%)
b)23-27 years	280((75.07%)	93(24.93%)	373(45.99%)
c)28-32 years	126(60.9%)	81(39.1%)	207(25.52%)
d)33-37 years	38(79.17%)	10(20.83%)	48(5.92%)
e)38-42 years	00	05(100)	05(0.62%)
<b>Maternal education</b>			
a) < class 10 <sup>th</sup>	357(71.98%)	139(28.02%)	496(61.16%)
b) Passed 10 <sup>th</sup>	71(69.61%)	31(30.39%)	102(12.58%)
c) Passed 12 <sup>th</sup>	91(68.42%)	42(31.58%)	133(16.40%)
d) graduate	58(72.5%)	22(27.5%)	80(9.86%)
Total	577	234	811

It was observed that there was no significant difference in exclusive breastfeeding according to maternal age but in elderly gravida mother, all neonates were non exclusively breast fed. Many factors may be responsible for this, including complicated pregnancy, social stigma and prevalence of pre-lacteal feeding practices and false belief of discarding colostrum. However, the sample size in

this age group is small, so extrapolation of data may be difficult. Maximum number of mothers in age group of 33-37 years exclusively breast-fed their babies; here the confounding factor may be parity, as most of these mothers would be multiparous. As regards maternal education there was no significant effect of maternal education on exclusive breastfeeding.



**Figure II: Distribution According to Parity of Mother**

Out of 304 primi mothers 231(75.99%) gave exclusive breastfeeding while out of 507 nonprimi mothers 346(68.24%) gave exclusive breastfeeding.

There was a significant difference (P VALUE-0.023) in exclusive breastfeeding according to parity of mother.

In this study out of the 155 small for gestational age neonates which were not admitted in neonatal ICU, 107(68.03%) were exclusively breastfed while out of the 656 appropriate for gestational age neonates, 470

(71.65%) were exclusive breastfed. The difference was not significant difference (P VALUE-0.58). Large for gestational age neonates were not taken in this study because they were admitted in neonatal ICU.

**Table III: Multifactorial Analysis-Parity of Mother and Low Birth Weight Neonates**

Parity of mother	Not exclusive breastfed	Exclusively breastfed	Total (small for gestational age neonates)	P value
Multipara mother	33(38.82%)	52(61.18%)	85(54.83%)	0.0087(<0.05)
Primi mother	15(21.43%)	55(78.57%)	70(45.16%)	
Total	48	107	155	

The 2-factor analysis of parity and small for gestational age neonates showed that, among the multipara 33 (38.82%) and in primi 15(21.43%) were not exclusive breastfed. So, in multipara there was 2 times higher prevalence of non-exclusive breastfeeding than primi mother which was significant (P VALUE-0.0087).

In this study, out of 8 twin neonates, only 25% were exclusively breastfed while in singleton pregnancy 72.08% were exclusively breastfed, may be because in twin pregnancy mother had stigma of poor secretion

to feed both baby and more rely on formula feeding. The difference was significant (P VALUE- <0.0001)

There was no significant difference in exclusive breastfeeding according to gestation age at delivery. As per study out of 782 term neonates 559(71.48%) were exclusively breastfed while out of 29 preterm neonates, 18(62.07%) were exclusively breastfed which showed that there was no significant difference (p value-0.373) in exclusive breastfeeding in term and preterm neonates.

**Table IV: Breast problems in mother and breastfeeding**

	Exclusively Breastfed	Not exclusively breastfed	Total
Nipple confusion	2(100%)	0	2
Breast engorgement	5(55.56%)	4(44.44%)	9
Sore nipple	7(87.5%)	1(12.5%)	8
Inverted or flat nipple	31(46.27%)	36(57.73%)	67
Breast abscess/mastitis	2(50%)	2(50%)	4
Total	47(52.22%)	43(47.78%)	90

Out of 803 mothers around 90 mothers had different breast problems. In spite of breast problems 47(52.22%) neonates were exclusively breastfed while 43(47.78%) were not exclusively breastfed. So out of 234 not exclusive breastfed babies, 43(18.38%) were due to breast problems in mother.

Out of 811 babies total 21 babies had local problems related to breastfeeding and from this around 47.68% were exclusively breastfed and 52.38% were not, thus around 4.70% babies were not exclusively breastfed due to local problems in babies. Thus, local problems in the baby adversely affect exclusive breastfeeding rates.

In this study 192 newborns were on formula feeding as breastmilk substitutes. Out of 192, 62(32.29%) were advised by medics or paramedics while 130 (67.71%) were not advised. 20 newborns were on non-human milk like cow/ goat milk which were not advised by medics or paramedic. So, even out of 212 newborns which were on breastmilk substitutes, 9.43% were on non-human milk and 90.57% were on formula-feeding and 150 (70.76%) were on breastmilk substitute without any professional advice. Thus, there is a lot of room for improvement in breastfeeding practices.

## DISCUSSION

This was a cross-sectional observational study

conducted at postnatal care ward of a tertiary care centre affiliated to medical college. This study included 803 mothers and 811 neonates which were not admitted in neonatal ICU.

- In this study 399(49.20%) were male neonates, whereas 412(50.80%) were female neonates. Mean maternal age was 28±10 years and around 2/3(61.16%) of mother had education below class 10.
- About 155(19.11%) were Small for gestational age, 656(80.89%) were appropriate for gestational age. There were no large for gestational age babies as all of them got admitted in neonatal ICU and were excluded from study.
- Around 413(50.92%) neonates were vaginal delivered while 398(49.08%) neonates were caesarean section delivered, out of that 16 were twin pregnancy and 795 were singleton pregnancy, and 782 were term and 29 were preterm neonates.
- In this study out of 811 neonates 577(71.15%) were exclusively breastfed while 234(28.85%) were not exclusively breastfed, from that 60.9% male neonates and 81.07% female neonates were exclusively breastfed which shows significant difference (P VALUE-0.00001).
- Exclusive breastfeeding rate was around 70% irrespective of maternal education and there was no significant difference in exclusive breastfeeding

according to maternal age but in elderly gravida mother all neonates were exclusively non breastfed while in 33-37 years age group around 80% exclusively breastfed.

- In primi mother rate of exclusive breastfeeding was 75.99% and non-primi was 68.24%, in small for gestational age it was 68.03%, appropriate for gestational age was 71.65% which shows there was no significant difference. But while we use multi-factorial analysis using parity and Small for gestational age in multipara mother there was around 2 times (38.82%) high rate of non-exclusive breastfeeding than primi(21.43%) which was significant difference (P VALUE-0.0087).
- In twin pregnancy exclusive breastfed neonates were only 25% while in singleton pregnancy were 72.08% which was significant difference (P VALUE-0.0001) while according to mode of delivery in vaginal delivery 86.20% and in caesarean delivery 55.53% were exclusively breastfed which was also significant difference(P VALUE < 0.00001).
- Around 71.48% term neonates were exclusively breastfed as compared to 62.07% preterm neonates(P VALUE-0.373).
- Breast problems in mother that led to non-exclusive breastfeeding contributed around 18.38% while problems in neonates around 4.70%.
- In our study 212 newborns which were on breastmilk substitutes from that 192 were on formula feeding and 20 were on non-human milk (cow or goat milk) as breastmilk substitutes. In Around 62 (32.29%) newborns on formula feeding were advised by medics or paramedics, while 130(67.71%) were not advised for formula feeding and used it as breastmilk substitutes.

## CONCLUSION

Exclusive breastfeeding rate in the present study was 71.15%. There is no effect of gestational age of neonates, parity of mother, maternal education on rates of exclusive breastfeeding. Twin pregnancy and caesarean section delivery were associated with significant fall in rates of exclusive breastfeeding. Breast problems in mother also contributed to one-fifth of cases who were non-exclusively breastfed.

Most of the mothers who did not breastfeed exclusively used commercial formula feeds.

So, we need to focus on a community based educational programme to promote antenatal counseling about benefits of early and exclusive breastfeeding and merits and demerits of breast milk substitutes. Along with that training on lactation management and counseling for health workers including pediatrician and obstetrician is also required.

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