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Breastfeeding practices and growth pattern of infants in six weeks of infancy

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Abstract
Breast milk is the best for the baby and the benefits of breast feeding extend well beyond the basic nutrition and breast milk is packed with disease-fighting substances that protect the baby from illness. The present study aimed to study the effect of breastfeeding practices on growth pattern of infants among postnatal mothers delivered vaginally and by caesarean section. The study was conducted among 120 mothers and their infant in six weeks of infancy, attending selected hospitals in Chennai, Tamilnadu. Non Probability Convenient sampling technique was used to select the samples. Checklist was used to assess the breastfeeding practices of mothers and the growth pattern of infant in six weeks of infancy. Anthropometric measures were assessed for the infant in six weeks of infancy. The study findings revealed a significant difference in the breastfeeding practices among mothers and also the growth pattern of their infant in six weeks of infancy. Correlation revealed a positive correlation between the breastfeeding practice and growth pattern of the infant in six weeks of infancy at six weeks of infancy.

Keywords: Breastfeeding, vaginal delivery, caesarean section, neonate, growth pattern

Introduction
The continuity of life on earth is maintained by birth of a new human being, a baby and for that God has created a very beautiful person, the mother and the precious thing that is breast milk to care for the new baby. Breast milk is the best for the baby and the benefits of breastfeeding extend well beyond the basic nutrition. In addition to containing all the vitamins and nutrients the baby needs in the first six months of life, breast milk is packed with disease-fighting substances that protect the baby from illness.
Breastfeeding is natural but it is not naturally known to many mothers. Breastfeeding is a learned skill that both mother and baby need to practice many times before both fully know and understand the process. Studies showed that the breastfeeding prevalence in the delivery room was significantly higher after vaginal delivery compared with that after caesarean delivery as a longer interval occurred between birth and first breastfeeding in the newborn delivered by caesarean section (Zanardo V, Svegliado G, Cavallin F, Giustardi A, Cosmi E, Litta P, Trevisanuto, D 2010) [10].

Statement of the Problem
A study to assess the breastfeeding practices of mothers and growth pattern of the infant in six weeks of infancy among postnatal mothers delivered vaginally and by caesarean section at selected settings in Chennai.

Objectives of the Study
- To assess the breast feeding practices of the mother and the growth pattern of infant in six weeks of infancy.
- To compare the breast feeding practices and growth pattern of infant in six weeks of infancy of mothers with vaginal delivery and caesarean section.
- To correlate the breast feeding practices with the growth pattern of infant in six weeks of infancy.
- To associate the breast feeding practices of mother with the demographic variables.

Background of the Study
Globally, around 5.6 million children died before reaching their fifth birthday, of those, 2.6 million (or 46%) died in the first 30 days of life.

Most of the neonates died in Southern Asia (39%), followed by sub-Saharan Africa (38%). Half of all newborn deaths occurred in the following five countries: India, Pakistan, Nigeria, the Democratic Republic of the Congo and Ethiopia (UNICEF, 2017).

Approximately 7000 newborns died every day, most of which occurred within first 7 days after birth, with about 1 million dying on the first day and close to 1 million dying within the next 6 days in 2016 (WHO, 2017)

Over the past 25 years, the age under-five mortality rate dropped from 93 deaths per 1000 live births in 1990 to 41 in 2016. In India, in the year 2015, infant mortality accounts for 37 infant deaths per 1000 live births, of which 67.8% infants (25 per 1000 live births) died in the first month of births (Registrar General of India 2015). In 2013, India recorded the highest absolute number of neonatal deaths of any country, nearly 0.75 million (Wardlaw T, Amouzou A, Velez L, Dwivedi A, Hug L., 2014)

WHO recommends that infants be exclusively breastfed from birth to about six months of infancy. If infants were being breastfed according to this recommendation, all (100%) infants would be breastfed from 0-6 months. However, the prevalence of EBF and other childhood feeding practices exist across regions of India, where Southern India had the highest EBF prevalence (79.2%) and the North-East reported the lowest (68.0%). EBF prevalence decreased with infant age, dropping faster in the South (43.7% at 5 months) compared to the North-East region (54.0% at 5 months) (Ogbo, F.A., Dhami, M.V., Awosemo, A.O. *et al* 2019) [7]. Mothers who are likely to successfully initiate lactation, encounter fewer problems, and maintain breastfeeding for a longer period if the child remains with the mother and put to the breast soon after delivery.

Materials and Methods

The Research approach was evaluative in nature. Descriptive design was used. The study was conducted among 120 postnatal mothers (60 mothers with vaginal delivery and 60 mothers with caesarean section) and their infants at six weeks of infancy. Samples were selected using Non probability convenient sampling technique. The tool consisted of three parts. Part I demographic information of the postnatal mother and the infant. Part II consisted of checklist to assess the breastfeeding practices of the postnatal mothers. Part III consisted of the checklist to assess the psychosocial and the cognitive development and Physiological data like Weight, height, head and chest circumference of the infant.

Results

Demographic information – Mother

Table 1.1: Frequency and percentage distribution of the postnatal mothers based on age, religion and educational status, parity, gestational age at delivery and prior feeding practice for the first baby, N=120

Sl. No	Demographic Variables	Vaginal Delivery		Caesarean Section	
		F	%	F	%
1.	Age				
	a) < 21 years	3	5.0	0	0
	b) 21 to 30 years	46	76.7	50	83.3
	c) 31 to 40 years	11	18.3	10	16.7
	d) > 40 years	0	0	0	0
2.	Religion				
	a) Hindu	40	66.7	40	66.7
	b) Christian	14	23.3	9	15.0
	c) Muslim	4	6.7	9	15.0
	d) Buddhism	2	3.3	2	3.3
3.	Educational status				
	a) Uneducated	14	23.3	7	11.7
	b) Educated	46	76.7	53	88.4
	i) Primary school	1	1.7	1	1.7
	ii) High school	9	15.0	9	15.0
	iii) Higher secondary school	1	1.7	4	6.7
	iv) Degree	35	58.3	39	65.0
4.	Occupation				
	a) Un-employed	50	83.3	50	83.3
	b) Employed – If employed	10	16.7	10	16.7
	i) Government	7	70%	7	70%
	ii) Private	1	10%	1	10%
	iii) Own business	2	20%	2	20%
	iv) Daily wages	0	0	0	0
5.	Family income per month				
	a) Rs.<5000	1	1.7	1	1.7
	b) Rs 5001-10,000	0	0.0	1	1.7
	c) Rs10,001 – 15,000	3	5.0	0	0.0
	d) Above 15,000	56	93.3	58	96.7
6.	Prior antenatal class regarding lactation counselling				
	a) Yes	14	23.3	0	0.0
	b) No	46	76.7	60	100

Table 1.1 shows that the majority (76.7%) of the mothers with vaginal delivery and 83.3% of the mothers with caesarean section were in the age group of 21-30 years. Equal (66.7%) of the mothers with vaginal delivery and

caesarean section were Hindus. Majority (76.67%) of the mothers with vaginal delivery and 88.4% of the mothers with caesarean section were educated and among them the majority (58.3%) of the mothers with vaginal delivery and 65.0% of the mothers with caesarean section had completed degree. Majority (83.3%) of the mothers with vaginal delivery and caesarean section were unemployed. Majority (93.3%) of the mothers with vaginal delivery and 96.7% of the mothers with caesarean section had a family income of more than Rs. 15,000. Majority (76.7%) of the mothers with vaginal delivery and 100.0% of mothers with caesarean section had prior antenatal class regarding lactation counselling.

Table 1.2: Frequency and percentage distribution of the postnatal mothers based on parity, gestational age at delivery and prior feeding practice for the first baby, duration for first child, difficulties during previous breastfeeding practice and adequacy of breast milk secretion for first child, N=120

S. No.	Demographic variables	Vaginal delivery		Caesarean section	
		F	%	F	%
1. Parity					
	a) 1	47	78.3	43	71.7
	b) 2	12	20	16	26.7
	c) 3 and more	1	1.7	1	1.7
2. Gestational age at delivery					
	a) < 38 weeks	12	20	15	25
	b) 38-40 weeks	47	78.3	44	73.3
	c) > 40 weeks	1	1.7	1	1.7
3. Prior feeding practice for the first child					
	a) Exclusive breastfeeding	13	100	17	100
	b) Top feeding	0	0	0	0
	c) Mixed Feeding	0	0	0	0
4. Duration of breastfeeding for the first child					
	a) Up to 6 months	2	16.7	1	5.9
	b) Up to 1 year	4	33.3	11	64.7
	c) Up to 2 years	7	50	5	29.4
	d) Up to 3 years	0	0	0	0
5. Any difficulties during previous breastfeeding practice					
	a) Yes	4	25	1	5.9
	b) No	9	75	16	94.1
6. Adequacy of breast milk secretion for the first child					
	a) Adequate	13	100	16	94.1
	b) Inadequate	0	0	1	5.9

Table 1.2 shows that, majority (78.3%) of the mothers with vaginal delivery and 71.7% of the mothers with caesarean section were primipara. Majority (78.3%) of mothers with vaginal delivery and 73.3% of mothers with caesarean section delivered at 38-40 weeks of gestation. All the mothers with vaginal delivery and caesarean section exclusively breastfed the first child. Majority (50%) of the mothers with vaginal delivery breastfed the first baby till 2 years and 64.7% of the mothers with caesarean section breastfed the first baby till one year. Majority (75.0%) of the mothers with vaginal delivery and 94.1% of the mothers with caesarean section did not have any difficulties during the previous breastfeeding practices. All the mothers with vaginal delivery and majority (94.1%) of the mothers with caesarean section had adequate breast milk secretion for first child

Demographic information - Infants

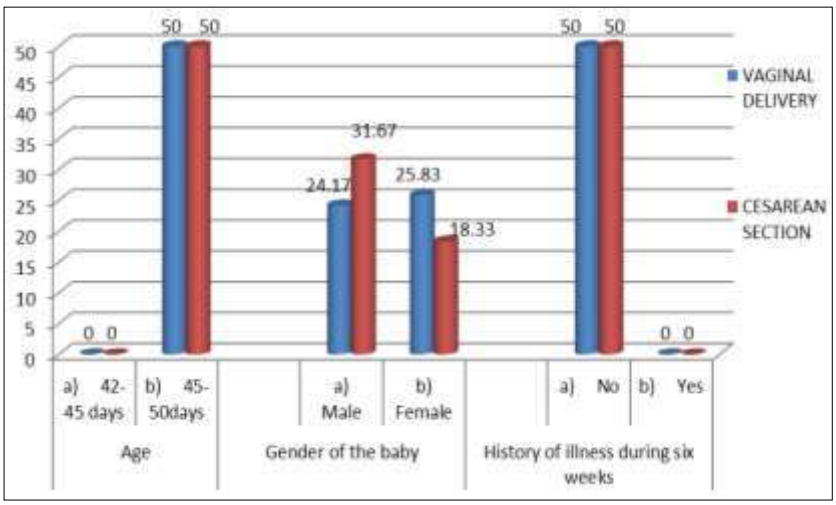

Fig 1: Frequency and percentage distribution of the infants of postnatal mothers based on age in days, gender, history of illness and type of illness. N = 120

Figure 1shows that all the infants of mothers with vaginal delivery and caesarean section were in the age group of 45-50 days. Majority (51.7%) of the infants of mothers with vaginal delivery were female whereas the majority (63.3%) of the infants of mothers with caesarean section were male. None of the infants of mothers with vaginal delivery and caesarean section had any history of illness during the six weeks.

Breastfeeding practice

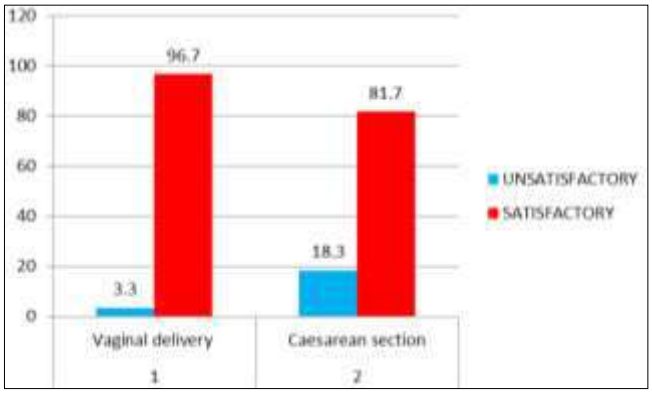

Fig 2: Frequency and percentage distribution of the breastfeeding practices of mothers with vaginal delivery and caesarean section

Figure 2 shows that majority (96.7%) of the mothers with vaginal delivery and 81.7% of the mothers with caesarean section had satisfactory breastfeeding practice whereas 3.3% of the mothers with vaginal delivery and 18.3% of the mothers with caesarean section had unsatisfactory breastfeeding practice.

Growth pattern

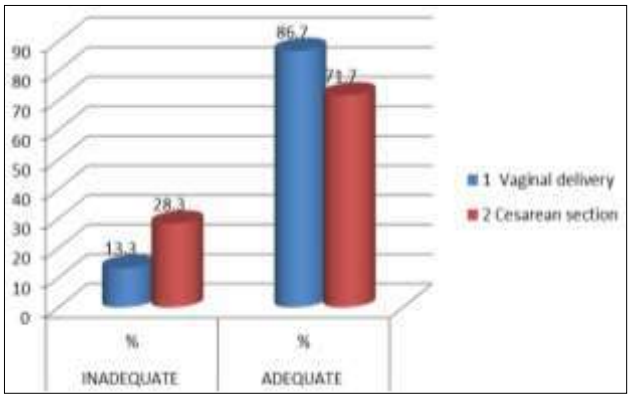

Fig 3: Frequency and percentage distribution of the growth pattern of the infants of mothers with vaginal delivery and caesarean section

Figure 3 shows that majority (86.7%) of the infants of mothers with vaginal delivery and 71.7% of the infants of mothers with caesarean section had adequate growth pattern whereas 13.3% of the infants of mothers with vaginal delivery and 28.3% of the infants of mothers with caesarean section had inadequate growth pattern at six weeks of infancy.

Comparison of breastfeeding practices and growth pattern

Table 2: Comparison of breastfeeding practices and growth pattern of infants of mothers with vagival delivery and caessarean section N = 120

Variables	Vaginal delivery		Caesarean section		Student independent, t-test
	Mean	SD	Mean	SD	
Breastfeeding practice	88.0	10.441	72.73	14.137	t = 6.729 p = 0.001 *****S**
Growth pattern	77.19	16.226	66.56	19.59	t = 3.235 p = 0.002 ****S**

Table 2 shows that the mean breastfeeding practice score of mothers with vaginal delivery is 88.0 with a standard deviation of 10.441, whereas the mean score of mothers with caesarean section is 72.73 with a standard deviation of 14.137. There is a statistically significant difference between the breastfeeding practices of mothers with vaginal delivery and caesarean section at 1% level of significance. The mean growth pattern score of infants of mothers with vaginal delivery is 77.9 with a standard deviation of 16.226, whereas the mean growth pattern score of mothers with caesarean section is 66.56 with a standard deviation of 19.59. The p value is greater than 0.002. There is a statistically significant difference between the growth pattern of infants of mothers with vaginal delivery and caesarean section at 1% level of significance.

Correlation of the breastfeeding practice

Table 6: Correlation of the breastfeeding practice of mothers with vagival delivery and caessarean section and growth pattern of infant at six weeks of infancy N = 120

S. No.	Variables	Correlation coefficient value
1.	Breastfeeding practices of postnatal mother	r = 0.384 p = 0.001 *****S**
2.	Growth pattern of infants	

Table 6 shows that there was a positive correlation between breastfeeding practice of the mothers with the growth pattern of infants at six weeks of infancy at $p<0.001$ level of significance. The findings reveal that when the breastfeeding practice good then the growth pattern is adequate.

Discussion

In relation to the breast feeding practices, vaginal delivery mothers had a high mean score of 88.0 compared to the mothers with caesarean section which was 72.73. This shows that there is a significant difference in the breastfeeding practices among mothers with vaginal

delivery and caesarean section. The result is supported by the study findings that breastfeeding practices varied considerably by mode of delivery and the mothers with vaginal delivery were able to establish breastfeeding and satisfactorily feed their babies as reported by Motee, A. et al. (2012), Ortiz, A. (1996), Chalmer, B. (2006) & Wang, B. et al. (2006). Palla H & Kitsantas P. (2017) [8].

There is a statistically significant difference between the breast feeding practices of mothers with vaginal delivery and caesarean section at 1% level of significance. Prior, E. et al. (2011) in their study found that the rates of breastfeeding were lower after caesarean delivery compared with after vaginal delivery at $p<0.001$ level of significance.

In relation to the growth pattern of infants at six weeks of infancy, the study findings revealed that 86.7% of the infants of mother with vaginal delivery and 71.7% of the infants of mothers with caesarean section had adequate pattern. There is a statistically significant difference between the growth pattern of infants of mothers with vaginal delivery and caesarean section at 1% level of significance. The result is supported by Saki, A. et.al (2010) [1], who found that the neonate's weight gain pattern for C-section deliveries was below than that of normal vaginal deliveries and the type of delivery contributed strongly to the weight gain pattern in the first month of infancy.

Association of the breast feeding practices of the mothers with the demographic variables revealed that there was a statistically significant association found between breastfeeding practices of mothers with the educational status at $p < 0.05$ level of significance. The finding is supported by the study finding breastfeeding success is associated with the education (Janke, J. 2008).

Conclusion

The present study had been supported by a series of other studies which confirmed that there is a significant difference exists between the breastfeeding practices of mothers delivered vaginally and caesarean section. Also, the breastfeeding practice had positive relationship on the growth pattern of the infants at six weeks of infancy. The recommendation of the study was that special assistance needs to be provided to women undergoing caesarean section to achieve adequate breastfeeding practice.

Nursing Implications

- The staff nurse must provide health teaching to the post-natal mothers regarding importance of breast feeding to the mother and the baby.
- Mothers undergoing caesarean section should be well motivated to breastfeed the baby and support to be provided to caesarean mothers to breastfeed the baby
- The staff nurses must provide health teaching to the family member's role in supporting breast feeding to the baby.

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