

Original Research Article

Barriers to exclusive breast feeding, the missing links: a cross sectional study from Puducherry, India

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Received: 26 January 2020

Revised: 03 February 2020

Accepted: 02 March 2020

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ABSTRACT

Background: Breast milk, the first natural food for a new-born, provides all the energy and essential nutrients an infant requires for the first 6 months of life. The NHFS -4 survey shows only 45.5% of children are exclusively breastfed (EBF) in Puducherry. This study aims at assessing the socio-demographic characteristics associated with exclusive breastfeeding in a tertiary hospital in Puducherry and identify the barriers in the promotion of exclusive breastfeeding.

Methods: Community-based cross-sectional study at a tertiary hospital in Puducherry. Sample size: 115 mothers of 6 months to 2-year-old children, born term gestation with a birth weight of >2.5 kg, attending the Paediatric OPD. Questionnaire-based study comprising of socio-demographic and parameters pertaining to exclusive breast-feeding.

Results: Only 44.3% of the mothers have exclusively breastfed in the first 6 months. Shorter duration of spacing between births and caesarean section had significant negative association with exclusive breast-feeding. Most of the mothers received postnatal counselling on breast-feeding (94%) of which 58% were by health care personnel. Despite that, only a sixth (19%) of them were well versed with proper breastfeeding techniques. Poor secretion (45.3%), sore/inverted nipple (23.5%) amounted to the most common of the barriers. Among working mothers, 42.9% attributed their jobs as the cause for early weaning.

Conclusions: The prevalence of exclusive breastfeeding is still low even among a literate study group. There were no significant association with socio-demographic factors found, but lacunae were identified. A more objective post-natal counselling to mothers involving their caregivers may improve the current scenario.

Keywords: Barriers, Exclusive breastfeeding, Puducherry, Socio-demographic factors

INTRODUCTION

Breast milk, the first natural food for a new-born, provides all the energy and essential nutrients an infant requires for the first six months of life, half of the nutritive requirement for the next six months and thereon one-third of the requirement till two years of age, responsible for the infant's proper physiological growth and development.¹⁻³ 'Exclusive Breastfeeding' (EBF)

implies that nothing else is to be given to the baby except breast milk during the first six months of life.³ The WHO recommends exclusive breastfeeding for all new-born during the first six months of life.⁴

Breast-feeding, besides providing nutrition, energy, adequate sensory and cognitive development also protects the child from various infections and chronic diseases like obesity, type1/2 diabetes, leukemia and Sudden

Infant Death Syndrome.⁵ The United Nations Children's Fund (UNICEF) estimates that exclusive breastfeeding in the first six months of life can reduce under-five mortality rates in developing countries by 13%.⁶ In India, 15% out of 24 lakh child deaths can be reduced by enhancing breastfeeding practices.^{1,2,7}

Besides benefits to the baby, the breastfeeding mother also has a substantially low risk of postpartum haemorrhage, ovarian and breast cancer, retained gestational weight gain, type 2 diabetes, myocardial infarction and various metabolic syndromes.^{1,5,7,8} However, as per the NHFS - 4 survey (2015-2016), only 54.9% of babies are exclusively breast-fed in India, and 45.5% in Puducherry.⁹ Cultural, social and religious factors in our country such as extra lacteal feeding, use of foods soon after child-birth like sugar water or honey are prevalent, which have a negative impact on the feeding practises.¹⁰⁻¹² Poor feeding practices and socio-demographic characteristics are reported as major reason for poor health outcomes in developing countries.¹⁰⁻¹²

There are a number of organisations all over the world that work towards the promotion of breast-feeding. In 1991, Breast-Feeding Promotion Network of India (BPNI) was formed to protect, promote and support breastfeeding.¹²

This study aims to assess the socio-demographic characteristics and hindering factors that may be associated with the promotion of exclusive breast-feeding.

METHODS

This was a cross sectional hospital based study conducted in the Out Patient Department (OPD) of the Department of Paediatrics of a tertiary care hospital in Puducherry with approval from the Institutional Ethics Committee.

A sample size of 115 participants calculated, based on a previous study by Ranjana et al, with 95% confidence interval using the formula $4PQ/d^2$.¹³ A p value of <0.05 considered as statistically significant. Purposive sampling was the method used to collect data.

Inclusion criteria

The inclusion criteria considered for this study included all women of childbearing age attending the OPD, having children of the age group of 6 months to 2 year, who were born as term gestation with a birth weight of >2.5 kilograms, and volunteered to take part.

Exclusion criteria

Mothers whose children were born as Pre terms (gestational age <37weeks), low birth weight babies (birth weight <2.5kg) and babies with congenital heart defects, were excluded from the study sampling.

Written informed consent was obtained from the study participants who volunteered, after explaining in detail the purpose of the study and their right to withdraw from the study at any time maintaining their confidentiality.

Data collection was carried out using a self-developed questionnaire with inputs from previous studies.¹¹⁻¹⁵ with two sections. Section-A was based on the socio-demographic characteristics of the participants which included age of the mother, residence, education, employment status of the mother, type of family, socio economic status, birth order of the child, mode of delivery and spacing between births. Section-B included questions regarding antenatal counselling given during pregnancy, post-natal counselling after birth, the people involved in counselling, whether breast feeding was initiated after birth along with the day of initiation, number of times the baby is breast fed in a day, total duration of exclusive breast feeding.

The use of pre-lacteal feeds like sugar, honey etc., awareness on the significance of colostrum, knowledge on proper/ effective breast feeding techniques, reasons for defaulting from exclusive breast feeding, type of extra lacteal feeds given, from whom the advice was taken, and the mothers feedback on such practices were also sought. The answers to the above questions were noted in the written prescribed proforma.

Data analysis

The data collected was subjected to appropriate analysis using the SPSS software version 19.0 for Windows. (SPSS Inc, Chicago, IL, USA).

RESULTS

Of the total 115 post-natal mothers interviewed in the study from the age of 18 years to 40 years, the majority of the mothers belonged to the age group between 20-25 years (n =53/ 115, 46.1%). The study population consisted of 94% literate mothers (n=108/115), of which college graduates and high/ secondary school graduates (n= 96/115, 88%) formed the majority. However only 24% (n= 28/115) among all the mothers had a part time or fulltime job.

Among the total study population, 41% (n= 49/115) had a single child, the remaining mothers multiparous (n= 66/115, 59%), of which around two-third (n=48/66) stated they had a gap of 2-3 years between deliveries. All the mothers (n= 115) reported to have had institutional deliveries with assistance given by a trained staff nurse or doctor at the time of delivery. Only 40% (n=45) of post-natal mothers had their delivery by caesarean section. Regarding the sex of the child, two-thirds (n=72/115) of the mothers had male babies, the remaining one third (n= 43/115) being females. Around 83% (n= 95/115) of the mothers had uneventful antenatal, natal and post-natal periods (Table 1).

Table 1: Descriptive statistics on the socio-demographic characteristics and breastfeeding practices of the study population (N=115).

Characteristics/ Practises	Number (n) (%)	
Age of mother	<20 years	15 (13%)
	20-25 years	53 (46.1%)
	25-30 years	34 (29.6%)
	>30 years	13 (11.3%)
Education of mother	Illiterate	07 (6.1%)
	Primary School	12 (10.5%)
	High/Secondary School	48 (41.7%)
	College/ Professional	48 (41.7%)
Occupation	Housewife	87 (75.7%)
	Part-time Job	16 (13.9%)
	Full-time Job	12 (10.4%)
Socio-Economic Status (Modified Kuppaswamy Scale)	Class I	0
	Class II	24 (20.9%)
	Class III	32 (27.8%)
	Class IV	39 (34.0%)
	Class V	20 (17.3%)
Birth order of child b/w 6m-2yrs	1	49 (42.6%)
	2	51 (44.3%)
	>1	15 (13.0%)
Spacing b/w births (For birth order >1) (n =66)	<2yrs	18 (27.3%)
	>2yrs	48 (72.7%)
Gender of the child	Male	72 (62.6%)
	Female	43 (37.4%)
Mode of delivery	Vaginal delivery	70 (60.9%)
	Caesarean section	45 (39.1%)
Place of delivery	Home	0
	Primary health centre	02 (1.7%)
	Government hospital	76 (66.1%)
	Private hospital	37 (32.2%)
Antenatal co-morbidities	Nil	95 (82.6%)
	Diabetes	07 (6.1%)
	Hypertension	09 (7.8%)
	Thyroid Disease	04 (3.5%)
Antenatal counselling on breastfeeding	Yes	86 (74.8%)
	No	29 (25.2%)
Antenatal counselling given by	Mother/mother-in-law	09 (7.8%)
	Husband/family members	01 (0.9%)
	Doctor/Nurse	58 (50.4%)
	More than one person	18 (15.7%)
Intrapartum/postpartum problems	Nil	97 (84.2%)
	Baby with NICU stay	13 (11.3%)
	Maternal complication requiring intensive care stay	05 (4.3%)
Post natal counselling on EBF	Yes	108 (93.9%)
	No	07 (6.1%)
Postnatal counselling given by (n=108)	Mother/ Mother-in-law	03 (2.6%)
	Husband/Relative/Friend	02 (1.7%)
	Doctor/Nurse	67 (58.3%)
	More than one source	36 (31.3%)
Exclusively breastfed or not	Yes	51 (44.3%)
	No	64 (55.7%)
Breastfeeding initiated on	Day of life 1	98 (86.1%)

which day	Day of life 2/3	13 (11.3%)
	Beyond day of life 3	03 (2.6%)
	Awareness on Colostrum	(n=108)
	Yes	47 (43.5%)
	No	61 (56.5%)
	Barriers to EBF	(n=64)
	Insufficient secretion	29 (45%)
	Nipple problems	15 (23%)
	Prejudice towards formula milk for growth	08 (13%)
	Work/Job	12 (19%)
Extra lacteal feeds recommended by	Mother/Mother in law	17(26.6%)
	Husband/Relative	19 (28.1%)
	Friend/Others	02 (3.1%)
	Health care professional	10 (15.6%)
	Self-decision	16 (25.6%)
Post Natal counselling on breastfeeding techniques (n=108)	No	12 (10.5%)
	Vaguely/not clear	60 (55.2%)
	Yes, by mother/ In-law	10 (9.5%)
	Yes, by relative/ friend	02 (1.9%)
	Yes, by health professional	20 (19.1%)
Are extra lacteal feeds beneficial (n=64)	Yes	28 (44.4%)
	No	36 (55.6%)
Disadvantages noted after early extra lacteal feeding (n=36)	No expected weight gain	20 (56.6%)
	Repeatedly falls ill/respiratory infection	05(13.4%)
	Frequent diarrhoea episodes	11(30%)
Bottle feeding	Yes	43(67.8%)
	No	21(32.2%)

Table 2: Association with socio-demographic factors with exclusive breastfeeding. (dependent variable - exclusive breastfeeding).

Characteristics	Odd's ratio (95% CI)	p value
Age of Mother (<25yrs/>25yrs)	1.760 (0.624 - 4.966)	0.285
Education (Illiterate/ Literate)	1.375 (0.148 - 12.766)	0.780
Occupation (Employed/Unemployed)	0.372 (0.114 - 1.216)	0.102
Birth Order (<2/>2)	1.813 (0.631 - 5.212)	0.269
Sex of Child (F/M)	0.347 (0.126 - 0.957)	0.113
Spacing b/w births (<2yrs/>2yrs)	3.226 (0.757 - 13.756)	0.041*
LSCS (Yes/No)	0.047 (0.14 - 0.155)	0.000*(<0.05)

*p value <0.05 - significant

The total percentage of mothers in the above study group who practiced exclusive breast-feeding for six months was only 44.3% (n=51/115). Correlating this value, with socio demographic factors such as maternal age (<25yrs />25yrs), education of the mother (literate/ illiterate), occupation (unoccupied/ occupied), birth order(one /more than one), spacing between births (<2yrs/ ≥2yrs), caesarean section (no/ yes) and sex of the baby (male/female) through multiple logistic regression analysis, a significant negative association with shorter duration between spacing of births and caesarean deliveries (p value <0.05) was observed (Table 2).

Regarding breast feeding awareness and practices, three-fourth (n= 86/115) of the mothers claimed to have received antenatal counselling on breastfeeding, of which 50% (n=58/86) was by a health care professional (doctor or nurse). Even though all the mothers had their deliveries in a health care facility, 6% (n=7/115) of the mothers stated that they had not received post-natal counselling at all on exclusive breastfeeding. The mothers who received postnatal counselling were mostly from a health care professional alone or associated with a family member (mother/husband) (n= 103/108, 90%). Most of the mothers (n= 98/115, 88%) claimed to have initiated breast-feeding on the first day, though many

could not recall whether it was in the first hour. Less than half of the mothers counselled (n=47/108) stated that they were informed the importance of initiation within the first hour and knowledge on colostrum (Table 1).

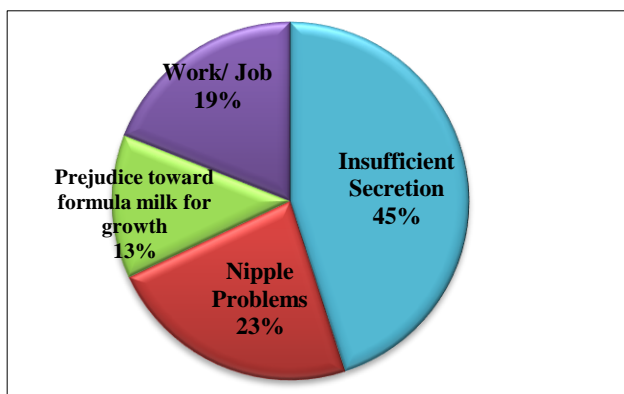


Figure 1: Barriers in continuation of exclusive breastfeeding by mother.

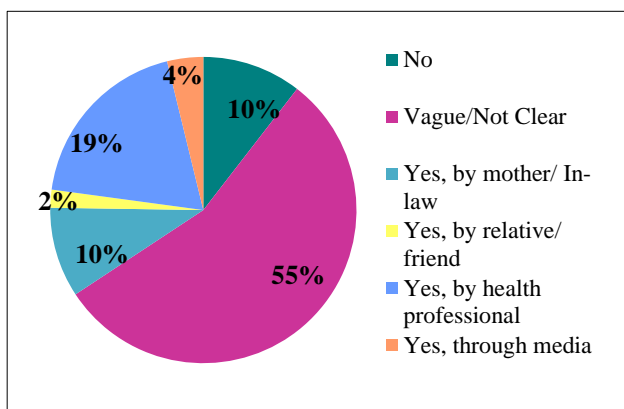


Figure 2: Awareness of breastfeeding techniques and practices in counselled postnatal mothers.

The major barriers against EBF in this study were poor maternal secretions (n= 29/64, 45.3%), inverted/sore nipple (n= 15/64, 23.3%) while 13% (n= 8/64), chose that they were prejudiced to adding formula/extra lacteal feeds early for their baby’s better growth (Figure 1). Among working mothers, 42.9% (n=12/28) attributed their jobs as the cause for early weaning. Only one-sixth of the mothers counselled (20/108, 19%) stated they were taught/ trained about proper breast-feeding techniques (Figure 2).

Almost two-thirds of the mothers (n = 38/64) disclosed that their parents/ in-laws/ husbands’ were responsible for them having to start extra-lacteal feeds, 16% (n= 10/64) revealed that their health care professional was also supportive of starting extra-lacteal feeds earlier than 6 months, while 26% (n= 16/64) said it was their own decision (Figure 3). However, 55% of these mothers (n= 36/64) revealed that they felt such extra lacteal feeds had not helped their baby, as they did not observe weight gain they expected (n = 20/36, 56.6%), in addition to frequent

episodes of diarrhea (n= 11/35, 30%) or repeated episodes of falling ill (n= 5/36, 13.4%).

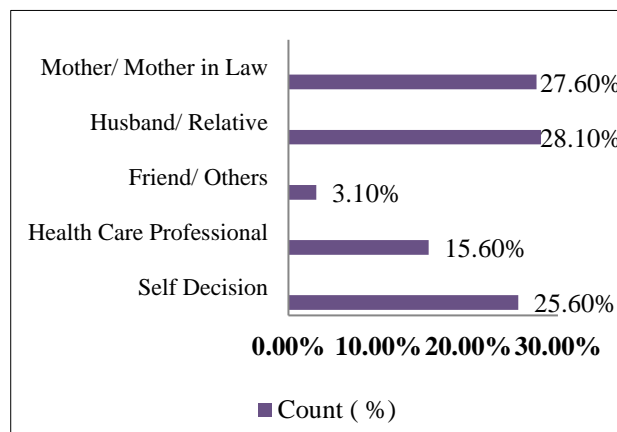


Figure 3: People who recommended Extra Lacteal feeding to the mothers.

DISCUSSION

As per the National Health and Family Survey 4 (NHFS 4, 2015-2016), the children exclusively breast-fed in India is 54.9%, whereas in Tamil Nadu and Puducherry it is 48.3% and 45.5% respectively.⁹ This study also observed a prevalence of 44.3%, which is in concordance to the above statistical data. Similarly, the percentage of institutional births in our study was 100% and caesarean sections 40% as against 99.9% institutional births and 33.6% caesarean sections documented for Puducherry in the NFHS 4.⁹

In a study by Radhakrishnan et al, from Tamil Nadu, the prevalence of EBF was 34%.¹¹ A study in Puducherry on Health Care Professionals by Renitha et al, showed a prevalence of 58% to EBF.¹⁴ Studies from other parts of India showed the prevalence of EBF to range 37% in Gujarat, 37.7% in rural North India, 46.5% in Uttar Pradesh to 63.5% in Delhi and 63.7% in Hubli respectively.¹⁵⁻¹⁹

In relation to the socio-demographic factors assessed, a significant negative association was found between caesarean sections shorter duration of spacing between subsequent childbirth (<2yrs). Studies by Senthilvel et al, and Radhakrishnan et al, also showed a similar association with caesarean section deliveries.^{20,11} Three-fourth (74.8%) of the mothers in the study recalled they were counselled during their antenatal period. This was almost similar to the results obtained by Dhandapany et al, (78-87%) on antenatal mothers in Puducherry.²¹

All the mothers in the study had deliveries at a health care facility and 86% of the mothers stated they initiated breast-feeding soon after birth (first day), though only one third could exactly recall the initiation was within one hour. The increase in the number of institutional deliveries may have a positive influence on early

initiation of breast-feeding by the mothers as seen with similar trends in other studies.²²⁻²⁵ In addition, 6% mothers mentioned not receiving post-natal counselling on EBF. Of those counselled, less than half (43.5%) only were aware of the importance of early initiation and colostrum. In another study also conducted in Puducherry, only 56% of the mothers knew that colostrum needs to be given which is also low compared to others studies in India where the importance of colostrum was known to 75- 90% of the mothers.²⁶⁻²⁸

Poor maternal secretions (45.3%), inverted/ sore nipples (23.3%) were the major difficulties faced by mothers against EBF. These findings are similar to those reported by Parmar et al, Aggarwal et al, Parekh et al, and Mallikarjun et al.²⁹⁻³² In the studies by Palanivel et al, in Tamil Nadu and Kashif et al, in Uttar Pradesh, the above reasons attributed to 20-30% of the total barriers.^{33,17}

A population of the mothers (13%) started early weaning, as they were prejudiced that it was required for their baby's better growth. Studies by Ratnayke et al, Li et al, and Kashif et al, had similar observations.^{34,35,17} Almost half of the working mothers in the study population attributed their jobs as the barrier to EBF. Observations by Renitha et al, and Ratnayke et al, also stated mothers had difficulty in breast feeding while working owing to job timings, inability to express breast feeds or no proper facility to breast-feed at work.^{14,35}

Ratnayke et al, observed that over 50% of the mothers were advised to start other feeds early by their family members and 12% by a health care worker on the same.³⁵ The present study too showed the family was influential for 60% mothers and health care professional in 13%. However, the mothers who were not satisfied with having given extra-lacteal feeds were dissatisfied for not achieving the expected weight gain in addition to frequent respiratory/diarrheal diseases. Statistical significance with the incidence of the above diseases sans EBF has been reported in several studies.^{11,36,37}

CONCLUSION

The prevalence of exclusive breast-feeding is still low despite having a fairly literate study group. Although there were no gross significant association with socio-demographic factors, lacunae have been identified. Antenatal breastfeeding counselling combined with a good post-natal lactation support especially for the initiation of breastfeeding in caesarean section mothers, proper breastfeeding techniques and facilities to continue exclusive breastfeeding in working mothers may overcome the major barriers. A more objective counselling especially in the post-natal period to mothers and their care givers may also facilitate exclusive breastfeeding to a great extent.

ACKNOWLEDGEMENTS

Authors would like to acknowledge all the mothers who participated in the study and gave their valuable responses.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Sri Manakula Vinayagar Medical College and Hospital, Puducherry, India

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Cite this article as: Nair GG, Arunagirinathan AK, Nirmal SR, Rajesh YB. Barriers to exclusive breast feeding, the missing links: a cross sectional study from Puducherry, India. *Int J Contemp Pediatr* 2020;7:884-90.