

Original Research Article

A cross sectional study on early initiation of breastfeeding among mothers in Chennai city

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ABSTRACT

Background: The practice of breast feeding is the best intervention in promoting child survival. The success depends on early initiation of breast feeding soon after birth. Globally a three fifth of new born wait for more than one hour to begin breast feeding, despite the fact that the practice will extremely reduce neonatal infections and maternal postpartum complications. In this context, the objectives of the study was to estimate the prevalence of early initiation of breastfeeding and barriers in non-initiation of early breast feeding among recently delivered mothers at Chennai.

Methods: This cross sectional study was conducted in Zone VI of Chennai. Four hundred and fifty (450) delivered a term, live baby with in past 1 year were selected by using simple random technique. Pre-tested structured interview schedule was used to collect data.

Results: Among the study group, 54.4% mothers initiated breast feeding within first one hour after delivery. Delay in handing over the baby to the mother (43.9%), maternal complications (19%), neonatal complications (14.1%), Caesarean section (17.6%), and misconception of insufficiency of milk secretion (5.4%) were barriers in non-initiation of early breast feeding.

Conclusions: The study explains the prevalence and importance of early initiation of breast feeding. Avoidance of pre lacteal feeds. Promotions of breast milk substitutes and commercial products should be restricted. Co-ordination between the health care providers and mothers must be strengthened. Maternal education plays a vital role in clarifying the ignorance and misconceptions. Emotional and social support influences mothers to initiate it early.

Keywords: Child survival, Early initiation, Social support

INTRODUCTION

Breast milk is nature's elixir to all living beings. Human milk is virtually a life line for the new born baby who consists of highly nutritive and immunological factors which are required for the optimal growth and development of the baby. Hence the practice of breast feeding is safest intervention to promote child survival. It also has significant beneficial effects on the health of mother and promotes birth spacing too. The successful implementation of breastfeeding practises mainly depends on the initiation of breast feeding soon after birth and the duration of breast feeding.

Early initiation of breastfeeding is defined as initiation of breastfeeding within one hour of birth¹. During the first one hour after birth, the baby is active and ready to suckle the breast with spontaneous attachment to breast. It provides skin to skin contact which prevents hypothermia and promotes bonding between mother and child. Early initiation of breastfeeding enhances the secretion of oxytocin which increases the flow of milk and also helps in involution of uterus thereby reducing postpartum haemorrhage.

Globally around three out of five new-borns delivered wait for more than one hour for initiation of breastfeeding, despite the fact that early initiation of breastfeeding will significantly reduce the Neonatal, Infant and under - five mortality rates and maternal postpartum complications. In India the early initiation of breastfeeding has increased 1.8 folds from 24.5% in 2006 to 44.6% in 2014, according to NFHS 3 and NFHS 4 respectively ². Around 58% of new born are breastfed within 1 hour of birth in Tamil Nadu which is very low. According to the National Family Health Survey, 80 per cent deliveries are now institutional deliveries in India. Yet the prevalence of early initiation of breastfeeding is between 30 – 60 % among the Indian states and there is a huge disparity both within and among different states.

The global report on neonatal mortality by the UNICEF revealed that, India accounts for a quarter of the global burden of neonatal deaths, among which nearly 80 per cent of them were due to preventable causes. Though infant mortality in the country has declined to a greater extent, the number of new-borns dying each year remains unacceptably high. The first 28 days of life is a vulnerable period and crucial for a child's survival. Breastfeeding initiation after 2-24 hours of birth holds a 33% higher risk of neonatal deaths when compared to initiation within an hour of birth ³. Hence, the early initiation of breast feeding is one of the most cost effective and significant intervention that is available for reducing the Neonatal, Infant and under- five mortality rates in a developing country like India. Early initiation of breast feeding can be rightly called as the “fourth stage of labour”. Breast feeding; the first one hour – save one million babies! (World Health Day 2007, Theme). In the above context, the study was conducted to find the prevalence of early initiation of breastfeeding and factors associated with non-initiation of early breast feeding among recently delivered mothers at Chennai.

Objectives of the study were to estimate the prevalence of early initiation of breastfeeding (within first one hour of birth) among urban mothers and to assess the factors associated with non-initiation of breast feeding within one hour of birth.

METHODS

Study design

The Study design was cross sectional study.

Place of study

Place of Study was Zone VI in Chennai Corporation.

Period of study

Duration of study was from January 2009 to October 2009.

Study population

Mothers who had recently delivered a live baby with in past one year from the study period living in Zone VI of Chennai were selected for the study.

Inclusion criteria

Mothers who have delivered at term live baby and less than one year of age during the study period

Sample size

As per the National Family Health Survey -3 data, the prevalence of Early initiation of breastfeeding within first one hour was 58.8% in Tamil Nadu ⁴, considering it as P with limit of accuracy as 8% of prevalence and 5% attrition the sample size is calculated as follows,

$$N = Z_{\alpha/2}^2 \times P \times Q / L^2 = 1.96 \times 1.96 \times 58.8 \times 41.2 / 4.7 \times 4.7 = 421.299$$

With 5% attrition, for the minimum sample size calculated, the sample size is

$$(421 + 21.05) = 442. \text{ It was rounded off to } 450$$

Hence sample size for this study will be 450 mothers.

Sampling method

Simple random sampling method was selected for the study.

The study was done with in Chennai corporation area. Out of fourteen zones in Chennai Corporation, zone VI was selected randomly by lottery method. There were 18 divisions in the Zone VI, from which five divisions were selected randomly by lottery method. In each of the 5 division, 90 mothers who satisfy the inclusion criteria were selected for this study by systematic random sampling technique.

Data collection

Permission from the Director, Institute of Community Medicine, Commissioner, Corporation of Chennai and Director, District Family Welfare Bureau was obtained prior to data collection.

Data was collected using the structured interview schedule (Pre- tested and modified after pilot study). The questions were standardized to local social and cultural norms, values and religious beliefs. The purpose of the

Study was explained to the participants both in Tamil and English. The wilful respondents satisfying the inclusion criteria were interviewed after obtaining informed consent. Mothers were assured of confidentiality of information provided by them. Data on the background demographic characteristics like age, educational status, occupation, religion, social class, delivery, breast feeding of present child and barriers in non-initiation of early

breast feeding within one hour of birth were obtained from all the participants. The results of the pre-testing pilot study were not included in the final analysis.

Statistical analysis

The Data was entered and analysed using EPI INFO & SPSS version 16.0. Descriptive statistical analysis done by calculating percentages and Chi-square test and 95 % CI were computed. ($p < 0.05$ was considered to be significant).

RESULTS

Sociodemographic profile

In this study, the mean age of the mothers was 24 years and majority of mothers (83.6%) were between the age group of 20 -29 years. Around 418(92.9 %) of mothers were literates and only 7.1% of the mothers were illiterate. A majority of 436 (96.8%) mothers were housewives. About 51.8% mothers belonged to upper socio economic class. The mode of delivery was normal vaginal in 274 (60.8%) mothers and 176 (39.2%) mothers had delivered by caesarean. About 232 (51.5%) mothers gave birth to female child and 218 (48.5%) mothers had male child. (Table 1)

Table 1: Percentage distribution of the study population by socio demographic characteristics.

Variables	Total Frequency n= 450 (N %)
Age of the mother (in years)	
≤19	34 (7.6)
20-29	376 (83.6)
≥30	40 (8.8)
Educational Status of mother	
Literate	418 (92.9)
Illiterate	32 (7.1)
Occupation of the mother	
House wife	436 (96.8)
Working	14 (3.2)
Socio economic status	
Upper class	233 (51.8)
Middle class	154 (34.2)
Lower class	63 (14)
Mode of delivery	
Normal	274 (60.8)
Caeserean section	176 (39.2)

Early initiation of breastfeeding

Among the study group, 54.4% mothers initiated breast feeding within first one hour after delivery. 40.6% mothers initiated breastfeeding between 1 – 24 hours and 4.7% mothers initiated breast feeding 24 hours after delivery (Figure 1). Therefore the prevalence of early

initiation of Breast feeding in our study group was found to be 54.4 % (245 mothers).

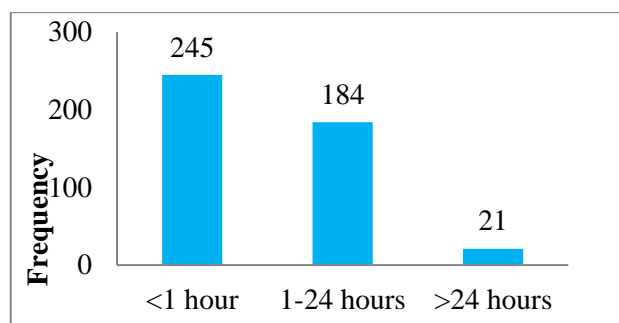


Figure 1: Prevalence of early initiation of breast feeding in the study group.

On comparison with the background characteristics, mode of delivery and occupation of the mother had a statistically significant and positive influence on the early initiation of breast feeding. It was observed that, early initiation was higher in (58.8%) mothers who had normal delivery than 47.7% of mothers who had caesarean section. ($p = 0.022$). Around 71.4% working mothers initiated breast feeding early while only 53.9% of housewives had initiated breast feeding within first one hour of birth. ($p < 0.05$)

Barriers in non-initiation of breast feeding with in first hour of birth

Among the study group, 45.6% (205) mothers did not initiate breast feeding within first one hour after delivery. In 90 (43.9%) mothers there was delay in handing over the baby to the mother which was responsible for non-initiation breast feeding within first one hour of delivery. Maternal complications such as postpartum haemorrhage, preeclampsia and other causes resulted to non-initiation of early breast feeding in 39 (19%) mothers. Neonatal complications such as birth asphyxia, neonatal sepsis and neonatal seizures were attributed to non-initiation in 29 (14.1%) mothers. Caesarean section resulted in non-initiation in 36(17.6%) mothers. Around 11(5.4%) mothers had the misconception that they did not have enough secretion of milk for the baby. Figure 2

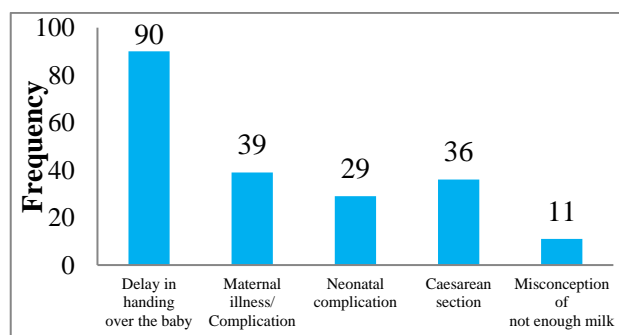


Figure 2: Barriers associated with non-initiation of early breast feeding.

Awareness and practice of early initiation of breastfeeding

Among the 450 study participants, 121(26.8%) mothers were aware and had knowledge on early initiation of breast feeding and the remaining 329(73.1%) mothers were not aware about early initiation. Around 82(67.8%) mothers who had awareness about early initiation had practised early initiation, while 49.5% of mothers who had no awareness, also practised early initiation of breast feeding. Therefore the awareness was significantly associated with practice of early initiation of breast feeding ($p=0.001$) (Table 2)

Table 2: Awareness and practice of early initiation of breast feeding.

Awareness about early initiation	Practiced within first one hour of birth	Practiced after first hour of birth
Yes	82 (67.8%)	39 (32.2%)
No	163 (49.5%)	166 (50.5%)

($\chi^2 = 11.84$ $p = 0.001$ $df = 1$)

Of the 245 participants who practiced early initiation of breast feeding within one hour of birth, the breast feeding was initiated by health care providers (doctors & nurses), mother of the participant and others(self, friends & relatives) in 113(46.1%), 63(25.7%), 69(28.2%) the study participants respectively. The observation was found to be statistically significant where $p < 0.05$. Therefore, health care providers have an important role in the early initiation of breast feeding.

Prelacteal feeds and early initiation of breast feeding

In this study, about 78(17.3%) babies were given prelacteal feeds and 372 (82.7%) babies had not received any prelacteal feeds figure 3. Early initiation was observed in 30.8% babies who were given prelacteal feeds and 59.4% in babies who were not given prelacteal feeds $p=0.00$, table 3, hence there is an inverse significance between the use of prelacteal feeds and the early initiation of breast feeding.

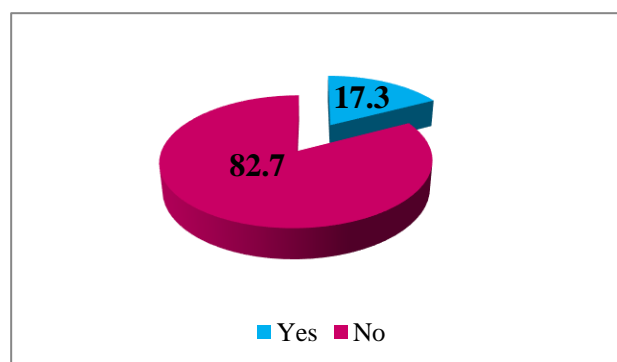


Figure 3: Prevalence of the practice of prelacteal feeds.

Table 3: Prelacteal feeds and early initiation.

Prelacteal feeds	Upto 1 hr	More than 1 hr
Yes	24 (30.8%)	54 (69.2%)
No	221 (59.4%)	151 (40.6%)

($\chi^2 = 21.323$ $p = 0.000$ $df = 1$).

DISCUSSION

A cross sectional study was conducted to estimate the prevalence of early initiation of breast feeding, the factors associated with it and the barriers in non-initiation of breast feeding with in first hour of birth in an urban area of Tamil Nadu.

In this study, the early initiation of breastfeeding of the new born was found to be 54.5% which was higher when compared to the Aguayo VM et al study⁵. The study also revealed that the rates of early initiation of breastfeeding in India have increased from 24.5% in 2006 to 44.6% in 2014, with an average annual rate of increase of 10.3% which is still very low. This evidence indicates that effective community based action and vibrant mass media communications are required to increase the rate of early breast feeding within the first hour of birth.

Breastfeeding initiation is extensively delayed when the mode of delivery is by caesarean section and in the present study the rates were lower among caesarean deliveries (58.8%) as compared to vaginal deliveries (47.7%) and the difference was statistically significant with p value of 0.02, which was similar to Senanayake et al⁶ study findings.

This study revealed that around 71.4% working mothers initiated breast feeding early while only 53.9% of housewives initiated early breast feeding ($p < 0.05$) which differs drastically from findings of Vindhya Polineni et al⁷ which, showed that among non-working women 53.3% of them had breastfed their child within one hour after delivery and 33.6% working mothers breastfed their babies within one hour. It implies that working women have more opportunities to socialize with the each other and hence they had better awareness about the benefits of early initiation of breastfeeding.

Barriers in non- initiation of breast feeding with in first hour of birth

Among the study group, 45.6% (205) mothers did not initiate breast feeding within first one hour after delivery. In 90 (43.9%) mothers among the 205 mothers, there was delay in handing over the baby to the mother which was responsible for non- initiation breast feeding within first one hour of delivery. Maternal complications such as postpartum haemorrhage, preeclampsia and other causes resulted in non-initiation among 39 (19%) mothers. Neonatal complications such as birth asphyxia, neonatal sepsis and neonatal seizures were the cause of non-

initiation in 29 (14.1%) mothers. Caesarean section resulted in non-initiation in 36 (17.6%) mothers. Around 11 (5.4%) of mothers had misconception that they did not have enough secretion of milk for the baby. The findings of the present study resemble the systematic literature review of Indu K. Sharma and Abbey Byrne⁸. The systematic review revealed, barriers to early initiation of breastfeeding in South Asia are predominantly on specific socioeconomic, health related and individual factors and demand side barriers. Vijayalakshmi et al⁹ study similarly cited that the delay in shifting the mothers from the labour room, neonatal ICU admissions, Caesarean section and family restrictions were found to be the reasons for delay in early initiation of breast feeding. These barriers can be removed by educating the health care provider, by providing proper training to them and also by strengthening the health care system.

Awareness and practice of early initiation of breastfeeding

Avneet Randhawa et al¹⁰ study depicted that, 27.30% of the mothers knew that the breastfeeding should be initiated within 1 hour of birth which is in concordance with our study ie, (26.8%) mothers had awareness and knowledge about early initiation of breast feeding. Around 82 (67.8%) mothers who had awareness about early initiation had practised early initiation, and this practice was higher when compared to Avneet Randhawa et al study which stated only 24.86% mothers started early breast feeding.¹⁰ We could elicit that; adequacy of knowledge invokes a positive attitude in the mothers and enables them to practice early initiation of breast feeding.

Of the 245 participants who practiced early initiation of breast feeding within one hour of birth, the breast feeding was initiated by health care providers (doctors & nurses), mother of the participant and others (self, friends & relatives) in 113 (46.1%), 63 (25.7%), 69 (28.2%) respectively. The observation was found to be significant where $p = 0.05$. Similar evidences were quoted in a publication of U.S. Department of Health and Human services.¹¹ Therefore interaction of health care providers with mothers have influential role in initiating early breast feeding. After the delivery of the baby, delay in shifting the mother, low health care provider - patient ratio, reduced man power in hospitals and lack of emotional support from the family members also affects the practice of early initiation of breastfeeding.

Pre lacteal feeds and early initiation of breast feeding

In this study, about 78 (17.3%) babies were given prelacteal feeds. Early initiation was observed in 30.8% babies who were given prelacteal feeds and in 59.4% babies who were not given prelacteal feeds ($p = 0.00$) hence there is inverse significance between use of prelacteal feeds and early initiation of breast feeding. This practice of pre lacteals use was less when compared to meshram et al¹² study and Cheedarla V et al¹³ study which reported 44.7% and 34% prelacteal use

respectively. Similarly Das A et al¹⁴ study suggested that practicing prelacteal feeds reduces the chances of early initiation and exclusive breast feeding. Children who had received prelacteal feeds had approximately 60% lesser odds of being breastfed exclusively for the first six months. Prelacteal feeds has a negative influence on breastfeeding. Hence, it is mandatory to explain the harmful effects of prelacteal feeds to the mother and family members.

Initiation of breast feeding within one hour of birth is one of the ten steps in the Baby Friendly Hospital Initiative for ensuring successful completion of early initiation and exclusive breastfeeding¹⁵.

CONCLUSION

In conclusion the study explains the importance of early initiation of breast feeding as a public health priority and it is an important intervention strategy in reducing the neonatal, infant and under five mortality rates. Avoidance of prelacteal feeds is vital in ensuring early initiation of breast feeding and it is also imperative that the baby receives colostrum as the first feed. Advertisements and promotions of breast milk substitutes and formula feeds should be discouraged by strict and effective implementation of the Infant Milk substitute Act. Community based intervention programs are very useful in creating awareness among mothers and adolescent girls through health education. Breast feeding counselling sessions should be provided to all mothers during antenatal and postnatal visits. Strengthening the training programs for health care providers on the importance and method of breast feeding will help in the better implementation of early initiation of breast feeding. Maternal education plays a vital role in clarifying the ignorance and misconceptions about the breast feeding. Therefore, increasing female literacy rate is very vital in improving the practise of early initiation and exclusive breast feeding. Timely implementation of health-related policies and evaluation of the recommended interventions helps in achieving the Sustainable Developmental Goals. 3.2¹⁶, which targets the preventable and treatable measures of neonatal mortality.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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