

A Cross Sectional Study on Assessing the Relationship Between Prenatal Complications and Delay in Breast Feeding in New Born Babies

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ABSTRACT

The Baby friendly hospital initiative was launched in the year 1991 -1992, by World Health Organization and UNICEF, in around 156 countries throughout the world with a goal to ensure initiation of breast feeding in all infant before their discharge from the hospital. The hospitals which implemented Ten recommendations for successful breast feeding were designed as Baby Friendly Hospitals. By strengthening of this as initiative in the community, a better child survival can be achieved. A revised and expanded version of baby friendly hospital initiative was implemented by WHO and UNICEF in the year 2009. This study is carried out to estimate the prevalence of early initiation of breast feeding, the reasons for its delay in hospitals in and around Chennai. The age distribution among the study population was ranged between 18 to 40 years. The mean age was 24.6

years. Out of 450 mothers 84.2% of mothers were between 21 – 30 years, 11.1% of mothers were less than 20 years and 4.7% of mothers were more than 30 years. This study shows that there is a significant association between mode of delivery and initiation of breast feeding. The prevalence of early initiation of breast feeding among normal deliveries and caesarean deliveries was 71.3% and 41.5% respectively. This study was supported by the study done by Ashmika Motee et al (2013) which reveals that 42.6% of normally delivered mothers and 23.9% of caesarean delivered mothers had initiated breast feeding within one hour. For caesarean delivered mothers, management of pain along with support of family members and health care providers, helps in early initiation of breast feeding.

Keywords: Prenatal complications, Breast feeding, Complications.

Introduction:

The Baby friendly hospital initiative was launched in the year 1991 -1992, by World Health Organization and UNICEF, in around 156 countries throughout the world with a goal to ensure initiation of breast feeding in all infant before their discharge from the hospital.⁽¹⁾ The hospitals which implemented Ten recommendations for successful breast feeding were designed as Baby Friendly Hospitals.⁽²⁾ By strengthening of this as initiative in the community, a better child survival can be achieved. A revised and expanded version of baby friendly hospital initiative was implemented by WHO and UNICEF in the year 2009.⁽³⁾

The prevalence rates of early initiation of breast feeding are extremely low in Eastern Europe & Central Asian countries with 17% and Asia -Pacific with 33%. The highest prevalence being seen in Latin America, The Caribbean, East & North Africa which is recorded about 50%.

In South Asian countries like India, Pakistan and Bangladesh only 24-26% of the babies are breast fed within 1 hour while the corresponding rate of Sri Lanka is 75%. The result of which is high neonatal mortality rates in India, Pakistan & Bangladesh with 40 – 50 per 1000 live births compared to a low neonatal mortality rate in Sri Lanka with 11 per 1000 live births.⁽⁴⁾

The overall prevalence of early initiation of breast feeding in India is 40.5 % according to District Level Health Survey- III data (2008) ⁽⁵⁾ where as it is 24.5% according to National Family Health Survey- III data (2005). In states like Bihar and Uttar Pradesh, the prevalence rates are very low as 3.7 % and 7.3%. Also in states like Jharkhand, Punjab, Rajasthan, Madhya Pradesh, Haryana, Delhi, West

Bengal the prevalence rates are less than 24.5 %. The highest prevalence rate is found in the state Nagaland with 66.4%. The states like Meghalaya, Mizoram, Tamil Nadu, Manipur, Goa, Orissa shows the prevalence rates above the national level of 24.5%.^(6, 7)

A study conducted by Anaiappan J (2010) in Chennai city, the prevalence rate of the children breast fed within 1 hour was 54.5%.⁽⁸⁾ As per another study conducted by Raj RJ (2014) in Tiruvallur district, the prevalence rate was 89%.⁽⁹⁾

Many cultural beliefs and traditional factors affect breast feeding. Initiation of breastfeeding is delayed by the belief that mother's milk is 'not ready' till two-to-three days of postpartum⁽¹²⁾ Colostrum is considered as harmful in many cultures and is discarded. In few other culture, Ill health of mother is considered to be transmitted to the child.⁽¹⁰⁾ Pre-lacteal feeds like sugar water, honey, cow/ buffalo milk, castor oil are some of the cultural feeds introduced even before initiation of breastfeeding.⁽¹¹⁾

According to World Breastfeeding Trends Initiative report, out of every year among 26million newborn, only 8 million babies in India were breastfed within an hour of birth. India ranks 31st, out of the 51 countries surveyed for early initiation of breast feeding.⁽¹²⁾

AIMS: This study is carried out to estimate the prevalence of early initiation of breast feeding, the reasons for its delay in hospitals in and around Chennai.

Objectives:

To estimate the prevalence of early initiation of breast feeding among delivered mothers.

Methodology:

Study design:

This study is a hospital based cross-sectional study. The prevalence of early initiation of breast feeding and probable reasons for its delay was recorded from the mothers who were admitted for delivery in the hospitals in and around Chennai.

Study population:

The study population identified was any mothers who had delivered the babies (normal as well as cesarean section) in the selected government hospitals, within 48 hours.

Study area:

This study was done in hospitals in and around Chennai. Hence the catchment area included both urban and rural population from northern districts of Tamil Nadu like Kanchipuram, Tiruvallur and Chennai. Official Permission was granted for carrying out the study in Primary Health Centres, District Head Quarters Hospital Tiruvallur District and Institute of Obstetrics & Gynaecology, Chennai. The district is subdivided into 13 Blocks. There are 13 Block Level PHCs, 6 Upgraded PHCs [CHCs], 24 Additional PHCs, 3 Urban PHCs, 8 Taluk& Non-taluk hospitals and 1 District Head Quarters Hospital which caters to all the health care needs of the people of this District. Recently 6 more new PHCs were also added to the existing list. All these institutions are based on the primary and secondary health care level. The nearest Tertiary care hospitals are located in Chennai which is bordering the Tiruvallur district [attached to the Madras Medical College, Stanley Medical College and Kilpauk Medical College].

Study period:

The study was carried out from July 2013 till June 2014.

Inclusion criteria:

1. All normally delivered post natal mothers with live babies who were willing to take part in the study.
2. All caesarean delivered mothers who were willing to take part in the study.
3. All post natal mothers who initiated breastfeeding at the time of data collection.

Exclusion criteria:

1. Any serious illness in the child like birth injuries, severe jaundice and congenital anomalies.
2. Twin deliveries.
3. The mothers under influence of sedation and post partum psychosis.

Sample size:

According to NFHS – 3 data, the prevalence of early initiation of breast feeding in Tamil Nadu was found to be 58.8% ⁽¹⁶⁾. Taking this prevalence rate as the standard value for Tamil Nadu, the sample size was calculated using the formula:

$$N = \frac{Z^2 \times p \times q}{L^2}$$

Where,

Z = 1.96 at 96% confidence limit at 95% confidence limit.

P = Prevalence of disease / event.

Q = 100 - P

L = allowable error (conventionally allowed up to 20% of prevalence).

Substituting it in the formula,

$$N = \frac{1.96 \times 1.96 \times 58.8 \times 41.2}{4.7 \times 4.7}$$

$$N = 421$$

$$P = 58.8, q = 41.2, D = 4.7, Z = 1.96$$

The calculated sample size of 421 was increased to make a round figure as 450 samples.

Results:

The study estimated the prevalence of early initiation of breast feeding among 450 mothers admitted for delivery in the hospital. The results of the study were given in the following tables.

Table 1. Demographic variables of mothers

S.No	Demographic characteristics	Frequency	Percentage
1.	Age distribution of the mother (in years)		
	< 20	50	11.1
	21 – 30	379	84.2
	31 – 40	21	4.7
2.	Sex distribution of the child		
	Male	240	53.3
	Female	210	46.7
3.	Distribution of Place of residence		
	Rural	219	48.7
	Urban	231	51.3
4.	Distribution of Religion		
	Hindu	395	87.8
	Christian	33	7.3
	Muslim	22	4.9

Table: 1 Distribution of demographic characteristics of mothers. The age distribution among the study population was ranged between 18 to 40 years. The mean age was 24.6 years. Out of 450 mothers 84.2% of mothers were between 21 – 30 years, 11.1% of mothers were less than 20 years and 4.7% of mothers were more than 30 years.

Among 450 mothers, 240 (53.3%) mothers delivered male baby and 210 (46.7%) mothers delivered female baby and 219 (48.7%) belongs to rural area and 231 (51.3%) belongs to urban area. The religion of study population included 395 (87.7%) Hindus, 33(7.3%) Christians and 22 (4.9%) Muslims.

Table 2. Problems and Risk factors during the antenatal period

	Characteristics	No	%
1.	Antenatal problems		
	Hypothyroidism	22	4.9
	Wheezing	3	0.7
	Congenital heart disease	3	0.7
	Others	5	1.1
	Normal	417	92.7
2.	Risk factors identified during antenatal period		
	Anaemia	50	11.1
	PIH	22	4.9
	Gestational diabetes	15	3.3
	PIH & gestational diabetes	4	0.9
	Anaemia& gestational diabetes	2	0.4
	Placenta previa	3	0.7
	Anaemia& PIH	2	0.4

	Anaemia& Placenta previa	1	0.2
	Normal	351	78.0

About 33 (7.4%)mothers had antenatal problems (Table-3) like hypothyroidism (4.9%), wheezing and congenital heart disease (0.7%) each, other problems including infectious diseases like chickenpox, tuberculosis, urinary tract infections, white discharge and jaundice (1.1%) . Antenatal registration was 100%.

Regarding risk factors identified during antenatal period, 11.1 %, 4.9%, 3.3% and 0.7% had anaemia, PIH, gestational diabetes and placenta praevia respectively. 0.9% had both PIH&GD, 0.4% had both anaemia & PIH, 0.4% had both anaemia and GD, 0.2 % had both anaemia and placenta praevia. The rest of the mothers (78%) showed no risk factors during antenatal period.

Table 3. Indication for caessarean section

1.	Indication for caesarean section [n = 234]	No	%
	Cephalo pelvic disproportion	38	8.4
	Cephalo pelvic disproportion with foetal distress	6	1.3
	Foetal distress with meconium stain	22	4.9
	Gestational Diabetes Milletus	4	0.9
	Post Expected date of delivery	7	1.6
	Malpresentation	13	2.9
	Oligohydrominos	18	4.0

	Previous LSCS	88	19.6
	Rupture of membrane with Cephalopelvic disproportion/ Foetal distress	21	4.7
	Pregnancy Induced Hypertension	8	1.8
	Others	6	1.3
	None	219	48.7

Out of 234 caesarean section deliveries (Table-6) the indications were previous LSCS (19.6%), cephalo-pelvic disproportion (8.4%), foetal distress with meconium stained liquor (4.9%), rupture of membrane with CPD (4.7%), oligohydrominos (4%), malpresentation (2.9%), Pregnancy induced hypertension (1.8%), post dated delivery (1.6%), CPD with foetal distress (1.3%) and gestational diabetes (0.9%).

Table 4. Postnatal problems

1.	Postnatal problems	No	%
	Pain	191	42.4
	Breast symptoms	16	3.6
	None	243	54

Postnatal problems (Table-7) included pain in suture site (42.4%) and breast symptoms like sore nipple, cracked nipple and inverted nipple (3.6%). All mothers participated in the study were conscious during delivery till initiation of breast feeding.

Table 5. Reasons for delay in early initiation of breast feeding

1	Reasons for delay	No	%
	Pain	73	16.2
	Ignorance	76	16.9
	Respiratory distress	24	5.3
	Low Birth Weight of babies	15	3.3
	Baby suspected for DM	10	2.2
	Suturing Delay	18	4
	Rooming in delay	12	2.7
	No demand by baby	14	3.1
	Others	4	0.9

Out of 450 mothers, 246 mothers delayed initiation of breast feeding (Table-10) by one hour after delivery, due to ignorance(16.9%) pain in the mother(16.2%), respiratory distress(5.3%), low birth weight(3.3%), suspected diabetes mellitus(2.2%) and no demand for fed(3.1%) in the baby. The general reasons for delay included suturing delay (4%) and rooming in delay (2.7%). Other reasons (0.9%) were blood transfusion, fever and rigor in the mothers, renal and eye problems in the babies.

Table 6. shows the prevalence of the disease/ event in this study

S.No	Characteristic	No	(%)	95% Confidence Interval
1.	Early initiation of breast feeding	251	55.8	51.1 - 60.3
2.	Delayed initiation of breast feeding	199	44.2	

In this study the prevalence of early initiation of breast feeding (Table-11) was 55.8% with the range between 51.1 - 60.3 (95% Confidence Interval).

Discussion:

The risk factors during antenatal period of the mother had a significant effect on early initiation of breast feeding. Among 99 mothers with risk factors present during pregnancy, 63 (63.6%) of mothers initiated breast feeding after one hour. The association was found statistically significant with odds ratio of 2.8 (1.7 – 4.4) ($\chi^2=19.4$, $p=0.01$).

Out of 300 mothers delivered in primary and secondary health centre and out of 150 mothers delivered in tertiary health centre, 197 mothers (43.7%) and 54 mothers (12%) initiated breast feeding within one hour of delivery respectively. 103 mothers (34.3%) in primary & secondary health centres and 96 mothers (64%) in tertiary health centres initiated breast feeding after one hour of delivery. There is a significant association between place of delivery and early initiation of breast feeding with an odds ratio of 3.4 (2.3 – 5.1). The association was identified as statistically significant ($\chi^2 = 36.0$, $p = 0.01$).

This study shows that there is a significant association between mode of delivery and initiation of breast feeding. The prevalence of early initiation of breast feeding among normal deliveries and caesarean deliveries was 71.3% and 41.5% respectively. This study was supported by the study done by AshmikaMotee et al (2013) which reveals that 42.6% of normally delivered mothers and 23.9% of caesarean delivered mothers had initiated breast feeding within one hour⁽¹³⁾. For caesarean delivered

mothers, management of pain along with support of family members and health care providers, helps in early initiation of breast feeding.

This study was conducted to estimate the prevalence of early initiation of breast feeding among postnatal mothers in selected health centres. In this study the prevalence rate is 55.8%, which is more or less similar to the state prevalence of 58.8% (NFHS - 3) and the study done by Anaiappan (2010) showing a prevalence rate of 54.4% .⁽¹⁴⁾ Awareness among mothers and the family members is important to achieve higher rate of prevalence in early initiation of breast feeding.

Prelacteal feeds had no influence on early initiation of breast feeding. 56.3% of mothers who practiced prelacteal feeds didn't initiated breast feeding within one hour of delivery. It is statistically not significant ($\chi^2 = 0.01$, $p = 0.9$). The study done by Yadavannavar MC, Shailaja SP showed that, 91.6% of mothers gave prelacteal feeds to their children.⁽¹⁵⁾ In India and other developing countries prelacteal feeds (feeds given neonates before the initiation of lactation) are very common and are an important factor in delaying the initiation of breast feeding.⁽¹⁶⁾

After initiation of breast feeding there was a delay in breast milk secretion for about 26.5% of mothers. In which 15.2% of mothers had general medical problems. It is statistically not significant ($\chi^2 = 0.4$, $p = 0.5$). A lactation consultant can be recruited in every hospital to overcome any difficult faced by mother – child dyad in initiation of breast feeding.

There is an association between birth order of the child and breast milk secretion. 83.4% of mothers with first child and 91.5% of mothers with more than one child had no delay in secretion of breast milk. It is statistically significant ($\chi^2 = 6.6$, $p = 0.01$) with an odds ratio of 2.1 (1.2- 3.8).

Conclusion:

In this study prevalence and factors influencing the early initiation of breast feeding was found out. Factors like age of mother, place of residence, risk factors during antenatal period, place of delivery, mode of delivery, birth order of the child and complications in the neonate had a significant effect on early initiation of breast feeding. Whereas sex of the child, educational status of mother, maternal medical problems, birth weight of the child and time of delivery had no influence on early initiation of breast feeding. Some of the reasons for delay including problems faced during nursing like pain in

suture site, ignorance of the mother and rooming-in delay can be overcome by providing pain management services, health educating mothers and measures like initiation of breast feeding in the labour or recovery room and early rooming-in of mother and child respectively.

Summary

This study was conducted to estimate the prevalence of early initiation of breast feeding and reasons for delay among postnatal mothers in selected health centres in and around Chennai.

In this study the prevalence rate of early initiation of breast feeding was 55.8%. The reasons for delay in early initiation of breast feeding were ignorance of the mother (16.9%), Respiratory distress (5.3%) & Low Birth Weight of babies(3.3%), Baby suspected for DM(2.2%), Suturing Delay(4%), Rooming in delay(2.7%) and No demand by the baby(3.1%).

There was a significant association between early initiation of breast feeding and the selected variables like maternal age, maternal risk factors, mode of delivery, birth order of the child and neonatal complications.

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