

## Original Research Article

# Factors influencing early initiation of breast feeding among mothers in North Coastal Andhra Pradesh, India

Kiran Pamarthi<sup>1\*</sup>, Jugal Kishore Palli<sup>2</sup>

<sup>1</sup>Department of Community Medicine, NRI Institute of Medical Sciences, Visakhapatnam, Andhra Pradesh, India

<sup>2</sup>MBBS Intern, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India

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### \*Correspondence:

Dr. Kiran Pamarthi,

E-mail: [drskiran.pamarthi@gmail.com](mailto:drskiran.pamarthi@gmail.com)

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## ABSTRACT

**Background:** The benefits of breastfeeding for the health and wellbeing of the mother and babies are well documented. A recent trial has shown that early initiation of breastfeeding could reduce neonatal mortality, which would contribute to the achievement of the Millennium development goals. The positive effects of breastfeeding on the new-born's health can be attributed to the components of breast milk, as well as the contact between mother and baby.

**Methods:** This is a hospital based, cross sectional study conducted in the Department of Pediatrics and Department of Obstetrics and Gynaecology, at a tertiary care hospital in North Coastal Andhra Pradesh. Study period was one year between March 2018 to February 2019. 310 healthy term new-born babies of singleton pregnancy were included.

**Results:** The prevalence of initiation of breast breastfeeding within one hour in this study is 48.7% (151 neonates). Hindu religion, literacy, urban residence, vaginal delivery, male child, breast feeding advice during antenatal period, birth spacing <2 years, not giving prelacteal feeds, absence of breast-feeding problems and maternal illness were found to have a significant association with initiation of breast feeding within 1 hour after delivery (p value <0.05).

**Conclusions:** Innovative strategies like provision of breastfeeding counsellors in the hospital setup; constant counselling to mothers and their immediate relatives who take care of baby and mothers can increase early initiation of breast feeding.

**Keywords:** Breast feeding, Early initiation, New-born

## INTRODUCTION

Breastfeeding is the most effective method of promoting the health of infants. It's God's gift to human beings. Breastfeeding is a most valuable natural resource and is of utmost importance to prevent disease and to promote child survival. Yet, it is not been practiced universally.

The benefits of breastfeeding for the health and wellbeing of the mother and babies are well documented. WHO recommends early (i.e., within one hour of giving birth) initiation of breastfeeding. A recent trial has shown that

early initiation of breastfeeding could reduce neonatal mortality, which would contribute to the achievement of the millennium development goals.<sup>1</sup>

A recent meta-analysis reported that the initiation of breastfeeding within 24 hours of birth was significantly associated with reduction in "all-cause neonatal mortality", "low birth weight related neonatal mortality" and "infection related neonatal mortality" among all live births.<sup>2</sup>

About one fourth to one half of all infant deaths in developing countries occur in the first week of life.

Initiation of breast feeding within the first hour of life followed by exclusive breast feeding improves the health and survival status of newborns.<sup>3</sup>

According to NFHS-4 the initiation of breast feeding within one hour of birth is only 37.1%.<sup>4</sup> The positive effects of breastfeeding on the newborn's health can be attributed to the components of breast milk, as well as the contact between mother and baby. The colostrum, milk on its first days, contains the epidermal growth factor, which accelerates the development of the intestinal mucus, as well as the immunological bioactive factors that provide immunological protection to the newborns, preventing intestinal colonization by pathogenic microorganisms.<sup>5</sup>

Therefore, the present study is aimed at evaluating breastfeeding patterns of hospital born healthy term infants with focus on factors influencing early initiation of breast feeding in term healthy newborns and prevalence of breastfeeding within first hour of life.

## METHODS

This is a hospital based, cross sectional study conducted in the Department of Pediatrics and Department of Obstetrics and Gynaecology, at King George Hospital in Visakhapatnam, a city in North Coastal Andhra Pradesh. All the healthy term newborn babies of singleton pregnancy delivered in the hospital who gave informed consent were included during study period of one year between March 2018 to February 2019. Preterm, post term babies, multiple pregnancies, newborn with congenital malformations, and those admitted in NICU were excluded. Based on the prevalence of initiation of breast feeding within one hour from a previous study done by Karol et al as 73.8%, at 5% absolute precision, 80% power, 5% alpha error and 95% confidence limits, a sample size of 310 was obtained.<sup>6</sup>

Ethics committee of institution has reviewed the protocol and approved the study. Informed consent was taken

from all patients in the study. Data is collected by interviewing with mothers using semi structured questionnaire. Background questions covered are demographic, social and economic status. The results were categorized into two groups of those who have initiated within one hour and those who haven't initiated. Timely initiation of breastfeeding by the mother is defined as having initiated breast feeding if, within the first hour of birth, either she puts the baby to the breast, or the baby is given any of the mother's breast milk.

## Socio-demographic variables

Maternal age, religion, residence, parity, inter delivery interval, mode of delivery, high risk pregnancy, sex of the child, socio-economic status, maternal education, maternal occupation and pre lacteal feeds.

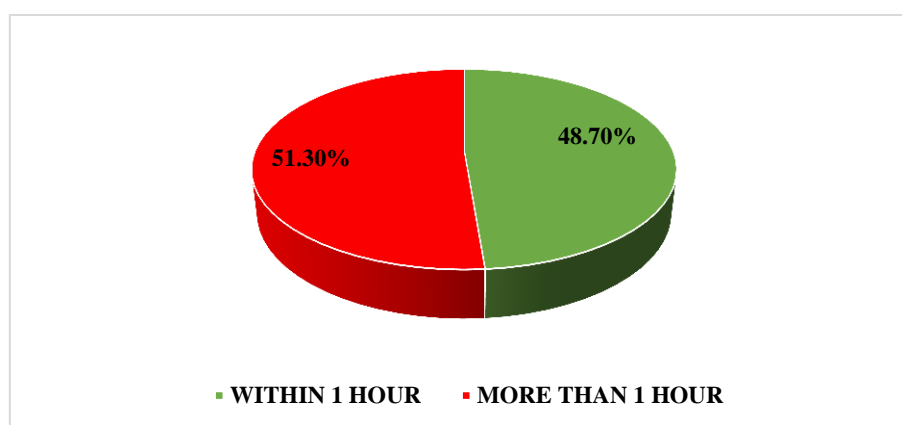
## Variables related to antenatal care (ANC) and postnatal care (PNC)

ANC visited or not, received advice regarding breast feeding during antenatal period, initiated breast feeding within one hour or not after birth, previous duration of exclusive breast feeding in multiparous women, maternal illness and feeding problems.

The rate of early initiation of breastfeeding and distribution by different independent variables was reported as percentage. Chi square tests were performed to evaluate the association of independent variables with the early initiation of breastfeeding. P value less than 0.05 was considered as statistically significant. All the analysis was carried out using Statistical package for social sciences (SPSS) v21.0.

## RESULTS

A total of 310 neonates were studied during the study period of 12 months. The prevalence of initiation of breast breastfeeding within one hour in this study is 48.7% (151 neonates) (Figure 1).



**Figure 1: Proportion of mothers by initiation of breast feeding within 1 hour after delivery.**

**Table 1: Association of factors in relation to early initiation of breast feeding.**

Factors		Breast feeding initiated <1 hr N (%)	Breast feeding initiated >1 hr N (%)	Chi square value	P-value
<b>Maternal age</b>	<24 years	86 (52.4)	78 (47.6)	1.939	0.164
	>24 years	65 (44.5)	81 (55.5)		
<b>Religion</b>	Christian	26 (24.3)	81 (75.7)	42.260	0.001
	Hindu	91 (65.9)	47 (34.1)		
	Muslim	34 (52.3)	31 (47.7)		
<b>Education</b>	Illiterate	36 (37.5)	60 (62.5)	6.994	0.008
	Literate	115 (53.7)	99 (46.3)		
<b>Residence</b>	Rural	40 (36.0)	71 (64.0)	11.117	0.001
	Urban	111 (55.8)	88 (44.2)		
<b>Occupation</b>	Housewife	136 (48.2)	146 (51.8)	0.291	0.589
	Working	15 (53.6)	13 (46.4)		
<b>Parity</b>	Multi	106 (50.2)	105 (49.8)	0.617	0.432
	Primi	45 (45.5)	54 (54.5)		
<b>Mode of delivery</b>	LSCS	37 (38.6)	59 (61.4)	6.505	0.01
	NVD	116 (54.3)	98 (45.7)		
<b>Sex of child</b>	Female	64 (41.0)	92 (59.0)	7.422	0.006
	Male	87 (56.5)	67 (43.5)		
<b>Breast feeding advice</b>	Given	95 (53.7)	82 (46.3)	4.067	0.044
	Not given	56 (42.1)	77 (57.9)		
<b>Birth spacing</b>	<2 years	74 (58.3)	53 (41.7)	7.867	0.005
	>2 years	77 (42.1)	106 (57.9)		
<b>Prelacteal feeds</b>	Given	24 (27.9)	62 (72.1)	20.616	0.001
	Not given	127 (56.7)	97 (43.3)		
<b>Breast feeding in previous child</b>	No	67 (47.9)	73 (52.1)	0.074	0.785
	Yes	84 (49.4)	86 (50.6)		
<b>Breast feeding problems</b>	No	122 (57.8)	89 (42.2)	21.949	0.001
	Yes	29 (29.3)	70 (70.7)		
<b>Maternal illness</b>	No	133 (55.6)	106 (44.4)	20.111	0.001
	Yes	18 (25.4)	53 (74.6)		

When socio demographic variables and other variables related to antenatal and postnatal care were analysed to find out association with early initiation of breast feeding, hindu religion, literacy, urban residence, vaginal delivery, male child, breast feeding advice during antenatal period, birth spacing <2 years, not giving prelacteal feeds, absence of breast-feeding problems and maternal illness were found to have a significant association with initiation of breast feeding within 1 hour after delivery (p value <0.05) (Table 1).

## DISCUSSION

### *Prevalence of initiation of breastfeeding in <1 hour of birth*

Out of 310 newborns examined in the present study, 151 newborns were initiated within one hour [48.7%], which is more when compared with 38.6% in Sharma et al study, 32% in Nepal et al study, 36.4% in Patel et al study and 22% in Meshram et al study.<sup>7-10</sup> Also, our study

findings are more when compared to NFHS-4 findings, where the initiation of breast feeding within one hour of birth is 37.1%.<sup>4</sup>

Prevalence of initiation of breast feeding within one hour of birth in our study (48.7%) can be considered in the fair group according to the classification of WHO [poor (0-29%), fair (30-49%), good (50-89%), and very good (90-100%)].<sup>11</sup>

### *Maternal age*

Among mothers with age <24 years, 52.4% started breastfeeding within 1 hour of birth which was comparable with 54.9% in Vieria et al study, 53.1% in Khanal et al study, but lesser than 86.6% in Dashti et al study.<sup>2,12,13</sup> Among mothers with age >24 years, 44.5% started breastfeeding within 1 hour of birth which was comparable with 45.2% in Vieria et al study but lesser than 82.7% in Dashti et al study.<sup>12,13</sup>

### **Maternal religion**

Among Hindu mothers, 65.9% started breastfeeding within 1 hour of birth which was comparable to 67.3% in Adhikari et al study but lesser than 90.6% in Mamtarani et al study.<sup>14,15</sup> Prevalence of initiation of breast feeding within 1 hour after delivery is more among Hindus (65.9%) as compared to Christians (24.3%) and Muslims (52.3%). This can be attributed to different religious practices prevailing in different religions but in the present study there is significant difference among different religions.

### **Maternal education**

Among literate mothers, 53.7% initiated breastfeeding within one hour which is comparable with 51.5% in Mekonen et al study.<sup>16</sup> Among illiterate mothers, 37.5% initiated breastfeeding within one hour which is less when compared with 57.9% in Adhikari et al study.<sup>14</sup> There is a significant difference between literates and illiterates in the present study.

### **Residence**

Among mothers residing in rural area, 36% initiated breastfeeding within one hour which was less when compared to 41.8% in Khanal et al study and 47.3% in Setegn et al study and more when compared to 17.1% in Haghighi et al study, 25.1% in Mekonen et al study.<sup>2,16-18</sup> Among mothers residing in urban areas, 55.8% initiated breastfeeding within one hour which was comparable to 54.7% in Mekonen et al study.<sup>16</sup> It was more than 43.9% in Khanal et al study and less when compared to 73.5% in Setegn et al study.<sup>2,7</sup> Initiation of breastfeeding within one hour is more in urban mothers like other studies. This can be attributed to the better knowledge of breastfeeding practices among urban mothers. There is a significant difference between rural and urban mothers in the present study.

### **Maternal occupation**

Among working mothers, 53.6% started breastfeeding within 1 hour which was more when compared with 36.3% in Khanal et al study but less than 74.2% in Adhikari et al study and 76.4% in Hailemariam et al study.<sup>2,14,19</sup> Among house wife mothers, 48.2% started breastfeeding within 1 hour which was comparable to 46.2% in Khanal et al study but less than 89.3% in Wolde et al study.<sup>19</sup> Differences in initiation among working and non-working mothers may be confounded by the educational status of the mothers.

### **Parity**

Among Primi mothers, 45.5% started breastfeeding within 1 hour of birth which was comparable to 44.6% in Khanal et al study but lesser than 56.8% in Setegn et al study.<sup>2,17</sup> Among multipara mothers, 50.2% started

breastfeeding within 1 hour of birth which was more when compared with 37.5% in Khanal et al study, 41.2% in Athavale et al study and comparable to 50.3% in Setegn et al study.<sup>2,17,20</sup> The present study showed that there is no significant difference between Primi and Multipara mothers in initiation of breastfeeding like in other studies.

### **Mode of delivery**

Among mothers delivered by NVD, 54.3% mothers started breastfeeding within 1 hour which was greater than 37.3% in Taghreed et al study and 45.7% in Khanal et al study but less than 89.9% in Seid et al study.<sup>2,21,22</sup> Among mothers delivered by LSCS, 38.6% started breastfeeding within 1 hour which was more when compared to 23.4% in Viera et al study and 24.8% in Khanal et al study but less than 63.3% in Abdulbasit et al study.<sup>2,12,22</sup> There was a significant difference between both groups in our study. Mothers who underwent LSCS who did not initiate breastfeeding within one hour, which can be attributed to the postoperative pain and discomfort of the mother.

Pain after surgery, significant discomfort in holding and positioning the baby, delayed skin-to-skin contact and delay in the production of breastmilk, limited mobility, and needing extra help for BF could account for this delay. Women who undergo cesarean delivery may need additional help to attain comfortable and correct positioning of their infant for BF. In recent years, cesarean section rates are above the expected levels around the world. Developing policies to reduce cesarean rates is essential, but it should also be noted that providing special lactation consultancy and emphasizing skin-to-skin contact in patients where cesarean is mandatory is necessary.

### **Sex distribution**

Out of mothers who had male newborns, 56.5% initiated breast feeding within one hour which was higher than 36.26% in Athavale et al study.<sup>20</sup> Out of mothers who had female newborns, 41% initiated within one hour which was comparable to 42.85% in et al study.<sup>20</sup> The prevalence of initiation was high among male newborns compared to female newborns which is similar to study by Adhikari et al and Gilany et al.<sup>14,23</sup> The difference was also found to be statistically significant in our study.

### **Breast feeding advice**

Among mothers who were given breastfeeding advise, 53.7% started breastfeeding within 1 hour which was comparable to 50.7% in Vieira et al study and 56.8% in Setegn et al study but less than 85.8% in Tsedeke Hailemariam et al study.<sup>12,17,19</sup> Among mothers who were not given breastfeeding advice, 42.1% started breastfeeding within one hour which was comparable to 45.8% in Vieira et al study but less than 50% in Setegn et

al study and significantly less than 94.2% in Hassan et al study.<sup>12,17,24</sup> This shows that antenatal advice about breastfeeding has a significant influence on the initiation of breastfeeding and thus it should be encouraged.

In a study performed in Israel to explore the effect of BF education given in the perinatal period, it was found that both the initiation and the duration rates of BF were increased.<sup>25</sup> Therefore, antepartum education should be considered by health staff to increase the self-confidence of mothers.

### ***Prelacteal feeds***

Among babies who were given pre lacteal feeds, 27.9% were started on breastfeeding within 1 hour which was comparable to 21.33% in Athavale et al study, 26% in Khanal et al study but less than 60% in Hailemariam et al study.<sup>2,19,20</sup> Among babies who were not given pre-lacteals, 56.7% were started on breastfeeding within 1 hour which was comparable to 50.1% in Khanal et al study and 55.7% in Athavale et al study.<sup>2,20</sup> There is a significant difference between two groups showing that pre-lacteal feeds like honey, coconut water etc. are hindering the early initiation of breastfeeding thereby depriving the babies of colostrum which is immunologically potent.

### ***Breast feeding in previous child***

Among mothers who had given breastfeeding in the previous child, 49.4% started breastfeeding within 1 hour which was less when compared to 71% in Mahnaz et al study but comparable to 48.9% in Tatiana et al study.<sup>12,18</sup> Among mothers who had not given breastfeeding in the previous child, 47.9% started breastfeeding within 1 hour which was comparable to 45.3% in Tatiana et al study and less than 58.2 % in Mahnaz et al study.<sup>12,18</sup>

### ***Breast feeding problems***

Among mothers who had breastfeeding problems, 29.3% started breastfeeding within 1 hour which was less than 63.7% in Mahnaz et al study and more than 3.6% in Gilany et al study.<sup>18,23</sup> Among mothers who had no breastfeeding problems, 57.8% started breastfeeding within 1 hour which was comparable to 63.1% in Mahnaz et al study and more than 12.7% in Gilany et al study.<sup>18,23</sup> Flat/inverted nipples, mastitis, breast engorgement and perceived breast milk insufficiency are the problems which caused delayed breast feeding in present study. The difference was also found to be statistically significant for breast feeding problems in our study.

### ***Maternal illness***

Among mothers who had illness, 25.4% started breastfeeding within 1 hour which was less than 45.5% in Mahnaz et al study.<sup>18</sup> Among mothers who had no illness, 55.6% started breastfeeding within 1 hour which was less

than 63.9% in Mahnaz et al study.<sup>18</sup> Ante partum hemorrhage, postpartum hemorrhage and Eclampsia were illnesses where mother needed ICU treatment which hindered initiation of breastfeeding in the first hour. The difference was also found to be statistically significant for maternal illness in our study.

There are many factors which affect early initiation of breastfeeding. A single parameter cannot be attributed for initiation. Health education, socioeconomic development and antenatal breastfeeding advice are all important for early initiation of breastfeeding. This study provides empirical support for the links that exist between early initiation of breastfeeding and several factors.

### ***Recommendations***

- Innovative strategies like provision of breastfeeding counsellors in the hospital setup, constant counselling to mothers and their immediate relatives who take care of baby and mothers; by doctors and nurses are essential for increasing early breastfeeding.
- As physicians and other medical personnel play an important role in the initiation of early breast feeding and prolongation of exclusive breastfeeding, their skill about breast feeding should be upgraded by giving periodic trainings and conducting workshops.
- All pregnant ladies should get antenatal breastfeeding counseling in the ANC period itself, similarly they should be counseled and supported in each step regarding breast feeding.
- There is a need to provide opportunity and encouraging mother for breastfeeding in delivery room itself to increase initiation rates.
- Breast problems like flat nipple or inverted nipple should be identified in Antenatal period and appropriate measures should be taken accordingly so that they do not hinder early initiation.

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