

Hospital Lactation Services: An Indian Experience

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Abstract

Objectives: Early initiation and exclusive breastfeeding has both short and long-term health benefits for maternal and child health universally. The national studies done in India have consistently demonstrated lower rates of breastfeeding initiation and exclusive breastfeeding in urban areas. This study aimed to examine the first hour breastfeeding rates and the prevalence of exclusive breastfeeding among mothers who delivered in 3 centres of an urban tertiary maternity hospital staffed by qualified lactation consultants in Bangalore, Karnataka. These results were compared to the rates reported in the state of Karnataka by the National Family Health Survey 4 (NFHS 4).

Methods: The first hour breastfeeding rates were obtained from hospital records and the exclusive breastfeeding rates were obtained from telephonic survey. The exclusively breastfed babies were compared with the non-exclusive breastfed group with regards to sex, mode of delivery, birth order and neonatal unit admission using chi-square test.

Results: There were 2924 babies. Of this 93.6% were breastfed in the first hour of life. Details of 2386 were obtained telephonically of whom 71.5% were exclusively breastfed for 6 months. The exclusive breastfeeding rates were significantly less in the babies born by Cesarean birth and in those who were admitted in the neonatal unit

Conclusion: The breastfeeding initiation rate was 37.5% more and the exclusive breastfeeding rates were 15% more than that reported in National Family Health Survey 4. We attribute the high rates of breastfeeding initiation and breastfeeding rates to the availability of trained lactation consultants in the hospital.

Keywords: Breastfeeding; Lactation; Consultant; Counseling; Counselors; Duration; Initiation

- There are many studies from the Indian subcontinent highlighting the role of peer counsellors in breastfeeding, but there are no studies regarding the rates of breastfeeding initiation and of exclusive breastfeeding from hospitals with a dedicated lactation support programme. This study was designed to examine these rates and impact of lactation consultants and counselors as compared to the rates reported in the National Survey.
- Of the 2924 eligible babies who were born consecutively 93.6% were breastfed in the first hour of life.
- Of the 2386 babies whose feeding details could be obtained telephonically 71.5% were breastfed exclusively for six months.
- The rates of breastfeeding initiation and exclusive breastfeeding rates reported in this study are higher than those reported in the State of Karnataka. This is the first study from India which reports these rates from a hospital with a dedicated lactation support programme.

Introduction

Early and exclusive breast-feeding from birth through 6 months of age has long-term health and emotional benefits for both maternal and child health. Early initiation of breastfeeding, specifically within 1h of birth (also known as the golden hour of feeding) has been shown to prevent newborn infections, reduce newborn death due to sepsis, pneumonia, diarrhoea and hypothermia, and facilitates sustained breastfeeding [1]. The benefits of breastfeeding have been found to be applicable for high-income, middle-income, and low-income countries [2].

In spite of the known advantages the rates of golden hour feeding, as per the National Family Health Survey 4 (NFHS 4) of India, this remains at 41.6% though there has been an average annual rate of increase of 10.3% as compared to the 24.5% in 2006 [3]. The World Health Organization (WHO) global data bank on infant and young child feeding reported the rates of exclusive breastfeeding ranged from 1% to 89% [4]. In India, the NFHS 4 reported the rates of exclusive breastfeeding under 6 months of age as 52.1% in urban area. In Karnataka the breastfeeding rates in urban areas were 12% less than in the rural area [3]. This consistent difference in breastfeeding rates in rural and urban areas is probably because of increased exposure to human milk substitutes which may be perceived as modern viable alternative [5]. Though there is good quality data from India regarding positive role of skilled counsellors in breastfeeding initiation and exclusive breastfeeding, those on the role of lactation consultants is negligible [6].

With this background we wanted to examine the rates of breastfeeding in the first hour of life and the prevalence of exclusive breastfeeding up to 6 months amongst mothers who delivered in 3 centres of an urban tertiary maternity hospital in Bangalore, Karnataka. We intended to compare the above mentioned parameters in our hospital which has dedicated lactation consultants to that reported in the rest of the state.

Materials and Methods

This is a prospective observational study of all inborn babies born in 3 branches of an urban tertiary maternity hospital. The study was approved by the Institutional Ethics Committee. (Project No. IEC/C9791/0205/16009).

The first phase of the study was conducted in the postnatal wards and delivery rooms of 3 branches our hospital from September 2015- February 2016. In our hospital, basic breastfeeding care is provided by the nursing staff. They are supported by qualified lactation specialist in each of the branches. The lactation consultants perform morning lactation rounds to educate and support the breastfeeding mothers.

In addition, before discharge, all new mothers and their partners or grandmothers along with the neonate are encouraged to attend the in-house group lactation counselling session, which is conducted every day between 11.30 am and 12.30 pm. During this session, an audio visual presentation is followed by practical session wherein mothers are encouraged to breastfeed their babies to optimize their breastfeeding techniques. The lactation consultant is also available for consultation during the postnatal follow-up period to remedy breastfeeding issues.

In the second phase of the study, the parents of babies eligible for participation in the study were telephonically contacted and a pre-tested questionnaire were administered on completion of 6 months after delivery.

All consecutive babies born at more than or equal to 34 weeks of gestation were included. Neonates with major congenital anomalies, facial malformations, chromosomal abnormalities, surgical problems and babies with inborn errors of metabolism in whom special formula is indicated were excluded from the study. Baseline information regarding baby's sex, gestational age, birth weight, antenatal doppler results, mode of delivery, indication for Cesarean birth, birth order, details regarding neonatal intensive care unit (NICU) admission were recorded. This data of babies satisfying the inclusion criteria was obtained from the admission registers, case files and the hospital electronic patient record system. Data regarding golden hour feeding was obtained prospectively. During the second phase, the parents of the eligible babies were contacted on completion of 6 months of age telephonically.

Golden hour feeding rates of all consecutive eligible participant neonates was documented. During the second phase of the study, a standardized telephone consent script and a pretested questionnaire were administered by the lactation consultants and nurses. This was to assess if the babies were on exclusive breastfeed, mixed feed or exclusive formula feeds. Informed consent was obtained from all the parents who participated in the survey.

Data collection

The first phase of the study was an anonymised survey regarding golden hour breastfeeding rates. In the second phase, interviewers were specially trained to conduct the telephone interviews to minimize any interviewer bias. The interviewers read the questionnaire verbatim in English or the language familiar to the parent (Kannada, Telugu, Hindi, Tamil or Malayalam). The interviewers identified themselves and requested the parent's participation in the project. The participants were informed that the participation was voluntary, anonymous, and confidential and the data thus obtained will be anonymized before analysis.

The parent was asked the following 3 questions:

1. Did the baby receive only breast feed for the first six months? - Yes/No

If "Yes", the following reconfirmation question was asked

2. Was the baby given formula feed during hospital stay or during any particularly difficult night during the first six months?

If the answer to the first question was "No", the parent was further asked

3. Was the baby given exclusive formula or mixed feed during the first six months?

Verbal telephonic consent was obtained from each respondent before administering the questions. None of the participants declined consent. Care was taken not influence or prompt the parent's answers.

Data Analysis

R software was the statistical package used for analysis. The data was anonymized before analysis. The patterns of infant feeding in their first 6 months was determined. Infants who were given supplementary and complementary feeds in the first 6 months were grouped into non-exclusive breast fed group. This group was compared with the exclusive breastfed group with regards to sex, mode of delivery, birth order and NICU stay using chi-square test. All tests were two-tailed and statistical significance was set at $p < 0.05$.

Results

There were a total of 3032 babies born during the study period. The total number of babies eligible to participate in the study was 2924. Of this, 1520 were male and 1404 female babies. There were 16 sets of twins. There were 1636 babies (68.6%) born by Cesarean birth. Of the eligible babies, 2736 (93.6%) were breastfed in the first hour of life.

Out of the 2924 babies, details regarding 2386 (81.6%) babies were obtained telephonically. Majority (71.5%) were exclusively breastfed for 6 months, 45 (1.9%) were on exclusive formula feeds and the remaining were on mixed feeds. None of the twins were exclusively breastfed. On comparing the exclusive and nonexclusive breastfed group with regards to sex, mode of delivery, birth order and NICU stay the exclusive breastfeeding rates were significantly less in the babies born by Cesarean birth and in those who were admitted in NICU ($p < 0.05$) (Table 1).

	Exclusive breastfeed N = 1706	Mixed feed or formula feed (%) N = 680	P value
Gender			
Male	880 (51.6)	358 (52.6)	0.63
Female	826 (48.4)	322 (47.4)	
Mode of delivery			
Caesarean birth	1135 (66.5)	487 (71.6)	0.016
Normal delivery	571 (33.5)	193 (28.4)	
NICU stay			
Yes	92 (5.4)	146 (21.5)	0.0015
No	1614 (94.6)	534(78.5)	

Table 1: Comparison of baseline characteristics of the study population.

Discussion

In the present study, 93.86% of mothers initiated breastfeeding in the first hour of delivery. This is much higher than that reported in the NFHS 4. In Karnataka the breastfeeding initiation rate was 56.4% [3]. We attribute the high rates in our study to the presence of dedicated lactation consultants and nurses who have undergone training in lactation counselling. A study by Sinha, *et al.* demonstrated that interventions delivered in the health system setting improved early initiation of breastfeeding rates by 11% [7]. Similar results were noted in a literature review by Patel, *et al.* who examined the role of lactation consultants and counsellors [8].

In our study, 71.5% of mothers reported 6 months of exclusive breastfeeding. This is 15% more than the rates of exclusive breastfeeding in the urban population as reported in NFHS 4 Karnataka [3]. Individual counselling and group counselling in the immediate postpartum period and after hospital discharge are both effective tools in initiating and maintaining exclusivity of breastfeeding [8-10].

Lactation consultants play a significant role in breastfeeding rates, especially in the current setting of millennial with nuclear families and also who prefer advice from healthcare professionals. In our hospital, the lactation consultants perform bedside lactation rounds and are available to address breastfeeding concerns during the postnatal period. Most studies have reiterated that involvement of lactation consultants and lactation counselors during the postpartum period improves breastfeeding rates [8,11].

There was no difference in feeding rates between male and female babies. Breastfeeding rates were lower in babies born by Cesarean birth. There is conflicting evidence regarding the effect of mode of delivery on breastfeeding duration. The results of our study are in concordance with a studies from Canada and USA [12,13]. On the contrary a meta-analysis of world literature showed that once breastfeeding was initiated, mode of delivery had no effect on breastfeeding rates [14].

The breastfeeding rates amongst babies who were admitted to the neonatal intensive care unit was significantly lower. This is in concordance with a large study from Canada wherein neonatal unit admission was negatively associated with breastfeeding [15]. In contrast, a study from USA showed that NICU admission was not associated with early cessation of breastfeeding amongst late preterm infants [16].

Conclusions

This survey was performed with questions framed to eliminate recall bias, but there is a possibility that the responses obtained were socially appropriate. This is a well-recognized limitation of telephone surveys.

Dedicated lactation consultants and counselors can improve the initiation of breastfeeding within one hour of birth and exclusive breastfeeding rates in lactating mothers. This study indicates that improved breastfeeding outcomes can be replicated if hospitals invest in the provision of lactation consultants and counselors.

Author Contributions

R. Kishore Kumar conceptualized, designed the study, critically reviewed the manuscript, approved the final draft and will act as guarantor of the paper. P.C. Nayana Prabha analysed the data, reviewed literature wrote the first draft and final draft. Ruth Patterson, participated in the study design, data collection and approved the final draft.

Conflict of Interest

None.

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Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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