

**Report of All India Study
of
Newborn Care, Infant Feeding Practices and Implementation of
the "Infant Milk Substitutes, Infant Foods and Feeding Bottles
(Regulation of Production, Distribution and Supply) Act, 1992." in
the Hospital Settings, and Infant Feeding Practices in the
Catchment Area of These Hospitals.**

October 2000

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Executive Summary

1. Introduction

The Baby Friendly Hospital Initiative (BFHI) was started in India in 1993. Under this, the hospital with maternity services, have to follow the ten steps to successful breastfeeding. These hospitals are assessed and certified as baby friendly(BF) if they adopt the “Ten Steps” and follow these practices. BFHI is progressing in the country and about 1300 hospitals have been declared as Baby Friendly. There has been, so far no research into the effectiveness of the programme in India. Through this study, commissioned by the UNICEF, we make an attempt to investigate the breastfeeding practices, the status of the “*Infant Milk Substitutes, Infant Foods and Feeding Bottles (Regulation of Production, Supply and Distribution) Act, 1992*”(The IMS Act) and status of newborn care 600 hospitals over in 13 states of India.

2. Objectives of the Study

These are the objectives of this study,

Primary

1. To study

- a) Current practices related to free and low cost distribution of infant milk substitutes to hospitals with maternity services; and the implementation of the IMS Act in health care institutions.
- b) Compare infant feeding practices between baby friendly and non-baby friendly hospitals.

2. To study the infant feeding practices and the availability of Infant Milk Substitutes IMS, feeding bottles and nipples in the catchment area of these hospitals compare between the catchment areas of baby friendly hospitals and others.

Secondary

3. To study the newborn care practices in these 600 hospitals including resuscitation, infection prevention and temperature control.

3. Evaluation Methodology

For the study, the baby friendly (BF) hospitals were selected from the list provided by the UNICEF. The non-BF hospitals were selected from the same city or neighbouring city taking into consideration the size of hospitals and number of deliveries in these hospitals in public and private sector, in 13 major states in India selected for the study. In all, 600 hospitals - 306 BF and 294 non-BF were covered in the study. From the selected hospitals, a variety of respondents were selected keeping the study objectives in mind. The respondents included 600 each of Women in Maternity, Women in Paediatrics, Women in Catchment area, Nurse in Maternity, Nurse in Paediatrics, Doctors, Storekeepers, Chemist near hospital, and Chemist near Catchment area.

Data Collection

Data was collected from the respondents by BPNI using semi-structured questionnaires developed at the National level in Delhi and field tested in Delhi and neighbouring States. The standard WHO and NNF guidelines were used to draft questionnaires.

The type of information collected is

1. The current breastfeeding practices of the institutions with regard to “Ten Steps”
 - a) Initiation of breastfeeding
 - b) percentage of babies given prelacteal feeds by the medical and para-medical staff (tinned milk or animal milk or any other nutrition)
 - c) percentage of babies given tinned formula or other milk at birth or later during the hospital stay.
2. The newborn care practices and availability of resources available to the consumer regarding resuscitation facilities, infection prevention and temperature control.
3. Infant feeding practices in the community.
4. Status of the IMS Act.

4. Key Findings

Breastfeeding practices in the hospitals

In our presentation we have included the responses from the mothers considering it valid representation of practices followed in the hospitals.

- a) Initiation of breastfeeding within one hour, prelacteal feeds and supplemental feeds during hospital stay have shown significant positive change in BF hospitals as compared to non-BF hospitals.
- b) Discussions during antenatal period have been significantly more in women in BFHI hospitals.
- c) On women’s plan to exclusive breastfeeding, no significant difference has been observed among women in the BF or non BF hospitals, except for women coming from rural area.

Training of staff

- a) Only about 30% of the health care staff including doctors and nurses received “any” training in breastfeeding and lactation management during the programme.
- b) There seems to be no difference in the capacity to help women during breastfeeding problems in two types of hospitals.

Effect of Training

- a) Present level of training of doctors has made a significant impact on some breastfeeding practices.

Status of Ten Steps to successful breastfeeding in BF hospitals.

- a) The steps out of “Ten Steps” that require less time and skill have been addressed well than those that require more staff time and skill.

4.2. Compliance with and Implementation of the IMS Act

From the available data over a period of six weeks during which the study was conducted, it is observed that

- a) An infant formula manufacture company supported about 14% of doctors for a conference or workshop etc.
- b) About 60% doctors, 30 % nurses, and only about 25% storekeepers knew existence of the IMS Act.
- c) About 4% chemists received either discounts/free gifts or incentives from manufactures.

4.4. Newborn Care

- a) Seventy five percent doctors and 81.7% nurses said there is a designated area for newborn resuscitation in their hospital.
- b) About 51% of the doctors and 42 % nurses say they take all necessary steps to prevent hypothermia.
- c) 37.3% doctors used mother baby contact as a modality to prevent hypothermia only.
- d) Fifty five percent doctors and 12% nurses used 2-minute hand wash technique to prevent infections.
- e) About 12% doctors and 10% nurses used all effective steps to prevent newborn infections.
- f) About 25% babies were reported to receive bath immediately after birth.
- g) Most babies are weighed at birth.

5. Conclusions

Breastfeeding and BFHI.

There is considerable interest in the BFHI movement as nearly 1400 hospitals have opted to be baby friendly. The findings that initiation of breastfeeding has significantly improved, prelacteal feeds have significantly reduced and offering supplements during

hospital stay also reduced significantly promise future improvements in breastfeeding practices in the health care system.

The capacity of health workers to help women during breastfeeding problems has not changed significantly with the implementation of the BFHI programme.

We have observed that in implementing baby friendly hospital initiative, putting into practice the “ten steps” is of crucial important. There is some progress made in this regard and steps that are easy to implement and don’t need many skills or staff time have been observed to be showing more improvement like step 4,7 and 8. These address initiation, rooming in and demand feeding. Other steps like 3,5,6,9, and 10 addressing helping women if they have problem and counselling and support, building confidence need skills and staff time are seemingly not well implemented. The step 2 regarding training has not been sufficiently addressed through the current programme.

The BPNI, UNICEF and WHO all recognise the need for strengthening training of doctors in “Step 2” of "Ten steps" to provide breastfeeding counselling and support to breastfeeding mothers. Training component also needs to be strengthened, especially in nurses who are always more close to the mothers. Current studies also suggest these actions.

Evidence from all over the world suggests that implementation of ten steps has positive impact on breastfeeding. To increase skills of health workers in breastfeeding management, current experience seems to confirm that 18 hours (3 days) training is an appropriate minimum length of training, while longer courses (e.g. 5-6 full time days) with daily clinical sessions are more desirable. Training must be compulsory for all staff including seniors and combined with strong, specific breastfeeding policies to ensure change in hospital practices. It is necessary to increase knowledge, but it is also necessary to increase skills, or the knowledge may not be able to be used. There is also a need to change attitudes, which create barriers to breastfeeding promotion. Health workers who have not been trained in breastfeeding management cannot be expected to give mothers effective guidance and provide skilled counselling. Thus, there is need to strengthen the component of training in BF hospitals and those non- BF hospital.

Newborn care

Newborn care has been observed to be moving forward, in the hospitals essential. Health professionals are taking effective steps but there is evidence to say only half of practised all the six modalities of prevention of hypothermia and just about one sixth would take all steps to prevent infections. There is a vast potential of improvement in this area, which is so crucial to newborn survival and effective steps need to be taken in this direction.

The IMS Act

The IMS Act is known to about two third doctors and half of the nurses and 25% of storekeepers, drawing our attention to the need of an information campaign for its existence and provisions of the IMS Act. The sponsorship of health professionals by companies amounting to about 14% also demands greater need of systematic monitoring the compliance of the IMS Act and advocacy to strengthen it and comply with. Discount and commission offered by the manufactures to the chemists for making special displays was about 10%; further highlights need to strengthen the IMS Act and plug all possible loopholes.

Chapter 1

Introduction

1.1 Background

The progress of Baby Friendly Hospital Initiative (BF) into the states of India makes apparent the need to strengthen training in breastfeeding management and lactation management. The importance of improving health and community worker's breastfeeding support skills has been recognised in a number of countries. Poor breastfeeding practices and poor complementary feeding practices are an important cause of malnutrition in India.

Infant feeding practices in India

Although 95% of children in India are breastfed, and 88% continue to breastfeed until at least 12-15 months of age, practices are far from optimal. The National Family Health Survey of 1992-3 found that the rate of exclusive breastfeeding in infants of 0-3 months was only 34% in urban areas, and 55% in rural areas. The rates of bottle feeding at 0-3 months were 16% in urban and 8% in rural areas, and by 4-6 months had increased to 29% and 14% respectively. The use of commercial formula is 4% at 4 months of age, but other milks such as animal milk, commonly diluted buffalo milk, is given more often (26% at 4 months of age).

Initiation of breastfeeding is usually delayed, with less than 10% of infant's breastfeeding within an hour of birth, and only 26% starting to breastfeed within one day. Delayed initiation of breastfeeding is recognised physiologically as a possible cause of milk insufficiency, which is a commonest reason given by mothers to start top feeding. These practices are an important reasons why in India about half of all children are underweight, and the infant mortality rate remains is around 72. This provides adequate justification for resources being devoted to improving infant feeding practices from birth. The Government of India is committed to Innocenti Declaration that provides the basis of "Ten steps" to successful breastfeeding.

In 1991, to address the problem of decline in breastfeeding due to lack of health care support a major programme, the Baby Friendly Hospital Initiative (BFHI) was launched by the National Task Force including Govt. of India, UNICEF and WHO, and several voluntary organizations including BPNI, TNAI, ACASH, VHAI etc. This followed a global launch of this initiative in 12 countries and then slowly progressed to other countries. Progress of BFHI can be visualised in Fig. 1-3. Box 1 below provides information on the "Ten steps"

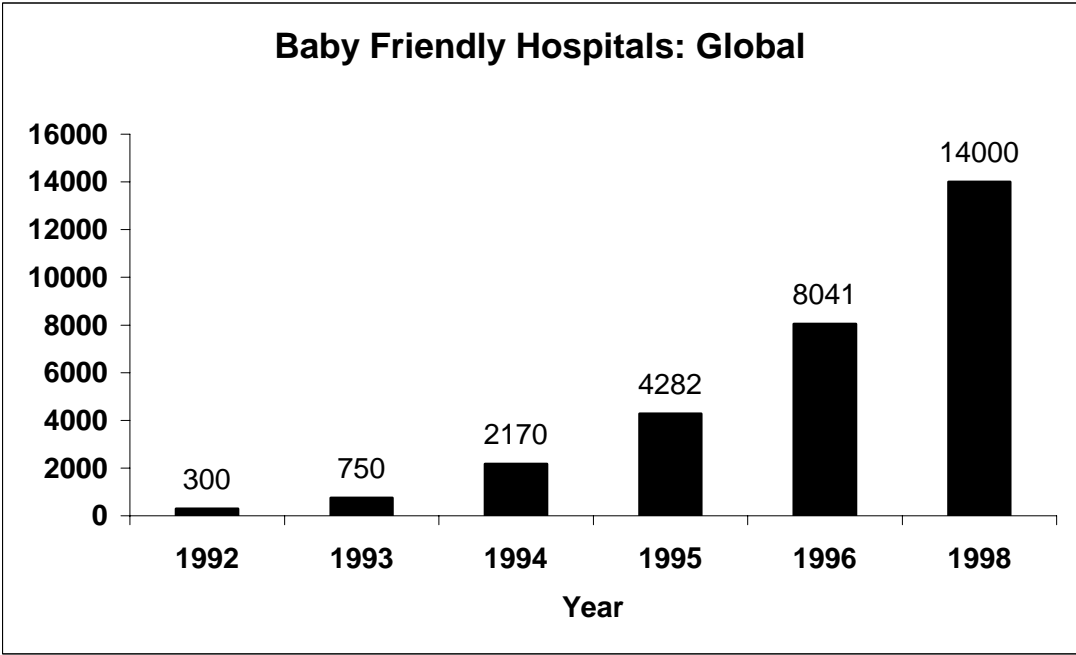


Fig. 1

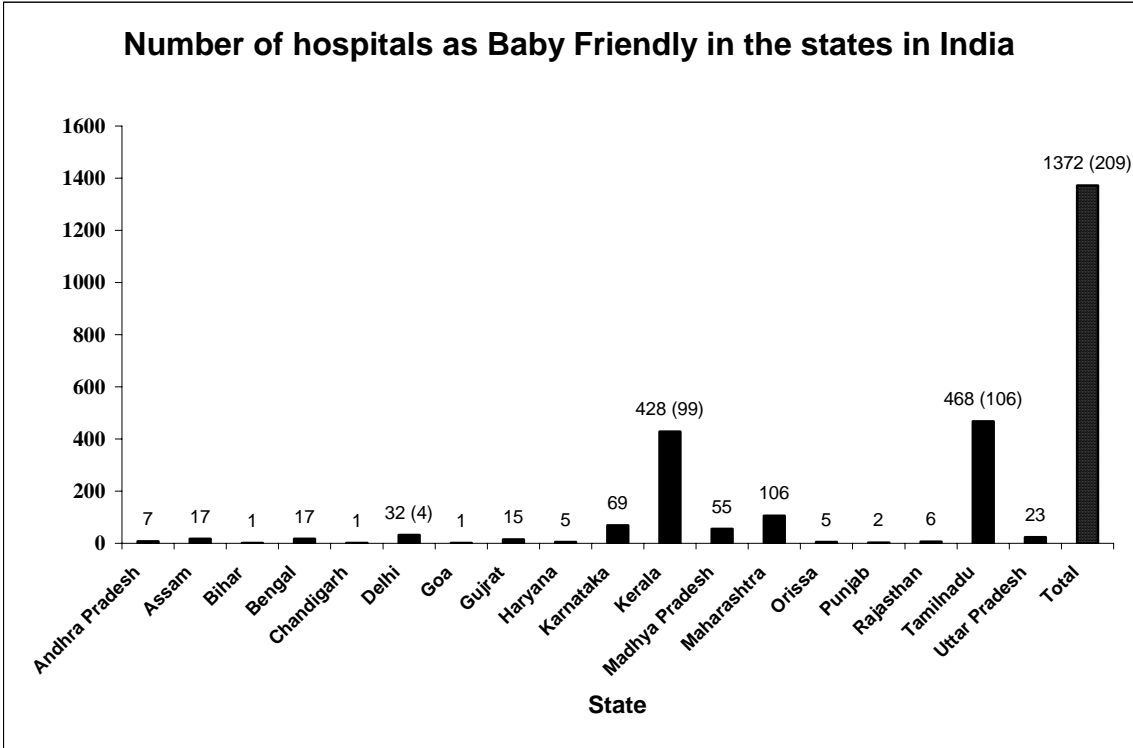


Fig. 2

(Bracketed figures are hospitals with deliveries less than 250 per annum)

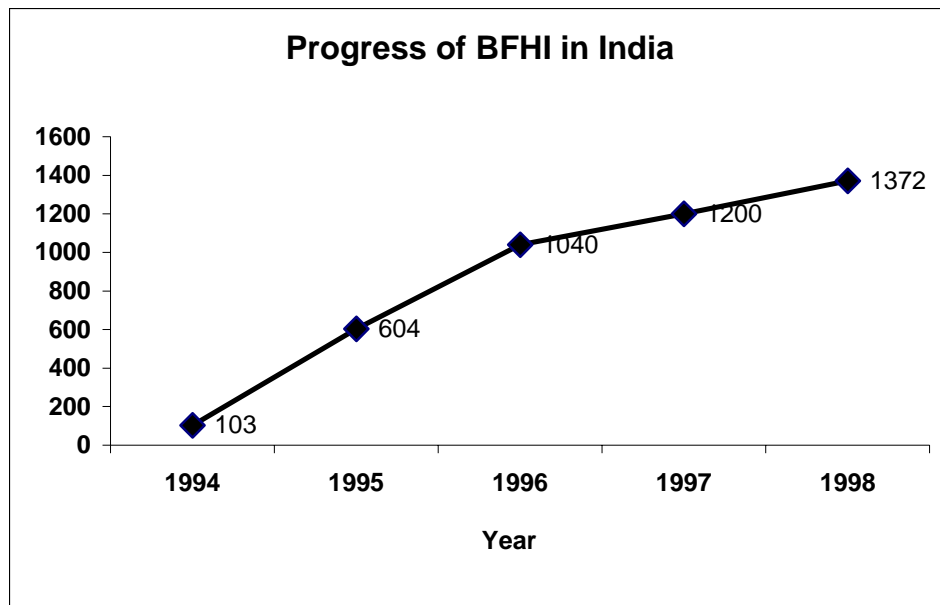


Fig. 3

Box 1

The Ten Steps to Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers' initiate breastfeeding within a half-hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in – allow mothers and infants to remain together – 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

1.2. Introduction

In India, the BFHI was started in 1993. Under this, the hospital with maternity services, are expected to follow the ten steps to successful breastfeeding. These hospitals are assessed and certified as baby friendly (BF) if they are found to be following these practices by the team of assessors. BFHI is progressing in the country and about 1300 hospitals have been declared as Baby Friendly.

To study the breastfeeding practices including newborn care both in BF and other hospitals and community in catchment areas of these hospitals in India, the study was commissioned by the UNICEF India and awarded to BPNI in middle of 1998. The study was designed to find out the effectiveness of BF hospitals and also to study the status of the ' Infant Milk Substitutes, Infant Foods and Feeding Bottles (Regulation of Production, Supply and Distribution) Act, 1992', (*The IMS Act*) which came into force from 1st August, 1993.

This study has made an attempt to compare the findings with those of an earlier study got conducted by UNICEF in 1994 covering 552 hospitals in 9 states and union territories, to find out breastfeeding practices in the community in the catchment areas of these hospitals, compare the practices between those delivered in a certified Baby Friendly Hospitals and that of other non- BF hospitals. The study also documents status of newborn care in these hospitals.

1.3 Objectives of the Study

As spelled out by UNICEF, the objectives of the study were:

Primary

1. To study
 - a) Current practices related to free and low cost distribution of infant milk substitutes to hospitals with maternity services; and the implementation of the IMS Act in health care institutions.
 - b) Compare the practices between baby friendly and other hospitals.

2. To study the infant feeding practices and the availability of infant milk substitutes (IMS), feeding bottles and nipples in the catchment area of these hospitals compare between the catchment areas of baby friendly hospitals and others.

Secondary

To study the newborn care practices in these hospitals including resuscitation, infection prevention, temperature control etc.

Chapter 2

Evaluation Methodology

2.1 Introduction

The research study aimed at studying the newborn care, infant feeding practices and implementation of the IMS Act, 1992 in the hospital settings as well as infant feeding practices in the community of the catchment area of these hospitals. The following sections present the details of the sampling methodology, development of tools used for data collection, and data analysis etc.

2.2 Sampling Methodology

UNICEF gave the list of BF hospitals to BPNI as available from National Task Force, BFHI, and it became the basis of selection of BF hospitals. The non-BF hospitals were selected as control from the same city or neighbouring city taking into consideration the size of hospitals and number of deliveries in these hospitals in public and private sector, in 13 major states in India selected for the study.

The study aimed to cover in all 600 hospitals - 300 BF and 300 non-BF. Due to the changed situation in the field, the number of hospitals eventually covered was 306 in BF group and 294 in non-BF group. From the selected hospitals a variety of respondents from the selected hospitals' maternity and paediatric units and their catchment areas were interviewed. The respondents covered by the study are given below:

Types of respondent from 600 hospitals

Women in maternity	600
Women in paediatrics	600
Women in catchment area	600
Nurse in maternity	600
Nurse in paediatrics	600
Doctors - 1 in 1 hospital	600
Storekeepers - 1 in 1	600
Chemist near hospital	600
Chemist near catchment area	600
Total number of Interviews	5400

2.3 Data Collection

Data was collected from the respondents using semi-structured questionnaires developed in Delhi and field tested in Delhi and Haryana. The questionnaires included questions for collection of the following information:

1. The current breastfeeding practices of the institutions with regard to “Ten Steps”

- a) Initiation of breastfeeding
- b) Percentage of babies given prelacteal feeds by the health workers (tinned milk or animal milk or any other nutrition)
- c) Percentage of babies given tinned formula or other milk at birth

2. The newborn care practices and availability of resources available to the consumer e.g. resuscitation facilities, infection prevention and temperature control.

3. Infant feeding practices in the community.

To facilitate collection of above information accurately, the questionnaires were designed in line with standard WHO indicators for measuring breastfeeding and complimentary feeding and standard guidelines of National Neonatology Forum (NNF) for assessment of newborn care.

2.4 Development of Data Collection Tools

An **Expert Group** of eminent persons in the field of child health and research was constituted to provide technical inputs. The expert group met eight times and developed tools. A team of BPNI experts conducted the field tests of the draft tools in Delhi and Haryana hospitals. This provided useful information for modification of the questionnaires/tools.

2.5 Selection and Training of State Co-ordinators (SCs)

The expert group identified the State Co-ordinators/City Co-ordinators to conduct the field study. State Co-ordinator/City Co-ordinators were identified based on their skills such as interest and basic knowledge on the issues of breastfeeding promotion and protection, and the IMS Act, team management skills, communication skills, research experience, and high level of motivation. As a co-ordinator, s/he was expected to:

- Develop an operational plan.
- Attend an orientation meeting for planning and research methodology in Delhi from 30 October to 1 November 1998 at Delhi.
- Identify the BF and Non BF hospitals from the list of BF hospitals and non-BF from the same places and match in size as far as possible.
- Identification of respondents to be interviewed.
- Supervising and scrutinising the data for quality, completion of fieldwork as scheduled was the responsibility of SC.

Workshop for the state coordinators

A three-day workshop for finalisation of tools, orientation to the study and logistics, and field training of the State Co-ordinators was held in Delhi using participatory methodology. During the workshop:

Tools developed in Delhi were discussed training and were finalised incorporating the necessary modifications.

State Co-ordinators were given the task to identify field investigators in each State who will preferably be BPNI network members with guidelines. They were thoroughly trained and given field practice and then sent for data collection. SCs played the role of a supervisor as well.

The outcome of training sessions was a detailed plan of action for the study and final tools. The tools then were given to SCs and a detailed training programme for the field workers was also developed with them. The continuous co-ordination and reporting was done from the office of Country Coordinator at Delhi.

The programme of the workshop is given below:

Day 1

1200	Introduction and Objectives of the study	Dr Arun Gupta
1230	Study Design and Basis	Dr Sanjiv Kumar
1300-1400	<i>Lunch</i>	
1400	IMS Act Salient features (Specifically on Health care system)	Mrs. Suman Bhatia
1500	BF Programme, Ten Steps, Functioning and expectations at BF	Dr JP Dadhich
1600	<i>Tea</i>	
1630	State Co-ordinators Plans and questions	

Day 2

0930-1230	Methodology and discussion on tools	Facilitators Dr YP Gupta Dr DK Taneja Dr S B Arora Mrs. Suman Bhatia
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1230-1400 *Lunch*

1400-1600	Field Data Collection Operational Definitions Selection of hospitals Selection of respondents Training of field investigators	Facilitators Dr YP Gupta Dr D K Taneja Dr S B Arora Mrs. Suman Bhatia Mr. Goel
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1600 *Tea*

1630 Administration matters Dr Arun Gupta

Day 3

930-1230	Discussion on Role of state co-ordinators Selection and training of investigator Sampling Supervision of field data collection Scrutiny of completed questionnaires	Facilitators Ms Suman Bhatia Dr D K Taneja Dr SB Arora
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1230-1330 Administrative and financial matters Dr Arun Gupta

J P Dadhich

1330 *Lunch*

Identification and Training of the field staff

Field staff was identified by the SCs at the respective places and provided training to conduct the study as per the agreed curriculum. The staff was provided the required information of the hospitals to be studied and a general letter of introduction from the Project Officer of UNICEF to help them getting into the hospitals

2.6 Data analysis

Statistical planning for the study

For the purpose of data entry and analysis, a statistical expert developed a coding plan and tabulation plan for each questionnaire used for data collection. All the completed questionnaires were scrutinised to check any inconsistencies and coding was done to facilitate data entry.

Data entry and analysis was done using SPSS and supervised by a system analyst who also checked the data for consistency and validation, tabulation and the data analysis.

Selected Hospitals and Code plan

The codes and identification of states and hospital selected there in, are given below

State Code	State	Allotted Sr. Nos.
01	A.P.	001-026
02	Assam	027-063
03	Bihar	064-084
04	Delhi	085-124
05	Gujrat	125-159
06	Karnataka	160-209
07	Kerala	210-284
08	MP	285-344
09	Maharashtra	345-414
10	Rajasthan	415-440
11	Tamilnadu	441-520
12	Uttar Pradesh	521-560
13	West Bengal	561-600
State Code	State	Number of Hosp.
01	A.P.	26
02	Assam	37
03	Bihar	21
04	Delhi	40
05	Gujrat	35
06	Karnataka	49
07	Kerala	75
08	MP	60
09	Maharashtra	70
10	Rajasthan	26
11	Tamilnadu	80
12	Uttar Pradesh	40
13	West Bengal	40

Chapter 3

Results

3. Profiles

3.1 Profile of hospitals

- a) Of the 600 hospitals included in the study, 306 were ‘baby friendly’ (BF) and 294 ‘non baby friendly’ hospitals. Their distribution by states is given in **Table 3.1.1.** (Fig. 4)

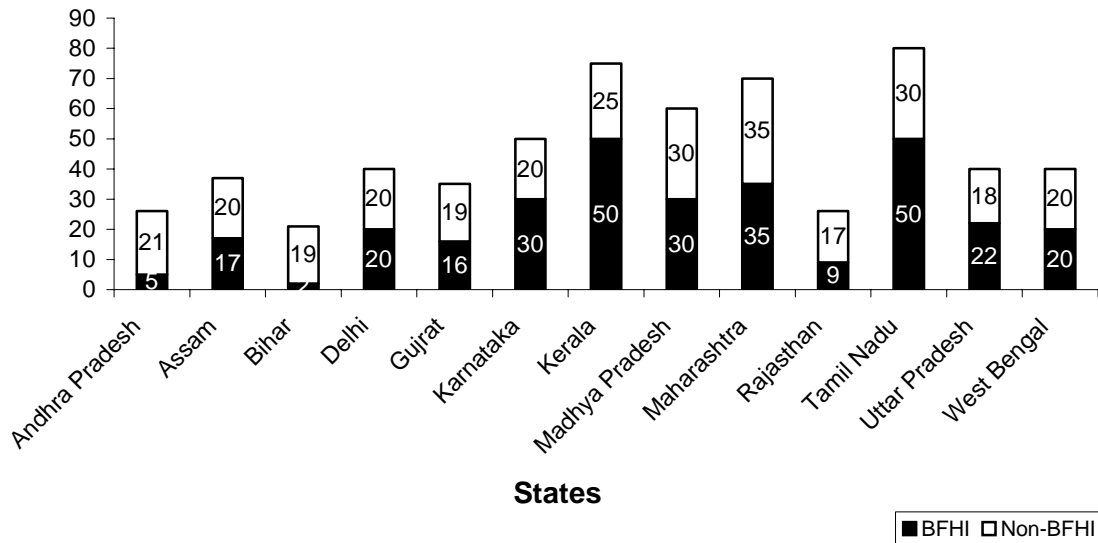


Fig. 4: State wise distribution

- b) The distribution of hospitals by number of deliveries is given in **Table 3.1.2.** Among baby friendly hospitals, 50% had deliveries more than 1000, nearly 43% had deliveries between 250-1000 and 7% had less than 250 deliveries per year. This percentage in case of other hospitals was 14.6%, 48.6% and 36.8%, respectively.

3.2 Profile of respondents

3.2.1 Doctors

Profile of doctors interviewed is summarised as below:

- a) In baby friendly (BF) hospitals, 42.8% of doctors had specialisation in Paediatrics and 27.8% in Gynaecology whereas in other hospitals, these figures were 29.6% and 38.1%, respectively. Others were General Practitioners.
- b) Table 3.2.1.1 gives the distribution of doctors by years of experience after internship, ownership and type of hospitals.

3.2.2 Nurses

Profile of nurses interviewed, is summarised as below:

- a) Total number of nurses interviewed were 1200 , 612 from BF and 588 from other hospitals. In BF hospitals. **(Table 3.2.2.1)**
- b) The educational qualification of large number of nurses was Matric/Higher Secondary (65%). About 10% of them were also graduates in both types of hospitals.
- c) Only 63.5% nurses in BF hospitals and 41.3% in non-BF hospitals had professional qualifications like degree or diploma in Nursing. About 11% in BF and 28% in non-BF (Non-Govt. hospitals) didn't have any professional training in Nursing. Rests were either ANM or MPH.W.
- d) The BF hospital nurses were more experienced (about 29% had experience of 5 years, 25% had 10 years, 30% had experience of 11-20 years and 16% had more than 20 years of experience). In non-BF hospitals, the nurses were rather young (42.4% had experience of 5 years, 26% had 10 years, 24.3% had experience of 11-20 years and 7.4% had experience of more than 20 years).

3.2.3 Women in maternity ward

Profile of women in maternity ward in BF and Non-BF hospitals.

In order to find out the true breastfeeding practices advised and actually followed in the hospitals, two women in the maternity ward of each hospital were interviewed. The profile of women in the maternity ward is as below. The distribution of women interviewed shows that:

- a) About 32.2% of them had studied up to primary or less, about 51.6. % From middle to higher secondary and about 16.2% were graduates or more among BF hospitals. Their percentage among non-BF hospitals was 24.6%, 50.3% and 25.1%, respectively. Profile of women in maternity ward was compared in both types of hospital and table was found to be comparable. **(Table 3.2.3.1)**
- b) In both types of hospitals, about 84% of women were housewives and 75% woman interviewed was Hindus. However, the percentage of Muslims and Christians (13.5% and 7.7%) was more in non-BF hospitals compared to BF hospitals (11.4% and 6.7%, respectively). **(Table 3.2.3.1)**
- c) In BF hospitals, about 75.3% of woman had normal deliveries and 22.5% caesarean whereas in non-BF hospitals, these percentages were 60.5% and 33.4%, respectively. The percentage women delivering by forceps is insignificant in both types of hospitals. **(Table 3.2.3.2)**

3.2.4 Women in catchment area

In order to know the breastfeeding practices at home, women from the Catchment area of the hospitals were also interviewed. One woman per hospital, both BF and non-BF was interviewed in the Catchment area who had delivered in the hospital and her baby was 3-5 month old. Thus, a total of 600 women were interviewed (306 in BF and 294 in non-BF hospital Catchment areas). Profile of women in the Catchment area is given below.

- a) About 35% of them had studied up to primary or plus, about 45% from middle to higher secondary and about 20% were graduates or more. Their distribution between BF and non-BF was not much different except those who have studied up to graduate level or more (it is 13% in BF where as in non-BF it is about 27%).
- b) The percentage of women living in urban areas was much higher in non-BF areas (about 70%) compared to BF areas (about 54%).
- c) In both types of hospital areas, about 80% of woman had normal deliveries. Caesarean were more (16%) in non-BF compared to BF hospital catchment areas (10.8%).

3.2.5 Chemists

In both BF and non-BF hospitals, about 25% of chemists interviewed were located within the premises of the hospital and another 72% around the hospital or nearby colony. In about 3% of cases specific information was not available. (**Table 3.2.5.1**)

3.2.6 Storekeepers

A total of 600 storekeepers were interviewed - 306 BF hospitals and 294 in non-BF hospitals. Out of these, 41.3 percent were from governmental hospitals and rests 58.7 percent were from non-government hospitals. Further, about three fourth of the storekeepers belonged to either medium sized or large sized hospitals (having annual deliveries more than 250).

Table 3.1.1: Distribution of hospitals by state and type of hospital

State	Type of hospitals		Total
	BFHI	Non-BFHI	
Andhra Pradesh	5 (1.6)	21 (7.1)	26 (4.3)
Assam	17 (5.6)	20 (6.8)	37 (6.2)
Bihar	2 (0.7)	19 (6.5)	21 (3.5)
Delhi	20 (6.6)	20 (6.8)	40 (6.7)
Gujarat	16 (5.2)	19 (6.5)	35 (5.8)
Karnataka	30 (9.8)	20 (6.8)	50 (8.3)
Kerala	50 (16.3)	25 (8.5)	75 (12.3)
Madhya Pradesh	30 (9.8)	30 (10.2)	60 (10.0)
Maharashtra	35 (11.4)	35 (11.9)	70 (11.7)
Rajasthan	9 (2.9)	17 (5.8)	26 (4.3)
Tamil Nadu	50 (16.3)	30 (10.2)	80 (13.3)
Uttar Pradesh	22 (7.2)	18 (6.1)	40 (6.7)
West Bengal	20 (6.6)	20 (6.8)	40 (6.7)
Total	306 (100.0)	294 (100.0)	600 (100.0)

Note: Figures within Parentheses indicate percentages.

Table 3.1.2: Distribution of hospitals by number of deliveries and type of hospital

Category	Type of hospitals		
	BFHI	Non-BFHI	Total
Estimated No of Deliveries per year			
> 1000	153 (50.0)	43 (14.6)	196 (32.7)
250-1000	132 (43.1)	143 (48.6)	275 (45.8)
< 250	21 (6.9)	108 (36.8)	129 (21.5)
Total	306 (100.0)	294 (100.0)	600 (100.0)

Note: Figures within Parentheses indicate percentages.

Table 3.2.1.1: Distribution of doctors by field of Specialisation and Type of Hospital

Field of specialisation	Type of hospitals		
	BFHI	Non-BFHI	Total
Paediatrics	131(42.8)	87(29.6)	218(36.4)
Obstetrics &Gynaecology	85(27.8)	112(38.1)	197(32.8)
General Practice	90(29.4)	95(32.3)	185(30.8)
Total	306 (100.0)	294 (100.0)	600 (100.0)

Note: Figures within Parentheses indicate percentages.

Table 3.2.2.1: Distribution of nurses by ownership status and type of hospital

Ownership status	Type of hospitals		
	BFHI (N=612)	Non-BFHI (N=588)	Total (N=1200)
Govt.	412 (67.3)	22 (13.9)	494 (41.2)
Non-Govt.	200 (32.7)	506 (86.1)	706 (58.8)

Note: - Figures within Parentheses indicate Percentages

Table 3.2.3.1: Profile of women in maternity ward in BF and Non-BF hospitals

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	
	n1	n2	Z
1. Educational status			
Illiterate	98	89	0.165086
Literate but up to primary	99	56	1.154533
Middle/Matric/SS	316	295	0.361706
Graduate & above	99	148	-1.684229
2. Occupation			
House Wife	534	477	2.679905
Others	78	111	-1.12242
3. Religion			
Hindu	453	447	-0.693205
Others	158	141	0.366516

4. Place of residence			
Rural	214	163	1.1496275
Slum	82	36	1.154963
Urban	316	389	-3.9087
5. Type of family			
Nuclear	254	248	-0.152965
Joint	358	340	0.180327

Table 3.2.3.2: Distribution of women by delivery type and type of hospital

Type of delivery	Type of hospitals		
	BFHI	Non-BFHI	Total
Normal	461 (75.3)	356 (60.5)	817 (68.1)
Caesarean	138 (22.5)	196 (33.4)	334 (27.8)
Forceps	12 (2.0)	9 (1.5)	21 (1.7)
Others	1 (0.2)	27 (4.6)	28 (2.4)
Total	612 (100.0)	588 (100.0)	1200 (100.0)

Note: - Figures within Parentheses indicate Percentages

Table 3.2.5.1: Distribution of chemists by location of chemist shop and type of hospital

Location of chemist shop	Type of hospitals		
	BFHI (N=612)	Non-BFHI (N=588)	Total (N=1200)
1. Within the premises of the hospital	153 (25.0)	142 (24.1)	295 (24.6)
2. Around the hospital	265 (43.3)	249 (42.3)	514 (42.8)
3. In the nearest colony	178 (29.1)	181 (30.8)	359 (29.9)
4. Not specified	16 (2.6)	16 (2.8)	32 (2.7)

Note: - Figures within parentheses indicate percentages

4. Findings of the study

The study findings are presented in three key sections,

- Relating to breastfeeding;
- Relating to implementation of the IMS Act and
- Relating to newborn care available in the 600 hospitals.

4.1. Breastfeeding practices among women in maternity ward and catchment areas

The findings regarding breastfeeding practices have been available from the interviews of doctors, nurses and mothers. For the purpose of true and valid picture of breastfeeding, responses from mothers have been presented and statistically analysed. Some of the relevant findings that reflect the capacity of health workers are also presented in this section.

This section enumerates various breastfeeding practices that were found in these hospitals reported by the women in maternity wards. In order to see the significance of differences among various breastfeeding practices between BF hospitals and non-BF hospitals, *statistical test for proportion* were applied.

The test used is:

$$Z = \frac{p_1 - p_2}{\sqrt{PQ(1/n_1 + 1/n_2)}}$$

p1 is the observed proportion in BFH

p2 is the observed proportion in non-BFH

P is pooled estimate

Q is 1-P

N1=observed number in BF hospitals

N2= observed number in non BF hospitals

Z=standard normal variable

Test of significance

If the absolute value of Z is > 1.96, then the difference between the two proportions i.e. p1 and p2 is significant. The significant differences have been shown in bolds in the tables provided at the end of this section.

1.Initiation of breastfeeding within one hour of birth:

Among BF hospitals, 54.5% women reported that breastfeeding was initiated within one hour while this figure was 36.5% in non-BF hospitals. (Fig.5) *Early initiation in BF hospitals has been found to be significantly higher in relation to all factors such as education, religion, occupation, place of residence, and type of family. (Table 4.1.1)*

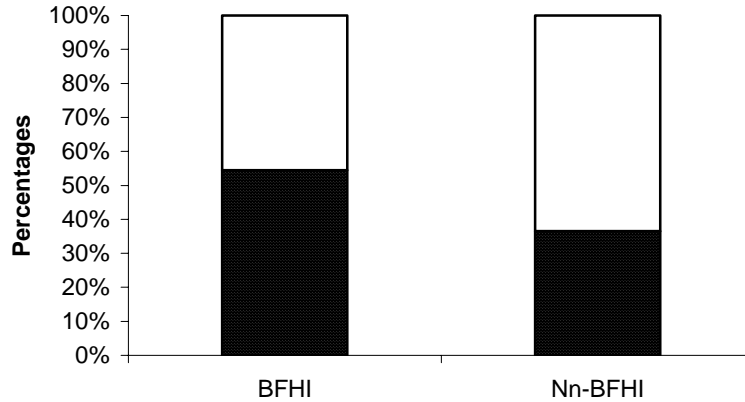


Fig. 5: Initiation of breastfeeding within one hour

2.Prelacteal feeds:

As seen in Fig.6, prelacteal feeds were reported to be given in 16% cases in BF hospitals and 34% in non-BF hospitals. Whether baby has been given anything to drink before put to breastfeeding, it is expected that this practice should be lower in BF hospitals than non-BF hospitals. It has been observed that except in case of occupation other than housewife and except in Hindu religion the practice of prelacteal feeds was significantly less in BF hospitals. (Table 4.1.2)

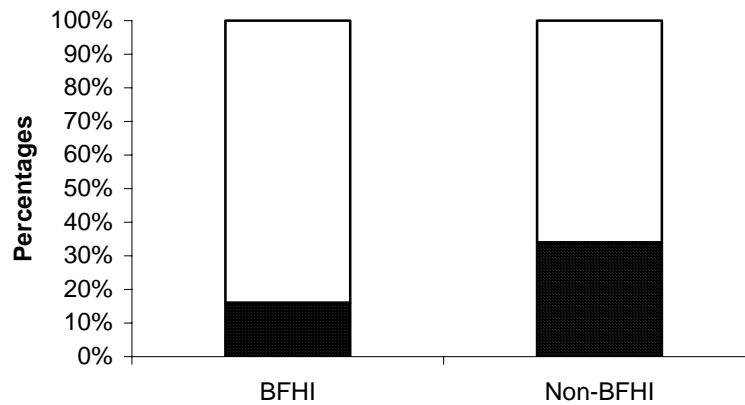


Fig 6: Prelacteal feeds

Type of prelacteal feeds and who advised these?

Most commonly given prelacteal feeds were Honey/Jaggery/Sugar (37%) or plain water (37%) in case of BF hospitals whereas in case of non-BF hospitals, they were Honey/Jaggery/Sugar (41.5%) or plain water (36.5%) followed by tinned/powder milk (20%) or fresh milk (11.5%). In BF hospitals, these items were largely given on the advice of mother, mother-in-law or self. In non-BF hospitals, this advice has largely been given by doctors and nurses followed by mother-in-law, mother and self.

3. Breastfeeding problems:

About 13% of women in BF and 12% in non-BF hospitals had any kind of problem during breastfeeding the baby. (Fig 7) No significant difference was found between two types of hospitals with regards to occurrence of breastfeeding problems. (**Table 4.1.3**)

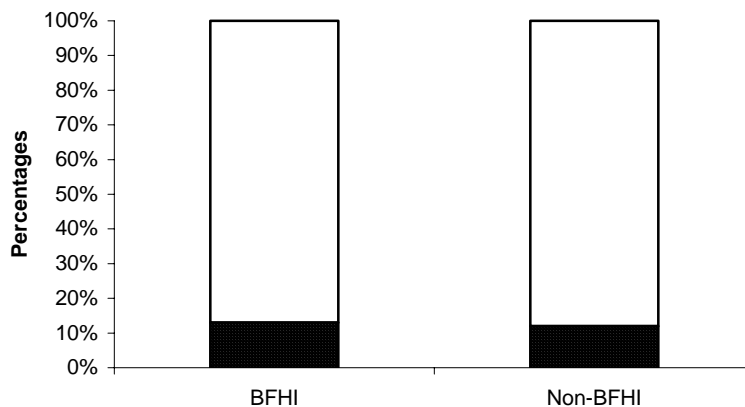


Fig 7: Problems during breastfeeding

4. Restriction on frequency of breastfeeding:

In both types of hospitals, majority of nurses didn't keep any restriction on the frequency of breastfeeding, if any, the restrictions were more common in non-BF hospitals. About 66% of the women in BF hospitals were advised about the frequency of breastfeeding while in non-BF hospitals, only 57.3% of women were advised about it. In BF hospitals, in 62% of cases the frequency of breastfeeding advised by nurses was 'on demand'. In non-BF hospitals, this percentage was 51%. Data on restrictions in frequency of breastfeeding showed no significant differences between two types of hospitals except in women from slum areas. (**Table 4.1.4**)

5. Restriction on length of breastfeeding:

About 10% of nurses in BF hospitals and 7.5% in non-BF hospitals kept restriction on length of breastfeeding. Data on restrictions in the length of breastfeeding was analysed and no significant differences were observed in two types of hospital. (Table 4.1.5)

6. Offering dummy/pacifiers:

In both types of hospitals, the percentage of babies who ever sucked on a pacifier or dummy is very small; about 5%. The pacifier or dummy was used in such cases on the advice of nurse, self and doctor, respectively. For sucking on a pacifiers or dummy, it was observed that it was less in BFHI but statistically significant only in case of women from joint families. (Table 4.1.6)

7. Supplements in the hospitals:

It was observed that babies were offered supplements of water or other fluids /foods in addition to mother's milk; in case of BF hospitals it was reported to be 7 % and in case of non-BF hospitals it was 17%. (Fig. 8) On analysis of this data it was found that it was significantly lower in BF hospitals as compared to non-BF hospitals in relation to most factors except in low education, rural area and women working outside home. (Table 4.1.7)

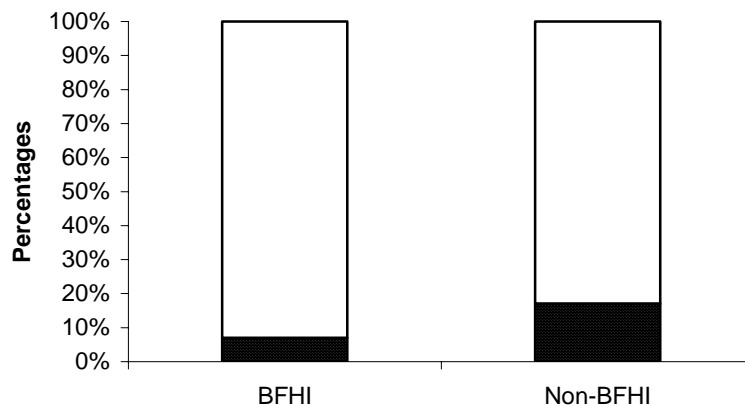


Fig.8: Supplements in hospitals

8. Breastfeeding discussed during antenatal period.

Whether breastfeeding was discussed with women at the antenatal clinics, 53% women in BF hospitals and 44% in non-BF hospitals said “yes”.(Fig. 9) It was analysed to be

significantly higher in BF hospitals relation to all factors except women coming from rural area and low education status women. (Table 4.1.8)

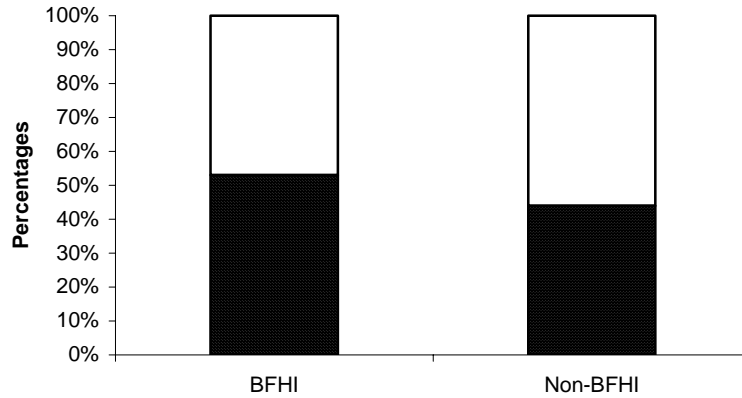


Fig 9: Breastfeeding discussion during antenatal period

9. Period of exclusive breastfeeding, women’s plans.

On what women’s plan about period of exclusive breastfeeding, it was observed that the differences were not significantly higher in BF hospitals an in two types of hospitals except in case of women coming from rural area. (Table 4.1.9)

Table 4.1.1: Percentage distribution of women in maternity ward by who *initiated breastfeeding within one hour* and their selected characteristics in two types of hospitals.

Characteristic	Type of hospitals/No. of hours				Z
	BFHI		Non-BFHI		
	<01 hrs.	>01 hrs.	<01 hrs.	>01 hrs.	
1. Educational Status					
Illiterate	51/98 (52.0)	38/98 (38.8)	20/89 (22.5)	35/89 (39.3)	4.151552
Literate but Up to primary	60/99 (60.6)	33/99 (33.3)	18/56 (32.1)	31/56 (55.4)	3.409013
Middle/Matric/SS	171/316 (54.1)	136/316 (43.0)	108/295 (36.6)	171/295 (57.9)	4.339616
Graduate & above	49/99 (49.5)	46/99 (46.5)	47/148 (31.8)	94/148 (63.5)	2.796336
2. Occupation					
House Wife	290 (54.3)	223 (41.8)	166 (34.8)	276 (57.9)	4.013439
Others	44 (56.4)	32 (41.0)	26 (23.40)	56 (50.5)	2.686633
3. Religion					
Hindu	254 (56.1)	182 (40.2)	146 (32.70)	269 (60.2)	4.492569
Others	180 (56.3)	73 (45.9)	46 (32.6)	63 (44.7)	1.927814
4. Place of Residence					
Rural	118 (55.1)	87 (40.7)	51 (31.3)	83 (50.9)	2.842933
Slum	55 (67.1)	28 (34.1)	12 (33.3)	19 (52.8)	2.17544
Urban	161 (50.90)	140 (44.3)	129 (33.2)	230 (59.1)	4.372118
5. Type of Family					
Nuclear	147 (57.9)	100 (39.4)	80 (32.3)	130 (52.4)	3.686125
Joint	187 (52.2)	155 (43.3)	112 (32.9)	202 (59.4)	3.247056

Figures within parentheses indicate percentages

Table 4.1.2: Percentage of women in maternity ward where the baby has been given any *prelacteal feeds* by their selected characteristics this in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	15/98 (15.3)	30/89 (33.7)	-2.93994
Literate but Up to primary	14/99 (14.1)	17/56 (30.4)	-2.4376
Middle/Matric/SS	52/316 (16.4)	68/295 (32.2)	-4.56775
Graduate & above	17/99 (17.2)	57/148 (38.5)	-3.58116
2. Occupation			
House Wife	87/534 (16.3)	173/477 (36.3)	-7.26145
Others	11/78 (14.1)	26/111 (23.4)	-1.58681
3. Religion			
Hindu	65/453 (14.3)	167/447 (37.4)	-7.92191
Others	33/1159 (20.3)	32/141 (22.7)	-0.39851
4. Place of Residence			
Rural	34/214 (15.9)	50/163 (30.7)	-3.42008
Slum	7/82 (8.5)	11/36 (30.6)	-3.07534
Urban	57/316 (18.0)	138/389 (35.5)	-5.16614
5. Type of Family			
Nuclear	35/254 (13.8)	78/248 (31.5)	-4.74482
Joint	63/358 (17.6)	121/340 (35.6)	-5.39454

Figures within parentheses indicate percentages

Table 4.1.3: Percentage of women in maternity ward with *breastfeeding problems* by their selected characteristics in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	12/98 (12.2)	4/89 (4.5)	1.882097
Literate but Up to primary	14/99 (14.1)	3/56 (5.4)	1.655801
Middle/Matric/SS	34/316 (10.7)	37/295 (12.5)	-0.69511
Graduate & above	19/99 (19.2)	27/148 (18.2)	0.197936
2. Occupation			
House Wife	65/534 (12.2)	58/477 (12.2)	0
Others	14/78 (17.9)	13/111 (11.7)	1.200146
3. Religion			
Hindu	57/453 (12.6)	60/447 (13.4)	-0.335684
Other	22/159 (13.8)	11/141 (7.8)	1.659028
4. Place of Residence			
Rural	22/214 (10.3)	14/163 (8.6)	0.555992
Slum	8/82 (9.8)	3/36 (8.3)	0.257797
Urban	49/316 (15.5)	54/389 (13.9)	0.598035
5. Type of Family			
Nuclear	21/254 (8.3)	28/248 (11.3)	-1.13123
Joint	58/358 (16.2)	43/340 (12.6)	1.352249

Figures within parentheses indicate percentages

Table 4.1.4: Percentage of women in maternity ward with *restriction on frequency of breastfeeding* by their selected characteristics in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	15/98 (15.3)	11/89 (12.4)	0.57216
Literate but Up to primary	13/99 (13.1)	8/56 (14.3)	-0.2098
Middle/Matric/Ss	49/316 (15.5)	36/295 (12.2)	1.178016
Graduate & above	37/99 (37.4)	24/148 (16.2)	3.786227
2. Occupation			
House Wife	106/534 (19.9)	74/477 (15.5)	1.824868
Others	8/78 (10.3)	5/111 (4.5)	1.5495
3. Religion			
Hindu	73/453 (16.1)	63/447 (14.1)	0.837704
Others	41/159 (25.8)	16/141 (11.3)	3.196152
4. Place of Residence			
Rural	40/214 (18.7)	22/163 (13.5)	1.349146
Slum	2/82 (2.4)	4/36 (11.1)	-1.98642
Urban	72/316 (22.8)	53/289 (13.6)	3.181245
5. Type of Family			
Nuclear	60/254 (23.6)	44/248 (17.7)	1.631682
Joint	54/358 (15.1)	35/340 (10.3)	1.899695s

Figures within parentheses indicate percentages

Table 4.1.5: Percentage of women in maternity ward with *restriction on length of breastfeeding* by their selected characteristic in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	13/98 (13.2)	7/89 (7.9)	1.172053
Literate but Up to primary	6/99 (6.1)	7/56 (12.5)	-1.37896
Middle/Matric/SS.	25/316 (7.9)	14/295 (4.7)	1.620258
Graduate & above	16/99 (16.2)	16/148 (10.8)	1.238139
2. Occupation			
House Wife	57/534 (10.7)	41/477 (8.6)	1.125797
Others	3/78 (3.8)	3/111 (2.7)	0.425992
3. Religion			
Hindu	49/453 (10.8)	37/447 (8.3)	1.2754
Others	11/159 (6.9)	7/141 (5.0)	0.691233
4. Place of Residence			
Rural	7/214 (3.3)	4/163 (2.5)	0.454483
Slum	1/82 (1.2)	1/36 (2.8)	-0.6212
Urban	52/316 (16.5)	39/389 (10.0)	2.559411
5. Type of Family			
Nuclear	23/254 (9.1)	22/248 (8.9)	0.07828
Joint	37/358 (10.3)	22/340 (6.5)	1.804275

Figures within parentheses indicate percentages

Table 4.1.6: Percentage of women in maternity ward where babies were *offered a dummy/pacifier* by their selected characteristics in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	1/98 (1.0)	0/89 (0.0)	0.94588
Literate but Up to primary	5/99 (5.1)	2/56 (3.6)	0.430108
Middle/Matric/SS	4/316 (1.2)	8/295 (2.7)	-1.3487
Graduate & above	6/99 (6.1)	7/148 (4.7)	0.482975
2. Occupation			
House Wife	15/534 (2.8)	15/477 (3.1)	-0.28182
Others	1/78 (1.3)	2/111 (1.8)	-0.27023
3. Religion			
Hindu	13/453 (2.9)	13/447 (2.9)	0
Others	3/159 (1.9)	4/141 (2.8)	-0.5165
4. Place of Residence			
Rural	6/214 (2.8)	3/163 (1.8)	0.632667
Slum	0/82 (0.0)	0/36 (0.0)	NA
Urban	10/316 (3.2)	14/389 (3.6)	-0.29059
5. Type of Family			
Nuclear	14/254 (5.5)	8/248 (3.2)	1.261182
Joint	2/358 (0.6)	9/340 (2.6)	-2.12176

Figures within parentheses indicate percentages

Table 4.1.7: Percentage of women in maternity ward in whose case the baby was given supplements of water or anything else to drink or eat other than breastmilk after putting him/her to breastfeeding by their selected characteristics in two types of hospitals.

Characteristic	Type of Hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	11/98 (11.2)	12/89 (13.5)	-0.47835
Literate but Up to primary	9/99 (9.1)	10/56 (17.9)	-1.60358
Middle/Matric/SS	19/316 (0.6)	53/295 (8.8)	-1.32518
Graduate & above	10/99 (10.1)	30/148 (20.3)	-2.13154
2. Occupation			
House Wife	43/534 (8.1)	92/477 (19.3)	-5.22127
Others	6/78 (7.7)	13/111 (11.7)	-0.90047
3. Religion			
Hindu	29/453 (6.4)	82/447 (18.3)	-5.43275
Others	20/159 (12.6)	23/141 (16.3)	-0.91264
4. Place of Residence			
Rural	22/214 (10.3)	24/163 (14.7)	-1.2306
Slum	6/82 (7.3)	7/136 (19.4)	-1.9349
Urban	21/316 (6.6)	74/389 (19.0)	-4.80021
5. Type of Family			
Nuclear	17/254 (6.7)	38/248 (15.3)	-3.08524
Joint	32/358 (8.9)	67/340 (19.7)	-4.09064

Figures within parentheses indicate percentages

Table 4.1.8: Percentage of women in maternity ward with whom *breastfeeding was discussed during their antenatal visits* by their selected characteristics in two types of hospitals.

Characteristic	Type of hospitals		
	BFHI	Non-BFHI	Z
1. Educational Status			
Illiterate	26/98 (26.5)	9/89 (10.1)	2.872849
Literate but Up to primary	40/99 (40.4)	15/56 (26.8)	1.699918
Middle/Matric/SS	128/316 (40.5)	96/295 (32.5)	2.050902
Graduate & above	44/99 (44.4)	63/148 (42.6)	0.279777
2. Occupation			
House Wife	209/534 (39.1)	145/477 (30.4)	2.895319
Others	29/78 (37.2)	38/111 (34.2)	0.424498
3. Religion			
Hindu	172/453 (38.0)	142/447 (31.8)	1.95079
Others	66/159 (41.5)	41/141 (29.1)	2.237718
4. Place of Residence			
Rural	76/214 (35.5)	31/163 (19.0)	3.520911
Slum	42/82 (51.2)	15/36 (41.7)	0.950871
Urban	120/316 (38.0)	137/389 (35.2)	0.768179
5. Type of Family			
Nuclear	109/254 (42.9)	74/248 (29.8)	3.049375
Joint	129/358 (36.0)	109/340 (32.1)	1.086418

Figures within parentheses indicate percentages

Table 4.1.9: Percentage distribution of women in maternity ward by their plan to continue with *exclusive breastfeeding till 4 months* in two types of hospitals.

Characteristic	Type of Hospitals						
	BFHI			Non-BFHI			Z (0-4)
	≤ 4	5-12	> 12	≤ 4	5-12	> 12	
1. Educational Status							
Illiterate	119 (19.4)	57 (58.2)	11 (11.2)	12 (13.5)	36 (40.4)	4 (4.5)	0.497962
Literate but Up to primary	30 (30.3)	45 (45.4)	16 (16.2)	12 (21.4)	25 (44.6)	8 (14.3)	0.581878
Middle/Matric/SS	133 (43.4)	142 (45.8)	18 (5.9)	100 (33.9)	134 (45.4)	16 (5.5)	1.469388
Graduate & above	42 (42.4)	43 (43.4)	2 (2.0)	53 (35.8)	62 (41.9)	12 (8.1)	0.616649
2. Occupation							
House Wife	192 (36.0)	255 (47.8)	43 (8.1)	143 (30.0)	218 (45.7)	35 (7.3)	1.151361
Others	32 (41.0)	32 (41.0)	4 (5.1)	34 (30.6)	39 (35.1)	5 (4.5)	0.881642
3. Religion							
Hindu	157 (34.7)	226 (49.9)	36 (7.9)	137 (30.6)	204 (45.6)	34 (7.6)	0.747024
Others	67 (42.1)	61 (38.4)	11 (6.9)	40 (28.4)	53 (37.6)	6 (4.3)	1.42029
4. Place of Residence							
Rural	112 (52.2)	72 (33.6)	11 (5.1)	57 (35.0)	60 (36.8)	9 (5.5)	2.11978
Slum	16 (19.5)	54 (65.9)	5 (6.1)	7 (19.4)	17 (47.2)	6 (2.8)	0.005573
Urban	96 (30.4)	161 (50.9)	31 (9.8)	113 (29.1)	180 (46.3)	30 (7.7)	0.204975
5. Type of Family							
Nuclear	105 (41.3)	109 (42.9)	19 (7.5)	83 (33.5)	94 (37.9)	13 (5.2)	1.094918
Joint	119 (33.2)	178 (49.7)	28 (7.8)	94 (27.6)	163 (47.9)	27 (7.9)	0.879604

Figures within parentheses indicate percentages

4.2. Breastfeeding practices in catchment area women

Findings in the catchment areas with regards to breastfeeding were almost similar to those presented in the earlier section and have also been tested for statistical significances with a test of proportions. Key areas have been presented here.

1. Initiation of breastfeeding within 1 hour

Percentage of babies put to breast within one hour of delivery was 49.3% in BF hospitals and 36.4% in non-bf hospitals. (**Fig. 10**) It was analysed to be significantly higher in BF hospital area in relation to education (graduate or more) occupation (house wives), Hindu women and in women belonging to nuclear families. (Table 4.2.1)

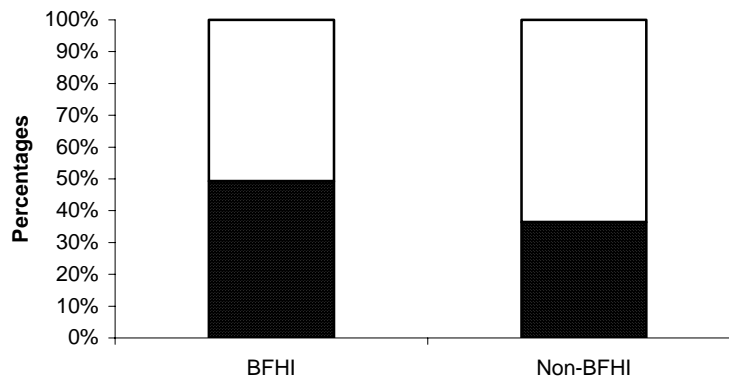


Fig. 10: Initiation of Breastfeeding within 1 hour

2. Prelacteal feeds:

In BF hospital areas 16% women were reported to be giving prelacteal feeds as compared to 31% in non-BF hospitals catchment area. (**Fig 11**) Significantly lesser number of women were giving prelacteal feeds to babies living in the catchment area of BF hospitals than in the other areas except in the case of women working outside home, educated up to primary, or slum area women. Religion could not show any significant difference. (Table 4.2.2)

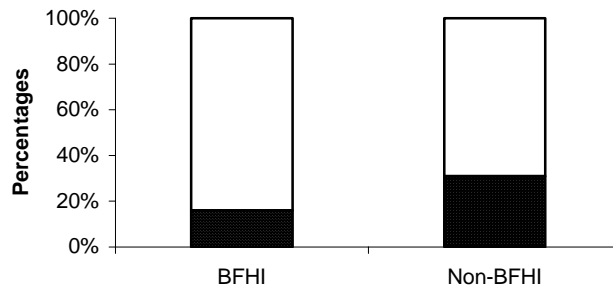


Fig. 11: Prelacteal feeds

3. Offering dummy/pacifiers

Women in catchment area of BF hospitals reported that they offered/dummy pacifiers & 10% in other areas. But it was significant only in case of women coming from rural area or slums in catchment areas of BF hospitals. (Fig.12) It may be due to economic position of these women or families or their traditions. (Table 4.2.3)

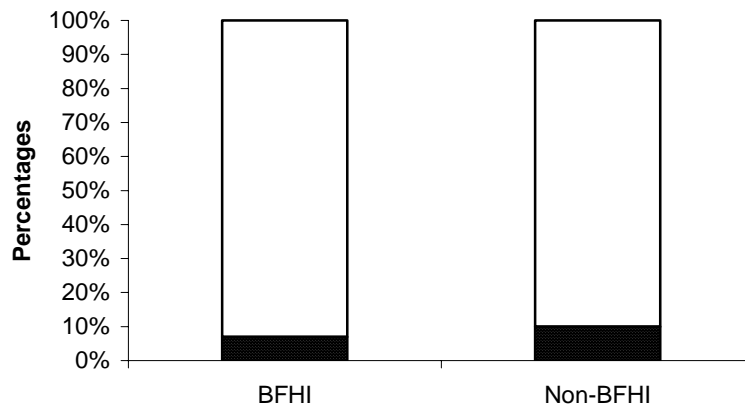


Fig. 12: Offering dummy/pacifiers

4. Infant formula advised at postnatal visit.

Only 6.3% in women BF areas and 7.2% non-BF areas in were advised to give infant formula by health workers to babies at the postnatal visit. (Fig 13). Though the advice was less in BF hospital areas but it was not significant. (Table 4.2.4)

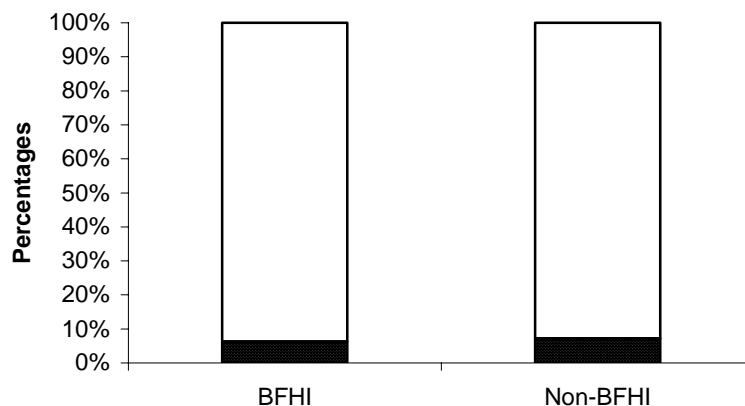


Fig. 13: Infant formula advised at postnatal visit

5. Positioning and attachment explained in the hospital.

In BF areas 70 % women were explained about positioning and attachment as compared to 63.3% non- BF areas. (Fig 14) Even though women were explained positioning and attachment in BF hospitals more than in non-BF hospitals but it was significant only in case of slum area women, Hindu women and illiterate women (Table 4.2.5)

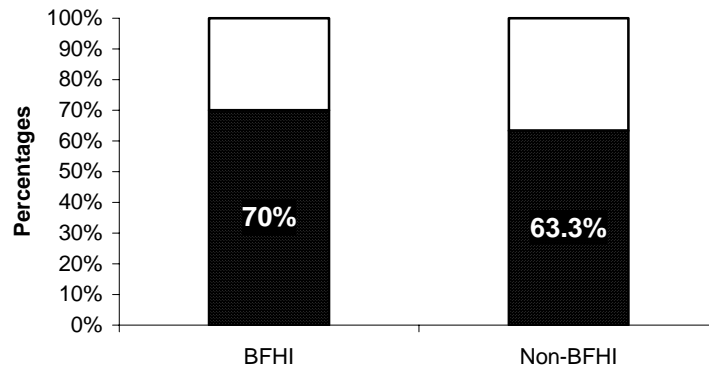


Fig. 14: Positioning and attachment explained in the hospitals

6.Call for postnatal visit

Whether women are called for a postnatal visit or not, 68% in BF areas and 61 % in non-BF areas responded by saying “yes”. There was no significant difference between two areas. (Table 4.2.6)

7.Breastfeeding discussions during postnatal visits

More women reported from BF areas that breastfeeding was discussed during postnatal visits; it was 86% vs. 69%. (Fig 15). Mostly in BF hospital areas breastfeeding was discussed significantly more during postnatal visits except in illiterate group, slums or rural women. (Table 4.2.7.)

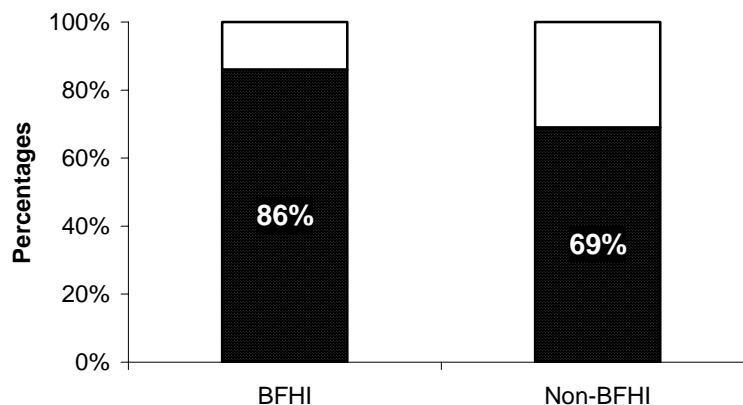


Fig. 15: Breastfeeding discussion during postnatal visit

Table 4.2.1: Percentage distribution of women in catchment area who *initiated breastfeeding within one hour* by their selected characteristics in two types of hospitals.

Characteristics	Type of Hospitals/ No. of hours				Z (0-1)
	BFHI		Non-BFHI		
	<1	>1	0-1	>1	
Educational Status					
Illiterate	20 (44.0)	25 (56.0)	8 (25.0)	24 (75.0)	0.953463
Literate - to primary	34 (68.0)	16 (32.0)	18 (42.0)	25 (58.0)	1.822956
Middle/matric/ss	92 (61.0)	59 (39.0)	53 (47.0)	60 (53.0)	1.6376
Graduate and above	28 (70.0)	12 (30.0)	33 (43.0)	43 (57.0)	2.082097
Occupation					
House Wife	153 (61.0)	97 (39.0)	100 (45.0)	120	2.461118
Others	21 (58.0)	15 (42.0)	12 (27.0)	32	1.719675
Religion					
Hindu	118 (61.0)	76 (39.0)	77 (43.0)	104	2.502567
Others	56 (61.0)	36 (39.0)	35 (42.0)	48	1.740512
Place of Residence					
Rural	53 (65.0)	28 (35.0)	25 (43.0)	33	1.866313
Slum	35 (73.0)	13 (27.0)	8 (53.0)	7	1.083154
Urban	86 (55.0)	71 (45.0)	79 (41.0)	112	1.722675
Type of Family					
Nuclear	84 (68.0)	39 (32.0)	57 (46.0)	68	2.689857
Joint	90 (55.0)	73 (45.0)	55 (40.0)	84	1.828553

Figures within parentheses indicate percentages

Table 4.2.2: Percentage of women in catchment area where the baby has been given *prelacteal feeds* by their selected characteristics this in two types of hospitals

Characteristics	BFHI	Non-BFHI	
Educational Status	n1	n2	
			Z
Illiterate	62 (21.0)	47 (62.0)	-2.20246
Literate - to primary	52 (21.2)	48 (37.5)	-1.79422
Middle/matric/ss	152 (14.5)	120 (28.3)	-2.79483
Graduate and above	40 (7.5)	79 (25.3)	-2.32344
Occupation			
House Wife	271 (15.1)	250 (30.4)	-4.18201
Others	35 (22.9)	44 (34.1)	-1.08825
Religion			
Hindu	199 (15.1)	191 (36.1)	-1.61241
Others	107 (17.8)	103 (21.4)	-0.65741
Place of Residence			
Rural	82 (19.5)	63 (41.3)	-2.86845
Slum	48 (22.9)	15 (33.3)	-0.80794
Urban	166 (13.3)	205 (29.3)	-3.69072
Type of Family			
Nuclear	120 (15.0)	120 (30.8)	-2.91265
Joint	169 (17.8)	153 (32.7)	-3.08849

Figures within parentheses indicate percentages

Table 4.2.3: Percentage of women in catchment area whose babies were *offered a pacifier/dummy* by their selected characteristics in two types of hospitals

Characteristics			
Educational Status	BFHI	Non-BFHI	
	n1	n2	Z
Illiterate	162 (9.7)	47 (19.1)	-1.75778
Literate - to primary	152 (7.7)	48 (14.6)	-1.43107
Middle/matric/ss	152 (6.6)	120 (5.8)	0.2707
Graduate and above	40 (2.5)	79 (6.3)	-0.89655
Occupation			
House Wife	271 (6.3)	250 (6.4)	-0.04677
Others	35 (11.4)	44 (27.3)	-1.74671
Religion			
Hindu	199 (7.0)	191 (12.6)	-1.86432
Others	107 (6.5)	103 (3.9)	0.846435
Place of Residence			
Rural	82 (2.4)	63 (14.3)	-2.6852
Slum	48 (10.4)	15 (33.3)	-2.11965
Urban	166 (8.4)	205 (6.3)	0.776111
Type of Family			
Nuclear	120 (5.8)	120 (7.5)	-0.52851
Joint	169 (8.3)	153 (11.8)	-1.04718

Figures within parentheses indicate percentages

Table 4.2.4: Percentages of women in catchment area who were advised to give infant formula at the postnatal visit by their selected characteristics in two types of hospitals

Characteristics			
Educational Status	BFHI	Non-BFHI	
	n1	n2	Z
Illiterate	35 (8.6)	18 (5.6)	0.390757
Literate - to primary	37 (2.7)	30 (6.7)	-0.78612
Middle/matric/ss	106 (8.5)	80 (5.0)	0.926559
Graduate and above	29	52 (9.6)	-1.72245
Occupation			
House Wife	173 (6.4)	145 (7.6)	-0.41919
Others	34 (5.9)	35 (2.9)	0.608893
Religion			
Hindu	157 (7.0)	138 (5.8)	0.419
Others	50 (4.0)	42 (9.5)	-1.06507
Place of Residence			
Rural	59 (11.9)	35	2.121604
Slum	29 (2.6)	11 (18.2)	-1.73933
Urban	109 (4.6)	133 (7.5)	-0.93118
Type of Family			
Nuclear	0.054	81 (3.7)	0.020918
Joint	0.073	93 (9.7)	-0.0219

Figures within parentheses indicate percentages

Table 4.2.5: Percentages of women in catchment area who were ever *explained about positioning and attachment during breastfeeding* by any health care staff by their selected characteristics in two types of hospitals

Characteristics			
Educational Status	BFHI	Non-BFHI	
	n1	n2	Z
Illiterate	62	47	2.05682
Literate - to primary	52	48	0.754854
Middle/matric/ss	152	120	1.053669
Graduate and above	40	79	1.554942
Occupation			
House Wife	271	250	1.504995
Others	35	44	1.396174
Religion			
Hindu	199	191	1.974083
Others	107	103	-0.5508
Place of Residence			
Rural	82	63	1.921359
Slum	48	15	2.162366
Urban	166	205	0.63746
Type of Family			
Nuclear	120	120	0.444578
Joint	169	153	1.458077

Figures within parentheses indicate percentages

Table 4.2.6: Percentages of women in catchment area who were *called for a post natal visit* by some one in Hospital by their selected characteristics in two types of hospitals

Characteristics			
Educational Status	BFHI	Non-BFHI	
	n1	n2	Z
Illiterate	62 (56.5)	47 (38.3)	1.882742
Literate - to primary	52 (71.2)	48 (62.5)	0.924544
Middle/matric/ss	152 (69.7)	120 (66.7)	0.528312
Graduate and above	40 (72.5)	79 (65.8)	0.740462
Occupation			
House Wife	271 (63.8)	250 (58.0)	1.356127
Others	35 (97.1)	44 (79.5)	2.333531
Religion			
Hindu	199 (78.9)	191 (72.3)	1.518476
Others	107 (46.7)	103 (40.8)	0.861471
Place of Residence			
Rural	82 (72.0)	63 (55.6)	1.268015
Slum	48 (81.3)	15 (73.3)	1.149418
Urban	166 (65.7)	205 (64.9)	0.1614
Type of Family			
Nuclear	120 (77.5)	120 (67.5)	1.775544
Joint	169 (64.5)	153 (60.8)	0.700666

Figures within parentheses indicate percentages

Table 4.2.7: Percentages of women in catchment area who reported breastfeeding was *discussed at postnatal visit* by their selected characteristics in two types of hospitals

Characteristics	BFHI	Non-BFHI	
	n1	n2	Z
Educational Status			
Illiterate	35 (65.7)	18 (38.9)	1.864283
Literate - to primary	37 (89.2)	30 (70.0)	1.976434
Middle/matric/ss	106 (92.4)	80 (76.3)	3.085269
Graduate and above	29 (86.2)	52 (69.2)	1.700517
Occupation			
House Wife	173 (86.7)	145 (65.5)	4.476525
Others	34 (85.3)	35 (85.7)	-0.04718
Religion			
Hindu	157 (86.0)	138 (72.5)	2.8755
Others	50 (88.0)	42 (59.5)	3.144105
Place of Residence			
Rural	59 (88.1)	35 (74.3)	1.720376
Slum	39 (87.2)	11 (72.7)	1.158836
Urban	109 (85.3)	133 (68.4)	3.063232
Type of Family			
Nuclear	93 (81.7)	81 (64.2)	2.610726
Joint	109 (94.5)	93 (78.5)	3.385155

Figures within parentheses indicate percentages

4.3.Effect of training of doctors on breastfeeding practices:

1.Any vs. no training in breastfeeding and lactation management

We also made an attempt to compare some of the key breastfeeding indicators in relation to in-service training of staff in breastfeeding and lactation management. We found that 44% doctors in BFHI and 39% in non-BF hospitals said they have received “any” training of varied length of time. (Fig.16) and the percentage was still lower; 30% and 14% in case of nurses Analysis showed that training makes useful impact on the breastfeeding practices.

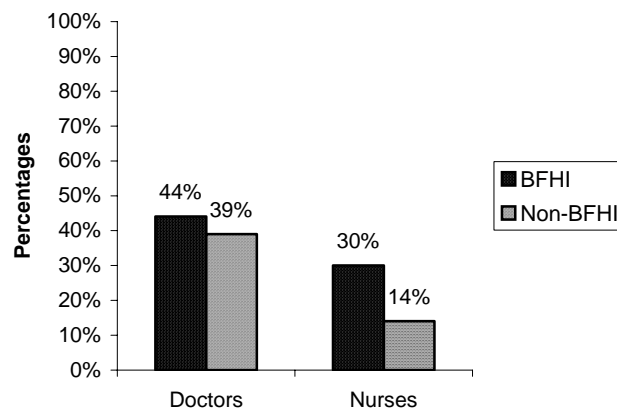


Fig. 16: Status of training among doctors and nurses in two types of hospitals

Even though only about 30% (**Fig.17**) of the *trained* staff had received the recommended length of training more than 20 hours, it seems to be a potentially effective strategy to bring long lasting changes.

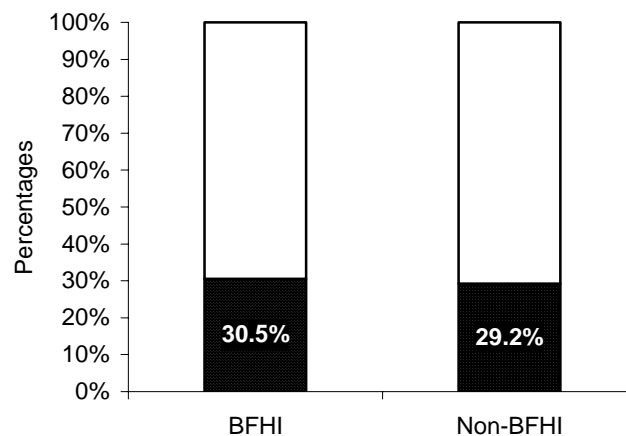


Fig. 17: More than 20 hours training

While relating the effect of any training on the breastfeeding practices as cited by the women in maternity area, it was found,

Responses from maternity area women

As you would note in here, in **Fig. 18**

- Initiation of breastfeeding in one hour was 53% Vs 41.2%
- Prelacteal feeds were given in 21.5% Vs 27.6%
- Expression of breastmilk was taught to 48% Vs 26%
- Restriction in length of breastfeeding was advised 7.2% Vs 12.3%
- Antenatal discussion about breastfeeding was 54.5% Vs 45 %
- Incidence of sore nipples was 4% Vs 9.7%
- Planning to exclusively breastfeeding for 2 months was 91% Vs 83.6%.
- Planning to breastfeeding exclusively for four months was 40% in each group.

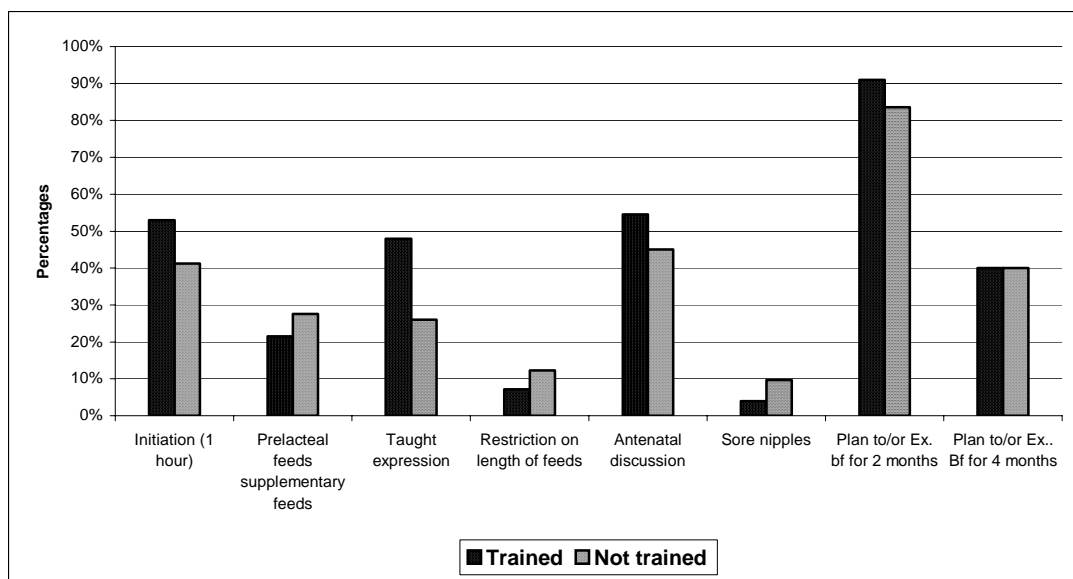


Fig. 18: Responses from maternity area women

The results indicate positive impact of training for indicators like initiation of breastfeeding, however it fails to make an impact on women’s decision to exclusively breastfeed for an optimum length of time.

We also applied test of proportions to positive contribution of training in breastfeeding and lactation management on the findings from women in maternity ward. The data shows ‘any’ training inputs have significant positive impact on few breastfeeding practices like initiation of breastfeeding within one hour, avoidance of prelacteal feeds,

discussions during antenatal period but not on planned duration of exclusive breastfeeding in these women (Table 4.3.1)

2. Knowledge to solve breastfeeding problems among nurses

Further we tried to see the effect of training on knowledge of nurses to solve breastfeeding problems. Correct answers were available from nurses in trained vs. untrained group as shown in Fig 19.

Problems	Trained	Not Trained
Sore nipples:	28.6	Vs 23.5%
Breast engorgement	26.5%	Vs 24.2%
Inverted Nipples	51.6%	Vs 56.6%
Breast Abscess	40.2%	Vs 31.3%
Insufficient Milk	23.7%	Vs 22%

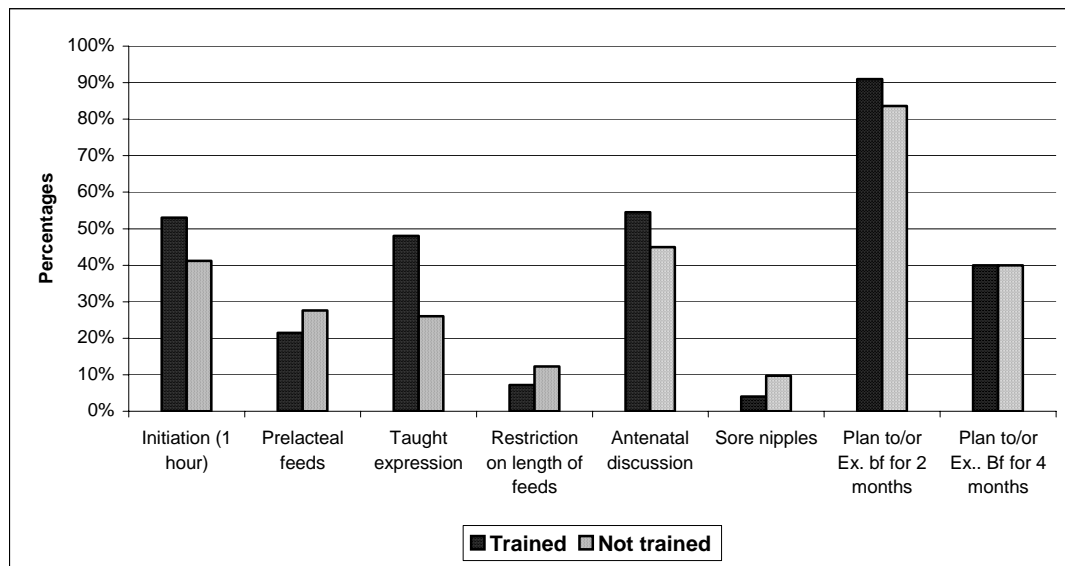


Fig. 19: Knowledge to solve breastfeeding problems among nurses

In this figure you would see knowledge, which is essential but not the only factor to bring a change, in two groups is seemingly higher.

3. Knowledge to solve breastfeeding problems among doctors

There was a marginal difference in the knowledge of doctor whoever trained or not trained to solve breastfeeding problems.

Problems	Trained	Not Trained
Sore nipples	41.5%	vs. 34.3%
Breast engorgement	45.8%	vs. 45.6%

Breast abscess	51.0%	vs.	45.7%
Inverted nipples	73.3%	vs.	48.8%
Insufficient milk	31.8%	vs.	30.8%

Fig. 20

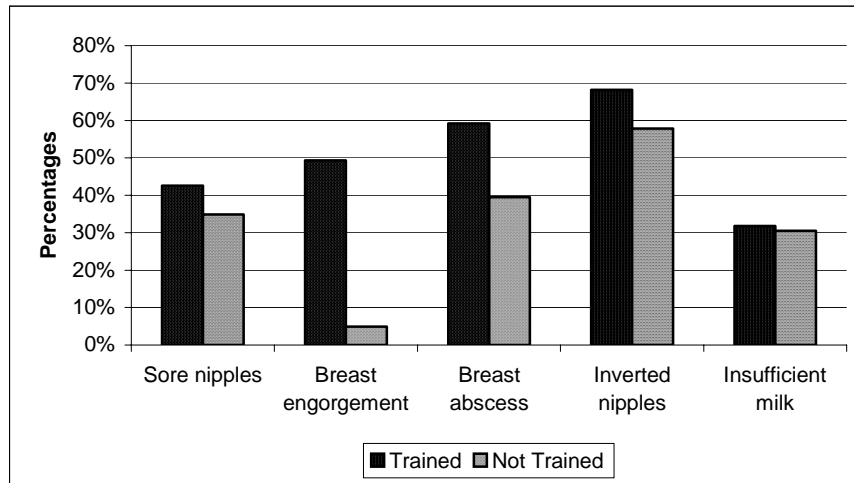


Fig. 20: Knowledge to solve breastfeeding problems among doctors

4. Breastfeeding practice in the catchment area (trained vs. untrained group)

While we looked at differences in practices in two areas in relation to trained Vs untrained group, following observations were made that are shown in **Fig. 21 a & b**.

Currently breastfeeding rate	96.4%	Vs	94.2%
Prelacteal feeds given	16%	Vs	31%
BF initiation in one hour	49.3%	Vs	36.4%
Demand feeding rate	81.6%	Vs	71.6%
Scheduled feeding rate	4%	Vs	11.7%
Use of any other food/fluid (In past 24 hours)	42.5%	Vs	45.6%
Use of animal milk	15%	Vs	20%
Use of commercial milks	15%	Vs	18%
Use of bottles	34%	Vs	35%
Pacifiers	6.9%	Vs	9.5%

Problems in breastfeeding 13.4% Vs 12.6%
 Postnatal advice on BF 86% Vs 69%
 Plan to give something else 42% Vs 42%

At 4 months.

Fig. 21 a:
Breastfeeding
practices in
catchment area

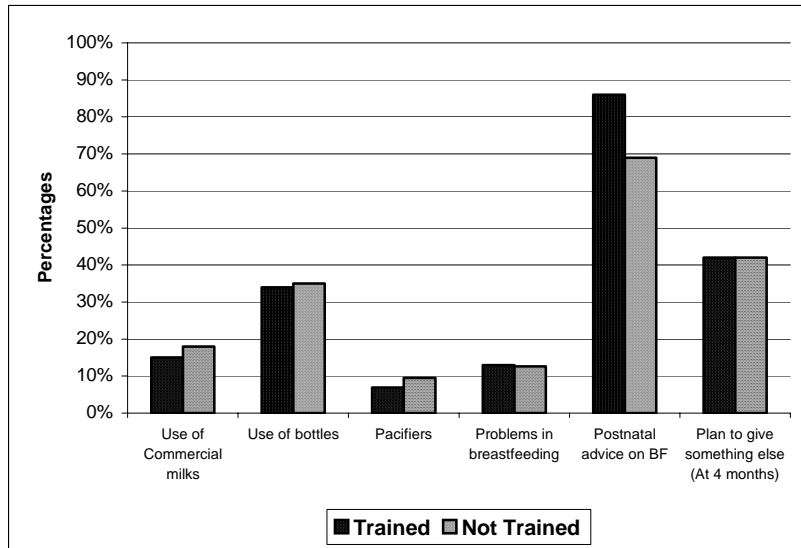
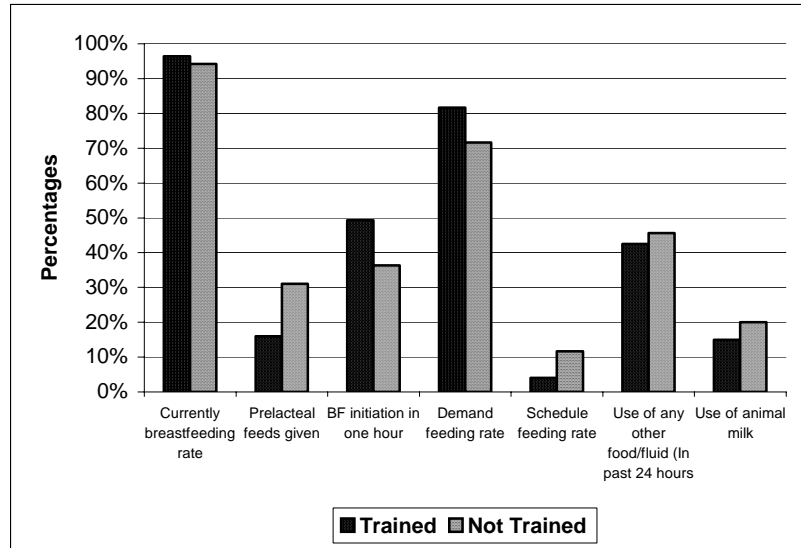


Fig. 21 b:
Breastfeeding
practices in catchment
area

You would notice that there are some differences in two groups in terms of ever breastfeeding, prelacteal feeds and initiation of breastfeeding but when we looked at women’s planning to exclusively breastfeed it is not much different and use of bottles and breastfeeding problems occurring during breastfeeding are almost similar in two groups.

Table 4.3.1: Association between ‘any’ training of doctors and various breastfeeding practices among women in maternity area.

Selected practices regarding breastfeeding by women	Training of Doctors (in hours)					
	BFHI		Non-BFHI		Chi-square 1 df=3.841	
	Yes	No	Yes	No	BF	Non-BF
1. No. of hours after delivery the baby was put to breast						
Yes	176	154	69	127	16.58655	4.444528
No	104	178	105	287		
2. Anything to drink before putting him/her to breastfeeding						
Yes	25	70	42	161	9.033356	11.99569
No	255	262	132	253		
3. Feeding problem						
Yes	25	51	23	51	2.529849	0.04461
No	255	281	151	363		
4. Restriction on breastfeeding frequency						
Yes	45	70	12	66	1.536258	4.51074
No	235	262	162	348		
5. Restriction on Length of breastfeeding						
Yes	19	43	9	33	2.324367	0.431784
No	261	289	165	381		
6. Baby had ever sucked on a pacifier or dummy						
Yes	4	12	3	14	0.292105	0.151459
No	276	320	171	400		
7. Anything to drink or eat after putting the baby to breastfeeding						
Yes	13	33	24	84	1.715254	2.326898
No	267	299	150	330		
8. Discussion on breastfeeding during antenatal visits						
Yes	129	108	56	128	11.21	0.088364
No	151	224	118	286		

9. No. of months planning to continue with exclusive breastfeeding							
Upto 4 months							
Yes	109	115	50	128	1.12513	0.262537	
No	171	217	124	286			
5 – 12 months							
Yes	135	153	83	177	0.277346	1.349463	
No	145	179	91	237			
>12 months							
Yes	36	62	32	96	2.069024	1.268917	
No	244	270	142	318			

Figures with parentheses indicate percentages

5. Newborn Care

Doctors and the nurses were interviewed to get their response relating to newborn care in all the 600 hospitals over 13 states. (BF and non-BF hospitals taken together because of the fact that newborn care status is not dependent on BFHI status)

1. Training in newborn care

Sixty two percent doctors said that they have received “any” training in newborn care.

2. Separate space for newborn resuscitation

Is separate space designated for resuscitation, 75% doctors responded by saying “yes” and 25% said “no”. (Fig. 22) Evaluating newborn care from **nurses also** highlights almost similar findings as 81.7% said there is a separate area for resuscitation.

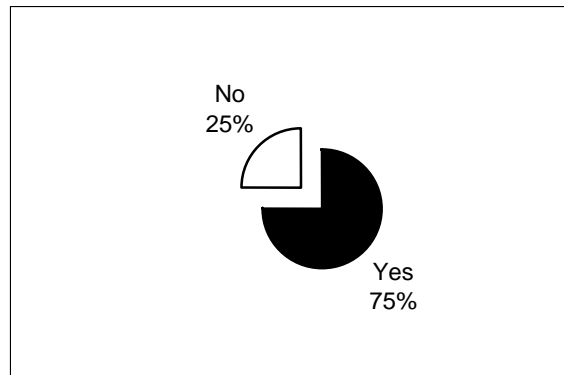


Fig 22: Separate space for newborn resuscitation

3. Modalities used to provide newborn care

To provide essential Newborn care, 89.3% of doctors told that they used resuscitation bags, 72.3% used radiant warmers, 95.3% used suction machine, 98% used oxygen source and 73.7% used phototherapy in their work units. (Fig. 23)

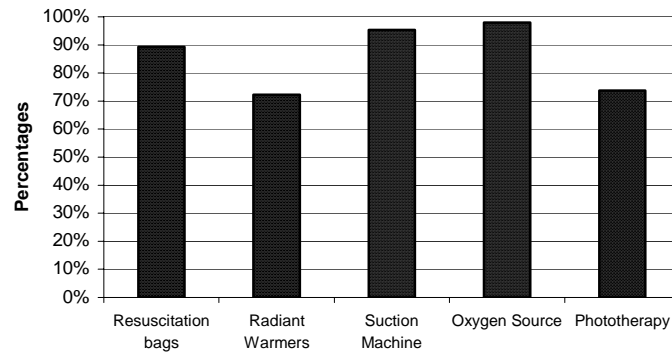


Fig. 23: Modalities used to provide newborn care

Non-utilisation of equipment

When these equipments were not in use or utilised; their non-availability was the major reason. For radiant warmer and suction machine, their non-functioning was also mentioned among the reasons (7.2% and 14.3%, respectively). In a few cases, lack of trained manpower was the reason mentioned for non-utilisation of the equipment.

4. Weighing Babies

Weighing babies was practised by almost all as reported by the doctors as well as nurses

5. Prevention of hypothermia

Regarding prevention of hypothermia, 570/600 (95%) doctors used warm linen to receive the baby, 91% used a source of warmth, 83% dried the baby immediately, 80% removed wet linen, 70% maintained appropriate temperature in labour room, and 69.5% responded that they maintain appropriate temperature of labour room. (Fig. 24)

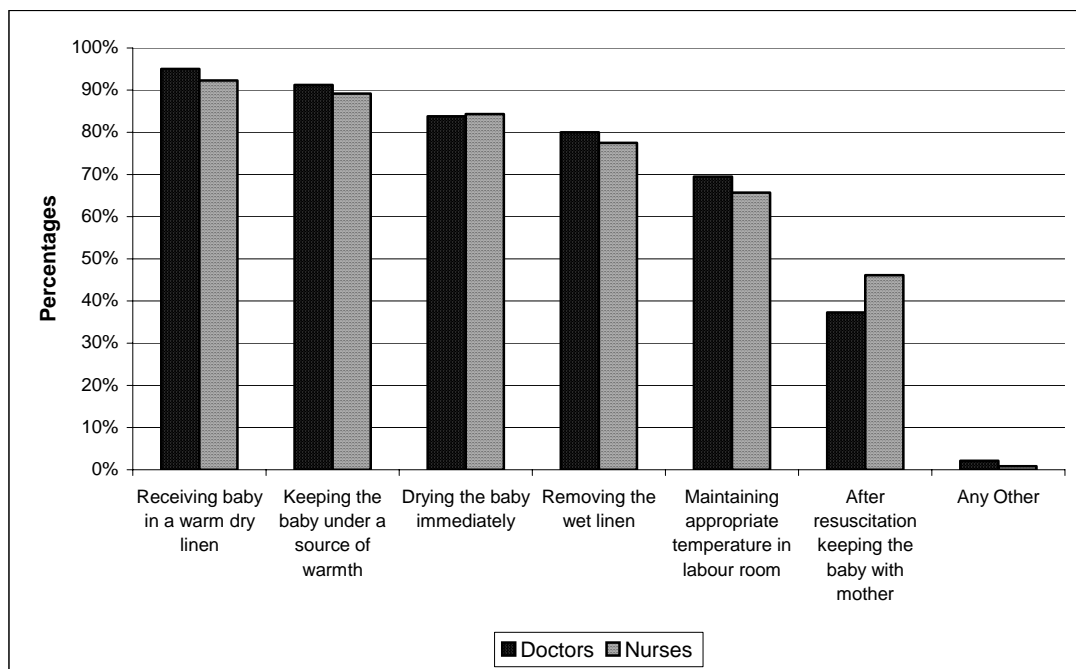


Fig. 24: Prevention of hypothermia at birth

Only 51% of all doctors replied that they practised all the six modalities and positive response rate among the **nurses** was 42% of nurses who did follow all the six practices.



Fig. 25: Practised all the six modalities

Only 37.3% used to keep babies with the mothers to use this as a modality to prevent hypothermia. (Fig. 26)

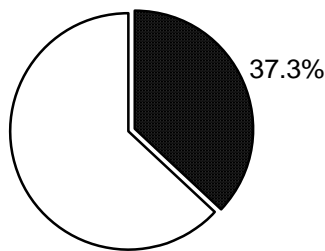


Fig. 26: Using breastfeeding for temperature maintenance

6.Prevention of Infection

Practice of hand washing contributes to prevention of infection. It was observed that only 55% doctors used hand washing for recommended period of 2 minutes before seeing starting to see newborns and only 65% used 30 seconds hand washing in between seeing babies. Other modalities like using separate syringes (57.1%); use of mask (60.8%); discouraging visitors (76.7%) using separate linen (80.5%), screening staff for infection (43.5%) and screening of fomites for infection was 43.5%. (Fig. 27)

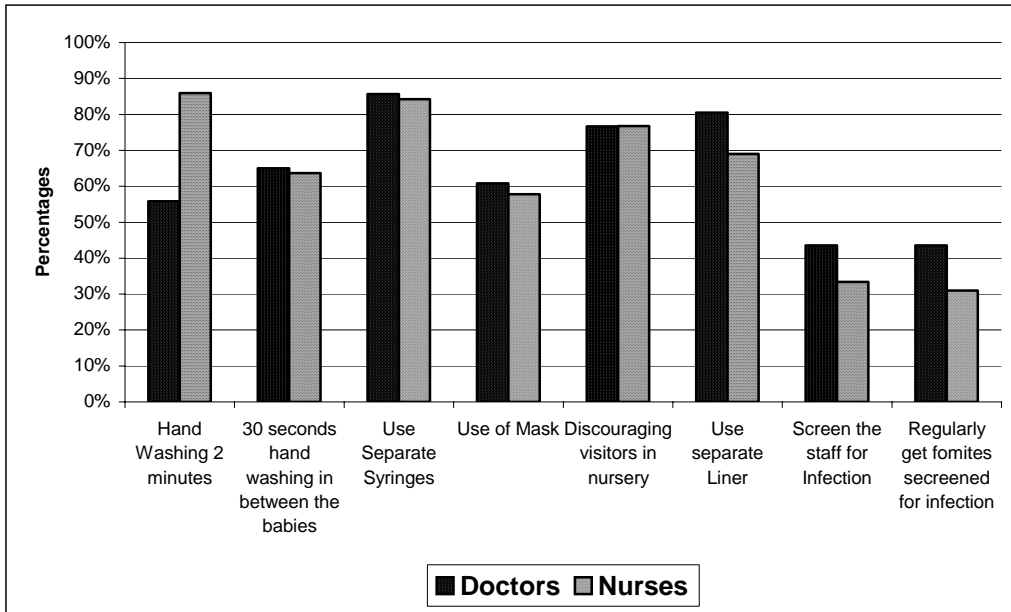


Fig. 27: Prevention of infection

The picture is not much rosy when only 12.7% doctors practised all the eight steps together to prevent newborn infections; 13.2% practised ‘any’ seven and 20.7% practised any six of these. The responses of the nurses to prevent infection in the newborn are similar to doctors. Only 10% said that they used all the seven modalities and 19% said they used at least six of these.

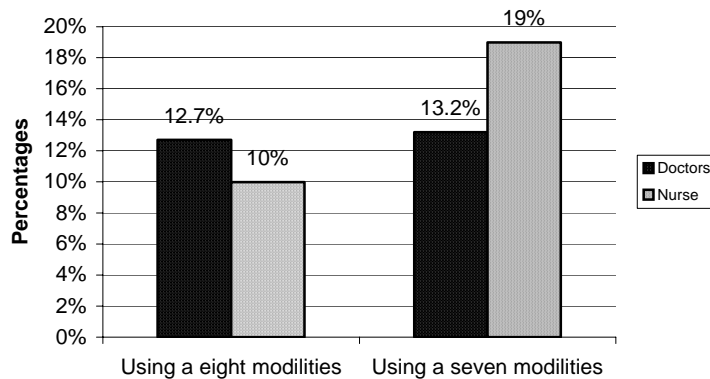


Fig. 28: Prevention of infection

7. Bathing babies

In case of doctors, about 27% in case of normal deliveries and 19% in case of caesarean deliveries; recommended bath immediately or within an hour. In case of low birth weight babies, 7.3% doctors recommended bathing so early. According to nurses, most babies received bath by 48 hours; unfortunately about 25% received bath as early as first hour. Fig .29

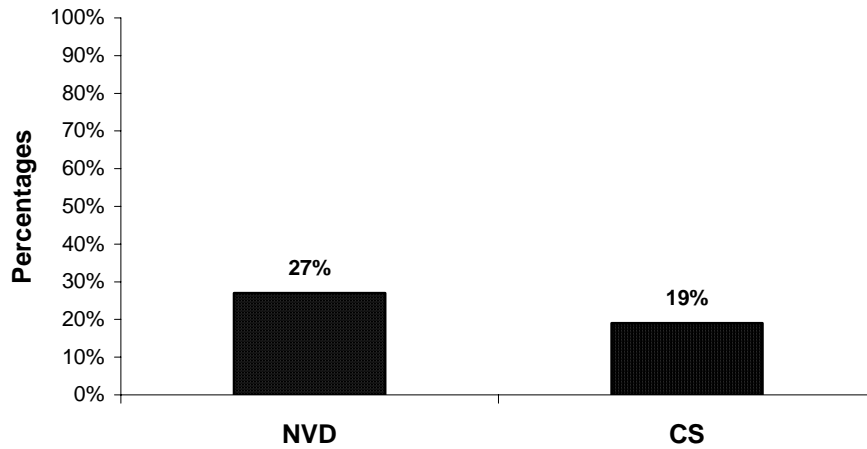


Fig. 29: Bathing babies within one hour

6. Status of Infant Milk Substitutes (IMS), Feeding Bottles (FB) and Infant Food (IF) (Regulation of Production, Supply and Distribution) Act, 1992 (The IMS Act)

Observations from the interviews of all respondents relating to their knowledge about the IMS act and the practices followed in the hospitals are given below.

1. Policy about promotion of breastmilk substitutes, bottles or teats in the hospitals

Only 14.4% of doctors of BF hospitals and 7.1% of doctors of non-BF hospitals were aware about the existence of such a policy.

2. Special displays by the chemists

Out of those 84 chemists who displayed these products/materials, the product most common was baby soap (64.3%) and next were baby foods (48.8%). To a question if the chemists did get a special scheme on sales for display of infant foods and powder milks during last one year, about 10.8% of them said “yes”. (Fig. 30)

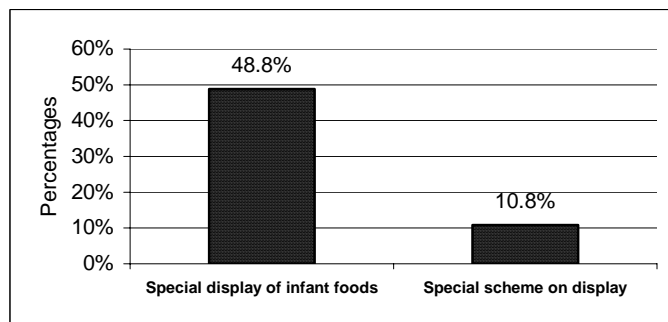


Fig.30: Special display by the chemist

3. Sponsorship of doctors by the manufactures

Among all 600 doctors, 14% were supported by the manufactures/distributors in some or other form during last one year. Sponsorship included seminars, study tours, fellowships, sponsoring clinical meeting of the hospitals or association, or free distribution of books. (Fig. 31)

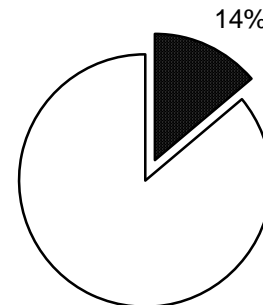


Fig.31: Sponsorship of doctors

4. Knowledge about existence of IMS Act

Only 61.7% doctors, 28.1 % nurses and 25.6% storekeepers had any knowledge about the existence of the law, the IMS Act

Comparison with the past study in 1994

UNICEF conducted a study in 1994 to see that low cost or subsidised supplies are being given or not and studied the breastfeeding practices in about 550 hospitals in 9 states. The study carried some limitations. The data was collected from the doctors and not from the women. However the following table compares some of the breastfeeding indicators between the two time periods that may bring home light of improvement in the situation of breastfeeding .

Indicator	1994 Study	1999 Study BFHI (mothers response)	1999 Study non BFHI	Comment Change positive or negative, or No
Mothers asked to bring infant formula	11%	1.4 %	1.8%	Positive
Prelacteal feeds milk/water	50%	16%	34%	Positive
Babies started to breastfeed in normal deliveries	38%	54%	36%	Positive/No
Supplements of milk given in hospitals	12%	7%	17%	No
Baby's first feed as breastmilk	40%	84%	66%	Positive
Problems during breastfeeding like sore nipples, engorgement	10-20%	13%	12%	No
Infant formula available on discount to those to stock	19%	4%	4%	Positive

The data available from the 1994 study shows that 11% institutions asked the mothers to bring infant formula, the percentage now is about 1.4% in BFHI and 1.8% in non-BFHI. Sixty one percent of study respondents in 1994(health care providers) said that baby was given to mothers in one hour in normal vaginal deliveries. The number was 58% in case of caesarean deliveries (within 3-4 hours). Only 38% in case of normal deliveries said that baby was breastfed within one hour while in the present study there is a shift to early start of breastfeeding as about half of the mothers started breastfeeding within an hour. Supplements of formula was about 12% in the hospitals, prelacteal feeds were 39-41 % in large and small hospitals. In this study supplementary feeds were given to 7-17 % in two types of hospitals. A high percentage experienced breastfeeding problems like sore nipples, and other problems, not much has changed as of now.

Chapter 7

Discussion and conclusions

In the present study our main objective was three folds; to investigate breastfeeding practices in BF and non-BF hospitals and to compare these in two types of hospitals, to find out the status of newborn care in all six hundred hospitals irrespective of their BF or non BF status, and document implementation of and compliance with the IMS Act.

1.Breastfeeding Practices

Here in we like to discuss these findings in light of the “Ten Steps” of successful breastfeeding since this is the basis of BFHI programme. The study also allows us to compare the practices in two types of hospitals. Study findings that have been available from the interviews of women in maternity ward have been considered for analysis. This would allow true and unbiased representation of breastfeeding practices in these hospitals..

Positive changes observed during the study

The data shows that breastfeeding was initiated early and prelacteal feeds were less common in women who delivered in BF hospitals and differences are statistically significant. ($Z = > 1.96$). Similar observations have been recorded from catchment area women. Supplementary feeds like other milk or fluids given to babies during hospital stay were significantly less in BF hospitals in relation to most factors ($Z = > 1.96$). In rural women/ less educated women and working women this difference was not significant. Breastfeeding discussion during antenatal period was also more in BF hospitals and was significant ($Z = > 1.96$) except in rural areas. Training in breastfeeding and lactation management had positive impact over breastfeeding practices.

Findings that do not show significant changes

No significant difference was observed in occurrence of breastfeeding problems between two types of hospitals. Since breastfeeding problems are preventable and women are likely to stop breastfeeding if they face such problems; with the reduction of breastfeeding problems, it is likely that more women would practice exclusive breastfeeding. What is needed is sufficiently skilled staff to counsel women in breastfeeding and solving problems that may arise.

No difference was observed in two types of hospitals in relation to restriction on length of breastfeeding. Unfortunately, restrictions on frequency of breastfeeding were observed in BF hospitals in relation to women coming from non-Hindu family or who were educated higher than graduate. The sample size being too small may not be very conclusive of this. These findings do suggest that staff in BF hospitals need to counsel women sufficiently.

The women in BF hospitals offered pacifiers or dummies less than those in non-BF hospitals but it was not statistically significant. Similar findings were observed in catchment areas. It

was observed that no significant differences were observed in women's plans to breastfeed exclusively for 4 months or more. Women from rural area showed significant difference in this area, it could be explained that rural area still has traditional support from within the family or community as women from rural area also place less restrictions on frequency of breastfeeding and gave less supplements and less pacifiers as well.

Study findings thus imply lack of adequate counselling in the BF hospitals during antenatal, peri-natal or postnatal period to women to adopt these healthy breastfeeding practices. To avoid dummies or pacifiers also requires intensive counselling to bring change.

Effect of training

As we observed in the study that less than half of doctors and less than one third of nurses received "any" training in breastfeeding and lactation management. (44 % doctors and 30 % nurses). Even though the percentage receiving training is inadequate, we could find some and significant impact of present level of training on breastfeeding practices in BF hospitals. It would mean that training policy, content and quality needs a comprehensive review.

An analysis based on "Ten Steps to successful breastfeeding"

In the present study we find that certain steps of the "Ten steps" like *step 3, step 5 and step 10* that require skill, which is dependant on training and time of health care providers, are seemingly more difficult to be in place. These steps in effect demand provision of *antenatal information/counselling, show mothers how to breastfeed and maintain lactation (teaching how to express breastmilk) and setting up a follow up support system*. These steps are crucial to bring long lasting changes and require counselling skills, staff time and knowledge.

Step 4 regarding *early contact* seems quite satisfactory. It requires a close contact with the mother to be able to establish skin-to-skin contact. There is good evidence now available to support *step 7, rooming –in*, which is quite adequate in all types of hospitals in India. *Step 8* that is *demand feeding* is also well positioned and both 7 and 8 are relatively easy to implement and are complementary to each other. These steps need information, knowledge and a strong policy. Global trends also help to establish and strengthen these steps.

Step 6 and step 9 on use of supplements and artificial milks or pacifiers, teats are very closely related. Research evidence shows that breastfeeding is stopped early when these steps are not taken. To implement these steps again health workers need time, skills, and more knowledge, to help mothers effectively. This study shows that these steps have been implemented to bring some improvement in situation but there is potential need to strengthen and multiply the effect of training to be sustainable and long lasting. In one study (Iker & Mogan ,1992) the authors compared the use of bottles; formula and glucose water in a hospital with rooming-in before and after a four-week part-time training programme was implemented. Several training

methods were used but there were no practical sessions. Staff attendance was not compulsory or homogeneous. No significant change was found. The authors concluded that providing information alone was insufficient to effect changes in behaviour. Sloper, McKean & Baum (1975) obtained similar results after a seminar.

Step 1 and Step 2 are about *policy* on implementation of the steps and *training*. With regard to training input, it was noted that only 44 % doctors and 30 % nurses had received “any” training in breastfeeding lactation management for variable length of time in some hospitals. We, therefore conclude that Step 1 and 2 on policy and training to implement all steps should be taken rather seriously to achieve real success. Otherwise weak policies may exist without much happening.

Although it is widely accepted that training is needed, only recently has its effectiveness been assessed. Some studies have shown that for in-service training to be successful, it should be made mandatory, which requires a strong policy supported by senior staff. If training is voluntary and senior staff uncommitted, attendance is likely to be poor, and only those, whose attitude is already favourable and are interested, will participate (Winikoff et al, 1987; Stokamer, 1990; Iker & Mogan, 1992). Evidence is now available to make it clear that health professionals’ knowledge, attitudes and practices are often not supportive of breastfeeding and the need for training them.

Regarding what should be the length of training of hospital staff, the initial progress made at BFHI programme and the National Task Force recommended that minimum length of such training be about 18 hours. Current experience with the BFHI seems to confirm that 18 hours (3 days) is an appropriate minimum length of training, while longer courses (e.g. 5-6 full time days) with daily clinical sessions are desirable. One study (Rea & Venancio, 1998) provides further evidence that the 40-hour *Breastfeeding Counselling: A Training Course* is effective in improving skills of health workers. 60 health professionals (one per health facility) were randomly allocated to an intervention group (n=20) who attended the course, or a control group (n=40). Qualitative and quantitative methods were used to evaluate the impact on participants’ breastfeeding knowledge, skills and attitudes immediately after the course (early post-test) and 3 months later (late post-test). Indicators measuring knowledge, clinical and counselling skills showed a significant increase in the intervention group in the early post-test, which decreased only slightly in the late post-test. The biggest change was observed in the counselling skills: ‘listening and learning’, ‘non-verbal communication’ and ‘building confidence and giving support’.

Training must be compulsory and for all staff including seniors. It should be combined with strong, specific breastfeeding policies to ensure change in hospital practices. Armstrong (1990) described the stages in the process of change based on extensive experience of

conducting courses in Africa. She found that resistance to the adoption of adequate routines, due to natural opposition to change and to personal breastfeeding experience, often develops on the second or third day of training. Absorption of new ideas and active planning for changes occurs more readily after that stage is passed.

It is self-evident that training is necessary for the implementation of a breastfeeding policy. Health workers who have not been trained in breastfeeding management cannot be expected to give mothers effective guidance and provide skilled counselling. It is necessary to increase knowledge, but it is also necessary to increase skills, as the knowledge may not be able to be used to bring a change in practice.

There is also a need to change attitudes, which create barriers to breastfeeding promotion.

The barriers include:

- The assumption that health workers know enough already;
- A belief that there is no important difference between breastfeeding and bottle-feeding;
- A reluctance to allocate staff time to breastfeeding support;
- And a failure to recognise the impact of inconsistent or inaccurate information.

Health workers may undermine mother's confidence, for example by implying criticism, or doubt about a mother's milk supply.

Step 2 of ten Steps in BFHI

"Train all health care staff in skills necessary to implement this policy"

All health care staff that has any contact with mothers, infants and/or children must receive instruction on the implementation of the breastfeeding policy. Training in breastfeeding and lactation management should be given to various types of staff including new employees; it should be at least 18 hours in total minimum of 3 hours of supervised clinical experience and cover at least 8 steps. (The Global Criteria for the WHO/UNICEF Baby Friendly Hospital Initiative, 1992).

Further more in a recent analysis of medical education books (Gupta and Kumar, 1999) it has been found that there are serious deficiencies in the teaching material available to medical students and that cannot prepare these students skilled enough to help mothers to succeed in breastfeeding, These findings further underline the need of in-service training now to create a vast resource and that could provide a sound base for a pre-service programme which of course would have long lasting effects.

Conclusion

In conclusion, training in BFHI programme needs to be strengthened, especially in nurses who are more close to the mothers. The BFHI assessment tools prepared by the task force reflect very clearly the need of such skills and what may be needed is to transform these into serious action.

As BFHI addresses a major factor responsible for decline of breastfeeding, that is health care practice that are detrimental to breastfeeding, the practices should improve to have an impact on breastfeeding prevalence. Promoting breastfeeding only outside the health care facilities will not be successful. A strong link should be established between the health care institution and the community to achieve success in promotion of breastfeeding in the communities to accept breastfeeding is a “*normal* “ way of feeding infants.

The study shows the substantial progress we have made in the area of providing support to mothers during their hospital stay. The need has been identified for practical aspects of breastfeeding and lactation management to be included in basic training of existing staff.

2. Implementation of the IMS Act

The IMS Act aims to protect promote and support breastfeeding in India through education, information appropriate infant feeding and regulate the marketing practice of infant formula companies. From the available data collected over a period of six weeks, it is observed that infant formula companies keep their influence on the health professionals as 14% of doctors

had been supported by them for one or the other purpose. A small percentage chemists receive discounts, it appear to be violating the IMS Act and makes a strong case for strengthening the IMS Act. The findings complement BPNI ongoing observations that IMS Act has been blatantly violated very often and justify systematic monitoring of the IMS Act in all states of India. About 60% doctors ,30 % nurses and only about 25% storekeepers knew about its existence. To conclude, the study underlines the need of a massive campaign to inform each health care worker, and in fact all citizens, about the IMS Act and its provisions.

Conclusion

There is need to inform all concerned about e IMS Act and systematic monitoring the compliance with the IMS Act should become a priority.

3. Newborn Care

The Newborn care findings also assume great significance as good percentage of our babies are born in hospitals in urban area and the number would be increasing in future. As regards simple policy measures like allocating space, availability of linen or other equipment is concerned, it seems catching up and for the area needing attitude change like prevention of infection and hypothermia, more inputs are required.

Prevention of hypothermia

Regarding prevention of hypothermia, 570/600 (95%) doctors used warm linen to receive the baby, 91% used a source of warmth, 83% dried the baby immediately, 80% removed wet linen, and 69.5% responded that they maintain appropriate temperature of labour room. Only 37.3% used to keep babies with the mothers to use this as a modality to prevent hypothermia. While these look good and effective steps individually, the picture is not much rosy as only 51% of all doctors practised all the six modalities. There is a vast potential of improvement in this area, which is so crucial to newborn survival.

Prevention of Infection

It carries a high risk of infection to newborns if the health workers do not wash their hands adequately. To look at the prevention of infection, it was noted that only 55% doctors used hand washing for 2 minutes and 65% used 30 seconds hand washing in between seeing babies. While percentage of using separate syringes is high (57.1%); use of mask (60.8%); discouraging visitors (76.7%) using separate linen (80.5%) screening staff for infection was just 43.5%. The situation is gloomy as only 12.7% practised all the eight steps to prevent infections; 13.2% ‘any’ seven and 20.7% used ‘any’ six of these. The responses of the nurses is almost similar as 10% said that they used all the seven modalities and 19% said they used at least six of these.

Conclusions

The easy to change – allocation of space, having linen etc. have been adopted but more crucial practices needing skilled technical input and training need more attention from policy and programme. The study findings highlight the need for intensive training in practical aspects of newborn care for all health professional including nurses. The study draws our attention to review the training policy in newborn care. It could be made more effective through clinical practice.

Key findings, which would form the basis of our recommendations and future action, are,

1.Breastfeeding practices

1. Currently only less than half of health care staff received “some” or ”any” training in breastfeeding and lactation management during their hospital work. That means support to women during breastfeeding problems is inadequate.
2. Supplementary feed usage is quite significant in the hospitals.
3. Women do not plan for optimum length/duration of exclusive breastfeeding.
4. Present level of training has made significant impact on some breastfeeding practices.
5. There has been a positive change in some of the ten steps that are dependant on information and not on that dependant on staff time and skills.

2.Newborn Care

6. Newborn care is inadequate in terms of prevention of infection and hypothermia.

3.IMS Act

7. Information about the IMS Act and its provisions to doctors, nurses and chemists or storekeepers is inadequate.
8. The manufactures provide assistance to about 14% doctors in these hospitals.

Recommendations and follow up actions

Recognising that BFHI is a well-conceptualised programme and is plenty in demand, and a potentially useful intervention to support women to be successful in breastfeeding,

BPNI recommends

For BFHI

1. BFHI program policy should be reviewed in the light of current evidence on all the “Ten Steps”. Monitoring and evaluation of BFHI programme should be integral part of the implementation of BFHI programme.
2. Training under BFHI programme should be consistent and quality oriented and to implement “Ten steps” in all and there should be a minimum of 18 hours for key personnel of the health care institutions.
3. The training needs of country as big as India could be solved if steps in this direction are taken to develop a team of trainers for each state to complement the efforts of National and State Task Forces and NGOs. Efforts made by China in this regard are worth taking a note of.

For IMS Act

4. Information about the IMS Act and its provisions should be widely disseminated to all health and community workers
5. IMS Act should be suitably amended to strengthen the sections 3 and 9 to include infant foods under section 3 a and strengthen section 9 to avoid any inducements to health workers.

For Newborn Care

6. Newborn care findings should be shared with National Neonatology Forum and Indian Academy of Paediatrics, National training institutes, policy makers, planners/managers of the child health and nutrition programmes to review and lay more emphasis on clinical and hospital based training.

General

7. The report should be published and widely circulated to governmental and non-governmental national and international agencies.
8. A journal piece should be developed to publish in an academic journal.
9. Further studies to analyse the knowledge of mothers on maintenance and initiation of exclusive breastfeeding and positive deviance should be conducted, as to what would help them continue exclusive breastfeeding for a longer period.

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