ORIGINAL ARTICLE

# Effects of baby-friendly hospital initiative on breast-feeding practices in Sindh

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## Abstract

**Objective:** To determine changes in the breastfeeding practices of mothers after receiving counseling on 'Ten Steps to Successful Breastfeeding' as defined by the Baby Friendly Hospital Initiative comparing baby friendly hospitals (BFHs) and non-baby-friendly hospitals in Sindh, Pakistan.

**Methods:** The observational study was conducted from June 2007 to June 2009 in randomly selected baby-friendly and non-baby-friendly hospitals of Sindh, Pakistan. Non-probability purposive sampling was employed. The maternity staff was trained on 'Ten Steps to Successful Breastfeeding.' The changes in breastfeeding practices were analysed by SPSS version 15.

**Results:** A total of 236 women were included in the study. Of them, 196 (83.05%) were from baby-friendly hospitals and 40 (16.94%) from non-baby-friendly hospitals. Besides, 174 (88.7%) mothers in baby-friendly hospitals and 5 (12.5%) in non-baby-friendly hospitals during antenatal care received counseling by healthcare providers. There was an increase in breastfeeding practice up to 194 (98.97%) in the first category compared to 12 (30%) in the other category.

**Conclusion:** Counseling under the Baby Friendly Hospital Initiative improved breastfeeding practices up to 98.97% in baby-friendly compared to non-baby-friendly hospitals.

**Keywords:** Baby-friendly hospitals, Non-baby friendly hospitals, Breastfeeding, Knowledge, Practices. (JPMA 63: 756; 2013)

## Introduction

The joint programme of the United Nations Informational Children's Education Fund (UNICEF) and the World Health Organization (WHO), the Baby Friendly Hospital Initiative (BFHI) has identified 10 steps to promote, protect and establish breastfeeding in the maternity and paediatric hospitals worldwide. The internationally defined term 'Baby-Friendly' is used only by maternity services that have passed external assessment according to the Global Criteria for the BFHI. Since infant mortality in Pakistan is very high, the BFHI was started in 1992. The BFHI in Sindh provided training to 10,500 healthcare providers over 10 years. The BFHI in Sindh has been a role model programme. In Pakistan, out of 75 baby-friendly hospitals (BFH) 53 are in Sindh. Since 1992, BFHI was implemented through assessments of hospitals by WHO/UNICEF questionnaire on 'Ten Steps to Successful Breastfeeding.' The BFHs were given the status based on training of staff on curriculum of breastfeeding practices and policies. The assessments of hospitals were held in Sindh based on tools of assessment and re-assessment of WHO and UNICEF.[1] It was recommended that BFHs shall enforce maintenance of adherence to the criteria of the 10 BFHI steps.[2,3] BFHs were re-assessed after 3 years for the adherence to the 10 steps in 10 years repeatedly. The training was provided at three levels: Level I for faculty/gynecologists/Obstetricians/consultant; Level II for residents/house officers and physicians; and level III for paramedical staff, including maid-servants, cleaners etc.

Several studies have shown that breastfeeding education was effective in increasing the breastfeeding duration and knowledge. China has more than 6,000 BFHs, and the impact on exclusive breastfeeding in rural community increased from 29 per cent to 68 per cent and from 10 per cent to 48 per cent in two years.[4,5]

Pakistan has been ranked worldwide as developing, poor-resource country where maternal and infant mortality and morbidity have not been reduced at the required rate to achieve millennium development goals (MDGs) 4 and 5 till 2015. Since Pakistan has been the signatory to MDGs, therefore the BFHI, which was implemented two decades back, should be re-visited. Several studies in more than 153 countries have proven that antenatal counseling has a pivotal role in reducing infant mortality and morbidity.

This study aimed at determining changes in the breastfeeding practices of mothers after receiving counseling on '10 Steps to Successful Breastfeeding' as defined by the BFHI, comparing BFH and non-BHF (NBFH) in Sindh, Pakistan.

## Subjects and Methods

The observational study was conducted from June 2007 to June 2009 and comprised randomly-selected BFHs and NBFHs in Sindh. The NBFHs included were under the process of training for BFHI.

The hospitals selected were in the basis of non-probability

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purposive sampling. The sample size was calculated at 83.9% breastfeeding proportion from the experimental group in a study.[6] The total sample size came out to be 236 with an addition of margin of error and exclusion.

Mothers qualified for interview had antenatal counseling at least three times in the same BFH. During these three visits, information and skills were provided to mothers seeking care for their pregnancy. In each visit, about 10-15 minutes, mothers were counseled for optimum breastfeeding practices. The exclusion criteria were mothers with medical and obstetric complications and those not consenting for an interview.

A written informed consent was taken from the mothers. A written consent was also obtained from the head of the institute, department head and staff working for lactation management.

WHO/UNICEF questionnaire was used to assess the BFH for 10 points after the declaration as BFH by the Provincial Breastfeeding Steering Committee in Sindh. The trainings were provided initially in tertiary care public and private hospitals of major urban city (Karachi, Hyderabad, and Sukkur) to train level I maternity staff. The faculty members/consultants/supervisors were trained as top-down approach by the UNICEF. The BFHI criteria trains at least 80% of the total staff in all shifts of hospitals dealing with maternal and child healthcare. Initially, in the Lactation Management Programme, Sindh, the BFH declaration was provided in both public and private hospitals. The hospitals included were according to the sequence levels I, II, III. Therefore, major tertiary care teaching hospitals, district hospitals and maternal child health centres were the order of training. After training at all the three levels, services were provided in the BFHs. The effect of BFHI on breastfeeding practices was determined by interviewing mothers in the BFHs and NBFHs.

Maternal interviews were analysed to determine the effects after training on 10 steps to successful breastfeeding and change in the infant breastfeeding proportion as primary outcomes of the study.

The impact of training on optimum breastfeeding were assessed by the WHO/UNICEF validated questionnaire used universally to declare a hospital as baby-friendly. Mothers in BFHs and NBFHs were asked regarding their current practices on breastfeeding. The data was analysed using SPSS version 15.

## Results

Of the 236 women in the study, 196 (83.05%) respondents were from BFHs and 40 (17%) from NBFHs. The demographic data was noted down (Table-1). During antenatal care, 211(89.40%) in BFH and 5 (12.5%) in NBFH mothers received counseling by healthcare providers. In BFH, 189 (96.4%) and in NBFH 1 (2.5%) listed more than two benefits of breastfeeding. Besides, 165 (94.5%) mothers were given help by healthcare providers in BFHs and 5(12.5%) in NBFH were helped by family members. The skill development for position and attachment was 187 (95.4%) in BFHs and 32 (80%) in NBFHs. Importance of rooming-in was known by 187 (95.2%) in BFHs and 3 (7.5 %) in NBFHs. The importance of demand feeding was 194(98.97%) in BFH compared to 12 (30%) in NBFH (Table-2). The skill development in breastfeeding practices was 188(95.9%) in BFHs, and 14(3.5%) in NBFHs. The group talk about infant-feeding formula was not discussed in 178(90.08%) in BFH and 14 (35%) in NBFH. There was an increase in the breastfeeding practice up to 194 (98.97 %) in BFHs compared to 12 (30 %) in NBFHs.

Table-1: Characteristics of mothers attending antenatal clinics at baby friendly and non-baby friendly hospitals in Sindh province (n = 236).

| S.No | Characteristics of study population | Frequency (n) | Percentage (%) |
|---|---|---|---|
| 1 | **Maternal age (years) Mean±SD** | | |
| | 25 ± 5.5 | | |
| | 1. ≤ 20 years | 25 | 10.59 |
| | 2. 20-29 years | 118 | 50 |
| | 3. 30-39 years | 59 | 25 |
| | 4. ≥ 40 | 34 | 14.41 |
| 2 | **Parity** | | |
| | Primipara | 79 | 33.47 |
| | Multiparity | 157 | 66.53 |
| 3 | **Birth weight (gms) Mean±SD** | | |
| | 2900± 150 | | |
| | < 2500 gms | 29 | 12.28 |
| | 2500 gms | 144 | 61.02 |
| | > 3500 gms | 63 | 26.7 |
| 4 | **Respondents belonged to type of Health Facility based on area facility** | | |
| | Urban | 196 | 83.05 |
| | Rural | 40 | 16.94 |
| 5 | **Family Income** | | |
| | < 100US$ per month | 63 | 26.7 |
| | > 100US$ per month | 173 | 73.3 |
| 6 | **Maternal Education** | | |
| | Cannot read and write | 79 | 33.47 |
| | Can read and write | 29 | 12.28 |
| | Primary | 25 | 10.6 |
| | Secondary | 19 | 8.05 |
| | Home based vocational training | 84 | 35.6 |
| 7 | **Mode of delivery** | | |
| | Spontaneous vaginal delivery | 159 | 67.38 |
| | Forceps vaginal delivery | 23 | 9.74 |
| | Caesarean section | 54 | 22.88 |

Table-2: Effect of baby-friendly hospital initiative on breast-feeding practices in Sindh (n= 236).

| S.No | The Ten Steps to Successful Breastfeeding | BFH n=196 | | NBFH n= 40 | | p-value |
|---|---|---|---|---|---|---|
| | | n | % | n | % | |
| 1 | Mothers aware of breastfeeding policy in hospitals where they seek antenatal care | 186 | 94.9 | 10 | 25 | < 0.0001 |
| 2 | Train all health care staff in the skills necessary to implement policy | 176 | 89.79 | 12 | 30 | < 0.0001 |
| 3 | Inform all pregnant women about the benefits and management of breastfeeding | 175 | 89.40 | 5 | 12.5 | < 0.0001 |
| 4 | Help mothers initiate breastfeeding soon after birth | 185 | 94.5 | 10 | 25 | < 0.0001 |
| 5 | Show mothers how to breastfeed and how to maintain lactation if they are separated from their infants | 187 | 95.40 | 32 | 80 | < 0.0001 |
| 6 | Give newborn infants no food or drink other than breast milk unless medically indicated | 186 | 95 | 25 | 62.5 | < 0.0001 |
| 7 | Practice rooming-in and allow mothers and infants to stay together 24 hours a day | 187 | 95.40 | 3 | 7.5 | < 0.0001 |
| 8 | Encourage breastfeeding on demand | 194 | 98.97 | 12 | 30 | < 0.0001 |
| 9 | Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants | 194 | 95.40 | 27 | 69 | < 0.0001 |
| 10 | Foster the establishment of breastfeeding support groups and refer others to them on discharge from the hospital or clinic | 178 | 90.08 | 14 | 35 | < 0.0001 |

*The baby friendly health facility passed each step at least at $\geq$ 80% level.

## Discussion

There has been strong evidence that BFHI improves maternal health, increases breastfeeding rates, reduces maternal and infant morbidity and provides standard of care at healthcare facilities.[5] The objective of the study was to evaluate implementation of the '10 Steps to Successful Breastfeeding;[7,8] enforced by BFHI in 53 certified BFHs of Sindh. The interviews from BFHs and the NBFHs were compared to determine the effects on breastfeeding practices in the province.

Several studies have analysed maternal WHO/UNICEF questionnaires and found a positive effect of BFH practice on a number of steps in BFHI. The parametres evaluated were early initiation of breastfeeding within an hour of delivery in the hospital, increased rate of in-hospital exclusive breastfeeding, predominant feeding, maternal skills of position and attachment in BFHs and NBFHs.[9-11]

A study reported that mothers appreciated changes like rooming-in, breastfeeding on baby's demand, and taking care of their babies by themselves.[12] It was also observed that women in BFHs were not using bottles and dummies.[13]

Children born in a baby-friendly health facility are more likely to be breastfed for a longer time in the BFHs. Breastfeeding prevalence and duration in Switzerland have improved in the past 10 years.[14] Therefore, a continuous monitoring process to promote the activities of the BFHI is indicated in Pakistan. The implementation of 10 successful steps is indicated in developing and non-achiever countries of MDGs by 2015 to improve maternal health and reduce perinatal mortality. In Pakistan, poverty and illiteracy are common and mothers require counseling during antenatal care for improving optimum breastfeeding practices. Studies have shown that the effect of staying away from bottle feeding is very high due to proper delivery of information to mothers and implementation of 10 steps in BFHs through trained healthcare providers at levels I, II and III.

A study has shown that there has been a serious discrepancy between the goals of the BFHI and its effect.[15] Some studies reported that mothers and their babies have not been properly counseled and guided for bottle feeding in developed countries. The problem in the developed society was mothers opting for bottle feeding as an informed choice. Another reason was the lack of information on formula feeding since manufacturers' representatives have not been allowed to meet with clinical midwives for details of the infant formula.[15] This has been consistent with our study that the group talk about infant-feeding formula was not discussed in 98.7% cases.

Another study explored that motivated staff, educational support and clear guidelines are essential to support implementation of the BFHI, particularly in Nursery Intensive Care Units of a BFH.[16] These factors are consistent with our study. The analysis in this study found that motivation of staff by senior healthcare provider (HCP) and with the incentives and training certificates the HCP (consultants, residents and paramedics including nurses, midwives and ayahs) helped mothers to implement 10 steps towards optimum breastfeeding practices.

One study has shown only 16% initiation rate of breastfeeding within an hour after birth in Brazil.[17] Breastfeeding within one hour after birth was constrained by inappropriate institutional practice. In our study the initiation rate of breastfeeding within an hour was 94.5% in BFH and 25% in NBFH. This shows that early initiation in institutional setting with trained staff has maximum and beneficial effect on breastfeeding practices The early initiation within an hour of delivery leads to longer duration of breastfeeding after discharge from hospitals. The continuation of exclusive breastfeeding in this study was 96% in BFHs.

In Russian healthcare system, the maternal support of breastfeeding practices through BFHI require information, health education materials and training.[18] In our study, 185 (94.5%) HCP in urban BFH helped mothers for breastfeeding practices, while only 10 (25%) mothers received family members' support for optimum breastfeeding practices in rural NBFH.

A study reported an analysis of hospital breastfeeding policies over 15 years in Philadelphia showed increased awareness about breastfeeding and enhanced support of breastfeeding by HCPs through 67% trained staff.[19] In Sindh, 10 years, 53 hospitals have been declared BFHs, and Sukker city as the first baby-friendly city in Asia with the training of 176 (89.76%) in urban and 12 (30%) rural HCPs of BFH.

Another study from Spain on compliance of BFHI reported a quality-improvement in breastfeeding rates over 8 years. It suggested that it was imperative for all nurses to possess an evidence-based core knowledge regarding breastfeeding and the use of human milk.[20] In our study, BFHs had significant improvement in hospital breastfeeding rates. The compliance of initiative compared to NBFHs in Sindh was 96-98% in BFHs. Several evidences from developed and developing countries indicate that the BFHI has had a direct impact on breastfeeding practices. Babies born in a baby-friendly health facility are breastfed for a longer time in hospital with high compliance with UNICEF guidelines. Therefore, the BFHI should be implemented to promote the full effect of the BFHI. This study shows that the implementation of the international BFHI is associated with statistically significant and improved changes in the '10 steps to successful breastfeeding' of all births that occur in baby-friendly facilities.

## Conclusion

Counseling under the Baby Friendly Hospital Initiative improved breastfeeding practices up to 98.97% in BFHs compared to NBFHs.

## Acknowledgements

We are grateful to the joint programme of Lactation Management, Government of Sindh, funded by UNICEF, Pakistan.

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