

# The Breastfeeding Support and Promotion in Baby-Friendly Maternity Hospitals and Not-as-Yet Baby-Friendly Hospitals in Russia

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## ABSTRACT

**Objective:** The objective was to evaluate implementation of the WHO/UNICEF “Ten Steps to Successful Breastfeeding” as defined by the Baby-Friendly Hospital Initiative in eight maternity hospitals in the Moscow region. Four maternity hospitals had been certified Baby-Friendly Hospitals (BFHs), the experimental group; and four maternity hospitals Not-as-Yet Baby Friendly, the control group (NBFHs).

**Methods:** Maternal interviews and infant breastfeeding rates were the primary outcomes of the study. In total, 741 healthy postpartum women from the experimental and control group were interviewed: 383 and 358, respectively. Interviews were conducted over 5 months, from May to July 2004. In addition, an assessment of levels and trends in breastfeeding for the period of 1998 to 2003 was made for the area served by the BFHs and the NBFHs.

**Findings:** Analyses of the questionnaires completed by the mothers found a positive effect of BFH practice on a number of parameters, such as an increased rate of in-hospital exclusive breastfeeding, mothers’ decisions concerning planned duration of breastfeeding, mothers’ and babies’ health, and maternal knowledge about the necessary measures in BFHs. Mothers appreciated baby-friendly changes, such as rooming-in, breastfeeding on baby’s demand, and taking care of their babies by themselves.

The successful initiation of breastfeeding in the BFHs was shown to favor the promotion of breastfeeding among 1-year-old babies in the experimental areas. However, there were some shortcomings in the BFHs: frequent use of labor anesthesia; insufficient placing of newborns on the mother’s abdomen, rooming-in, and initiating breastfeeding immediately; and a short length of “skin-to-skin” contact (<30 minutes). The women in BFHs also observed the use of feeding bottles and dummies, and experienced some problems with breast health.

**Conclusions:** BFH practices can increase breastfeeding rates as well as maternal satisfaction. However, shortcomings in the training and support for mothers, and limited help of the medical personnel were noted. It is recommended that BFHs pay attention to maintaining adherence to the criteria of the 10 steps of the Baby-Friendly Hospital Initiative. Since 2003 to control the implementation of the Baby Friendly Initiative principles and sustain the progress in the hospitals designated as Baby Friendly reassessment of maternity hospitals is held in Russia in conformity with the requirements of WHO and UNICEF.

## INTRODUCTION

**T**HE WHO/UNICEF BABY-FRIENDLY HOSPITAL INITIATIVE (BFHI) has been promoted in the Russian Federation since 1996. The main principles of the Initiative are stated in WHO and UNICEF papers: *Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services* (1989), *Global Strategy for Infant and Young Child Feeding*, *Infant and Young Child Feeding: A Tool for Assessing National Practices, Policies and Programmes* and in the revised BFHI materials.<sup>1-3</sup> The Breastfeeding Support Center of the Ministry of Health and Social Development of the Russian Federation coordinates the work of implementing the Ten Steps of the Initiative into the practice of maternity hospitals. The Center works in close collaboration with the UNICEF Office in the Russian Federation. National specially trained experts evaluate and designate hospitals as "Baby-Friendly Hospitals" (BFHs). As of October 1, 2005, 208 maternity hospitals (wards) had been awarded BFH designation. The number of deliveries assisted annually in these maternity facilities varies from 100 in the rural areas to about 5000 deliveries in larger cities. The number of deliveries that occur in the BFHs is about 16% of all births in Russia.

The maternity hospital of Electrostal (Moscow Region) was the first maternity hospital in Russia to receive BFH designation in 1996. In total, there are 52 maternal facilities in the Moscow Region (MR). Since 1996, four have been designated BFHs. Annually these four BFHs assist in 5660 deliveries, or 10.5% of all deliveries in the Moscow Region (MR).

The MR is located in the central part of Russia. It is a fairly successful region as far as social status and the quality of medical services are concerned. The infant mortality rate in the MR is lower than average for Russia. In 2003 the infant mortality rate in the MR was 11.8 per 1000 infants, compared with 12.4 per 1000 in the Russian Federation as a whole.

The assessment of the impact of the implementation of the Baby-Friendly Hospital Initiative into the practice of hospitals is of great interest. Some investigations show a long-term influence of the BFH Initiative on the duration

of breastfeeding and the state of babies' and mothers' health<sup>4-8</sup> in addition to the immediate impact on breastfeeding initiation. However, the evaluation of women's experiences and satisfaction with this approach is also very important. Such studies were completed in Norway and Russia in 2000 and 2002 in the framework of the joint Russian-Norwegian project "Voices of Women in the Barents Region."<sup>9,10</sup> The results showed improvements in several indicators of breastfeeding practice associated with BFHs designation. However, it was also shown that the BFH status did not guarantee sustained high level of standards of practice. Work to maintain the principles of this initiative must continue over time.

The objective of this study was to assess women's perceptions of the quality of medical services in the BFHs as well as to assess the breastfeeding practices and trends in the areas with and without BFHs.

## MATERIALS AND METHODS

This study was carried out in eight maternity hospitals in the Moscow Region: four maternity hospitals with Baby-Friendly status (BFHs), the experimental group; and four maternity hospitals Not-as-Yet-Baby-Friendly (NBFHs), the control group. The maternity hospitals of the control group are similar to the maternity hospitals of the experimental group and have the same indices of quality of the obstetrical services, the same number of deliveries, and comparable levels of participation.

Mothers' assessment of the medical services was conducted using a questionnaire. The questionnaire included 76 questions that were divided into six main units: general information about the mother, antenatal preparation for breastfeeding, delivery data, breastfeeding practices, mothers' and babies' health status, and the mother's attitude toward the new practices to protect and support breastfeeding in the maternity hospital. Health status was assessed by the mother. Maternal depression was assessed using a scale of depression adapted by T.I. Balashova,<sup>11</sup> and recommended for use in screening for very mild, moderate or severe forms of depression.

The senior midwife was responsible for interviewing women in the maternity hospital. All the senior midwives of the eight maternity hospitals were trained in selection and questionnaire administration techniques. They also helped mothers to complete the questionnaire, as necessary. The questionnaire was completed at discharge. One hundred consecutive women who met eligibility requirements were identified from each facility. Inclusion criteria included: no maternal illness, infant Apgar scores  $\geq 7$ , and birthweight  $\geq 2500$  g. Mothers were asked to complete the form anonymously, seal it in an unmarked envelope, and pass it to the midwife or put it into a special box. Completion and submission of the form was considered consent to participate. Altogether 383/400 forms were submitted in the BFHs (the experimental group) and 358/400 forms were submitted in the NBFHs (the control group). A general description of the maternity hospitals, including numbers of annual deliveries, BFH date of designation, and the number of questioned women is presented in Table 1. Data collection was completed from May to July 2004.

An assessment of the levels and trends in breastfeeding for the period 1999 to 2003 for the experimental and control areas was carried out using data from the official statistics of the Ministry of Health and Social Development of the Russian Federation. Children's outpatient poly-

clinics are responsible for the annual collection of breastfeeding data in Russia among mothers of 1-year-old children.

The statistical analysis of the questionnaire data was completed using SPSS 10.0 program for Windows.<sup>12</sup> Normality of the characteristic distribution was determined using the Kolmogorov-Smirnov test. Descriptive statistics are presented. The Student Independent Samples *t*-test was used for the comparison of the means.

## RESULTS

The mothers who completed the questionnaire in the BFHs and NBFHs did not differ significantly in most characteristics (Table 2). The average age was 25.9 versus 25.7 years ( $p > 0.05$ ), respectively. Most mothers had secondary or higher education (11 years and more; 91.1% versus 94.1%). About one-third of mothers had 16 to 17 years of education (32.1% versus 35.7%). More than 70% of women were married, 16% to 18% had partners, and 8% to 9% were unmarried. More than half of all women were primiparas (62.5% versus 67.3%). The average number of children in the families of both groups was 1.4 and there was no statistical difference in the sex of the infants. Only one characteristic of significance was found:

TABLE 1. GENERAL CHARACTERISTICS OF MATERNITY HOSPITALS

	<i>Total number of births in 2003</i>	<i>Baby-friendly status</i>	<i>Number of respondents</i>
Maternity hospital No. 1	1450	BFH since 1996	98
Maternity hospital No. 2	1887	BFH since 2001	93
Maternity hospital No. 3	504	BFH since 2001	98
Maternity hospital No. 4	1822	BFH since 2002	94
Total	5663		383
Maternity hospital No. 5	958	NBFH	96
Maternity hospital No. 6	1056	NBFH	92
Maternity hospital No. 7	1277	NBFH	92
Maternity hospital No. 8	2726	NBFH	78
Total	6017		358

TABLE 2. GENERAL CHARACTERISTIC OF RESPONDENTS OF EXPERIMENTAL AND CONTROL GROUPS

	<i>BFHs</i>	<i>NBFHs</i>
Age (years)		
Mean	25.9	25.7
SEM	0.27	0.27
Education (%):		
Unfinished secondary education (<11 years)	8.9	5.9
Secondary (11 year)	14.4	18.8
Vocational technical education (14–15 years)	44.6	39.6
Higher education (16–17 years)	32.1	35.7
Family status (%):		
Married	74.2	73.6
Marriage is not registered	16.4	18.0
Single	9.4	8.4
Number of children in the family:		
Mean	1.4	1.4
Std. Error of Mean SEM	0.03	0.04
Family's income per capital (%)		
Less than living wage	46.0	28.2
Number of women delivering for the first time (%)	62.5	67.3
Sex of a newborns (%)		
Male babies	54.4	51.5
Female babies	45.6	48.5
Number of women breastfeeding in the maternity hospital (%)	100.0	100.0
Total number of women took part in the questioning, <i>n</i>	383	358

The women of the NBFHs group had higher income levels (28.2% versus 46.0%), with incomes below the living wage. All of the respondents breastfed their babies during their stay in the maternity hospital.

Table 3 presents the findings from the questionnaires. There was no statistical difference in weeks of gestation at registration for antenatal care (10.4 versus 11.3 weeks). The number of caesarian sections was 14.7% in the BFHs

and 16.2% in the NBFHs. Maternal anesthesia for delivery was commonly used in both BFHs and NBFHs (62.3% and 54.6%). The duration of stay in the hospital was similar for both groups (5.0 versus 5.2 days).

Differences in breastfeeding practices were found between the BFHs and the NBFHs. In the BFHs more women attended antenatal breastfeeding education sessions: 44.9% versus 31.5% in maternity consultations and 35.8% versus

TABLE 3. RESULTS OF INTERVIEWING IN THE EXPERIMENTAL AND CONTROL GROUPS

	<i>BFHs</i>	<i>NBFHs</i>
Antenatal training (predelivery breastfeeding training)		
Registration in a maternity advice bureau (term of pregnancy in weeks)		
Mean	10.4	11.3
Std. Error of Mean SEM	0.30	0.46
Breastfeeding training (%)		
In a maternity advice bureau	44.9	31.5
In a maternity hospital	35.8	10.4
General information about deliveries		
Caesarian section (%)	14.7	16.2
Anaesthetization of deliveries (%)	62.3	54.6
Laying of a newborn on mother's abdomen (%)	73.4	57.6
More than 30 min. skin-to-skin contact (%)	34.0	1.7
Staying with babies in the delivery room and breastfeeding (%)	63.1	39.7
Period of stay in the maternity hospital (days)		
Mean	5.0	5.2
Std. Error of Mean SEM	0.12	0.11

TABLE 3. RESULTS OF INTERVIEWING IN THE EXPERIMENTAL AND CONTROL GROUPS (CONT'D)

	BFHs	NBFHs
Breastfeeding		
Rooming-in (%)	93.4	51.5
The first breastfeeding (hours)		
Median (Me) percentiles	2.0	12.0
25%	2.0	6.0
75%	6.0	24.0
Help of medical personnel to attach the baby to breast (%)	93.0	75.5
The day "milk came"		
Mean	2.9**	3.2
Std. Error of Mean SEM	0.49	0.06
Does baby receive enough milk? (%)		
Yes	74.0	50.3
No	5.9	13.3
I don't know	20.1	36.4
Baby received artificial feed or drink in a bottle (%):		
Yes	7.4	58.0
No (Exclusive breastfeeding rate)	88.9	32.6
I don't know	3.7	9.4
Use of dummies (%):		
Yes	4.0	18.1
No	93.5	57.1
I don't know	2.4	24.8
State of breasts during the stay in the maternity hospitals (%):		
No problems	57.8	44.7
Nipple pain during breastfeeding	21.9	32.0
Cracks in/of the nipples	15.6	12.1
Breast Engorgement	4.7	11.0
Mastitis	0	0.3
Mother's attitude toward breastfeeding (%)		
"I will surely breastfeed"	95.1	89.9
"I will breastfeed if I can"	4.9	9.2
"I'll use artificial feeding"	0	0.8
Planned length of breastfeeding (months)		
Mean	12.3*	11.4
Std. Error of Mean SEM	0.32	0.32
Health status of mother and baby in the maternity hospital		
Healthy baby (%)	91.2	93.7
Healthy mother (%)	93.8	90.3
Baby's weight at birth (gr.)		
Mean	3427.0	3364.0
Std. Error of Mean SEM	26.3	29.1
Baby's weight at discharge (gr.)		
Mean	3361.6	3262.2
Std. Error of Mean SEM	26.0	28.8
Weight loss of a baby at the discharge (%)		
Mean	-1.3***	-3.0
Std. Error of Mean SEM	0.22	0.24
Depression (%)		
Slight depression of situational or neurotic type	2.3	2.3
Sub-depression	0.4	0.6
Real depression	0	0
Women's attitude toward a new practice in the maternity hospital		
"I consider it important and very important" (%)	94.0	89.3
Early attachment to breast	95.3	77.3
Rooming-in	95.3	87.1
Feeding on demand	95.5	82.5
Possibility of taking care of their babies themselves	98.2	96.6
Help in breastfeeding	81.2	79.5
Possibility to apply for help after discharge	58.0	60.5
Creation of mother support groups		

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



10.4% in maternity hospitals. In BFHs babies were laid on the mother's abdomen more often than in NBFHs (73.4% versus 57.6%), skin to skin contact lasted at least 30 minutes (34.0% versus 1.7%), and mothers and babies roomed-in (93.4% versus 51.5%). In the BFHs, the median time for initiation of breastfeeding was in the first 2 hours after delivery; in the NBFHs the median was within the first 12 hours, and 25% did not initiate breastfeeding within the first 24 hours after delivery. The medical staff of BFHs helped women breastfeed more often than in NBFHs (93% versus 75.5%); in BFHs newborns were less likely to receive artificial feeding and a bottle (7.4% versus 58.0%), and dummies were not used as often (4.0% versus 18.1%). In NBFHs fewer women knew whether or not staff had given artificial feeds or bottles to their babies (9.4% versus 3.7%), or whether dummies were used (24.8% versus 2.4%). An important outcome is that 88.9% of babies in BFHs and only 32.6% in NBFHs received breastfeeding only (exclusive breastfeeding) from birth until discharge.

Women from BFHs noted that lactation proceeded better, in comparison with those from NBFHs. Milk appeared on the day 2.9 versus 3.2 ( $p < 0.01$ ). The majority of the women from BFHs reported that they had enough milk for their babies (74.0% versus 50.3%) and a smaller proportion did not know whether they had enough milk (20.1% versus 36.4%).

In BFHs there were fewer breast problems, such as nipple pain during breastfeeding (21.9% versus 32.0%) and breast engorgement (4.7% versus 11.0%). Nevertheless, almost half of the women in both experimental and control groups reported some breast problems.

Most of the women in BFHs and NBFHs wished to breastfeed their babies after discharge. They said, "I will surely breastfeed my baby" (95.1% to 89.9%) and, "I will breastfeed if I can" (4.9% to 9.2%), and only 0.8% of women from NBFHs planned to give their babies artificial feeding. The planned length of breastfeeding was 11.4 months in the control group, but it was longer among the women in the BFHs: 12.3 months ( $p < 0.05$ ).

No significant differences were seen in the reported health status of the respondents and their babies, with >90% in both groups re-

porting good health. Depression was diagnosed by screening as 2.3% in each group and <1% of women were screened as mildly depressed in each group.

An important measure of adequate feeding and good care during maternity stay is infant weight change. Weight loss at the discharge was significantly lower among the BFHs babies: -1.3% versus -3.0% ( $p < 0.001$ ). The average length of stay was approximately 5 days for both groups.

The assessment of maternal attitudes in both groups revealed that breastfeeding support was very important. However more women from BFHs estimated such measures as early attachment to breast (94.0% versus 89.3%), rooming-in (95.3% versus 77.3%), feeding on baby's demand (95.3% versus 87.1%) and the possibility of taking care of their babies themselves (95.5% versus 82.5%) as "important" and "very important."

Breastfeeding rates in the experimental and control groups in the period of 1999 to 2003 are shown in Figure 1. The implementation of the Baby-Friendly Hospital Initiative in the practice of maternity hospitals is associated with increases in the prevalence of breastfeeding among infants. In the period 1999 to 2003, a positive trend in breastfeeding was registered in the experimental areas of the MR. The prevalence of breastfeeding in these areas increased by 50% among babies 6 to 12 months (from 20.7% to 31.2%) in the BFH area, but in the control area, the increase was only 24% (from 15.6% to 19.3%) among babies 6 to 12 months.

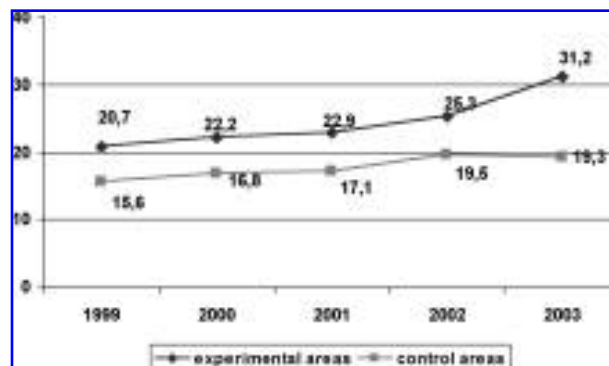


FIG. 1. Breastfeeding prevalence in the experimental and control areas of Moscow region in 1999–2003 (among babies 6–12 months of age, %).

## DISCUSSION

This study confirmed that the majority of Russian women in these areas begin breastfeeding in the maternity hospitals.<sup>13,14</sup> Although the Baby-Friendly Hospital Initiative has under development in the Moscow Region since 1996, only four maternity hospitals out of 52 have the WHO/UNICEF Baby Friendly Hospital Designation, and only 10.5% of annual deliveries in Moscow Region are in these BFHs.

There are significant differences in the practice of breastfeeding protection and support in BFHs and NBFHs. The BFHs include a great number of pregnant women in breastfeeding education, more often use practices such as immediate skin-to-skin contact (laying a newborn on mother's abdomen), not less than 30 minutes skin-to-skin contact, early attachment to the breast in the delivery room, and rooming-in. The first breastfeeding is in the postpartum room during the first hours after delivery in the BFHs, whereas in other hospitals medical personnel more often help mothers during their first breastfeed. The questionnaire showed that 89% exclusively breastfed from birth until discharge. However, there are many issues to address in the work of BFHs, including frequent use of anaesthetic agents (62%), less than universal immediate skin-to-skin contact (73%), a short duration of skin-to-skin contact ( $\leq 30$  minutes; 66%), and less than universal early initiation of breastfeeding in the delivery room (63%). Women in the BFHs observed the use of feeding bottles (7.0%) and dummies (4.0%), and many experienced preventable breast problems: pain during breastfeeding (21.9%), cracks of the nipples (15.6%), and breast engorgement (4.7%). This means that there is room for improvement in the education of medical personnel and support for mothers.

Nonetheless, it was evident also that the practices of the BFHs in supporting breastfeeding had some advantages in comparison with those of the NBFHs. These new practices influenced early lactation as well as the understanding and perception of milk sufficiency, breast health, and breastfeeding decisions. An important impact of BFHs was that appropriate breastfeeding and good medical care resulted in decreased infant weight loss during the maternity stay.

No differences in depression were revealed between the BFHs and NBFHs. A slight depression or subdepressive state was found in only 3.0% of both groups. Thus, fears of some doctors in the Moscow region that rooming-in and breastfeeding on the baby's demand would exhaust and, hence, depress women were not confirmed by the results of this study.

Most women from experimental and control groups appreciated the implementation of "The Ten Steps" for breastfeeding support and protection. In the BFHs, however, more women rated the following as "important" and "very important" measures: rooming-in (95.0% versus 77.0%), breastfeeding on demand (95% versus 87%), and the possibility of taking care of their babies themselves (95% versus 82%). Such appreciation would seem to have resulted from the educational and supportive work of medical personnel during pregnancy, delivery, and maternity stay in the hospital.

A sustained increase in the prevalence of breastfeeding among 1-year-old babies has been observed for the last 5 years. In comparison with the control areas, the prevalence of breastfeeding in the experimental areas of the Moscow region was higher and experienced a greater percentage increase.

## CONCLUSION

These findings lead to the conclusion that there is a positive effect of BFH practice on a number of parameters, such as lactation, increasing of the rate of exclusive breastfeeding from birth until discharge, mothers' and babies' health, mothers' decision regarding long-term breastfeeding. Having proper antenatal education, and being well-informed about the necessary measures in BFHs, mothers highly appreciate rooming-in, breastfeeding on baby's demand, and taking care of their babies by themselves. It is reasonable to assume that the implementation of the BFHs was associated with the increases in breastfeeding among infants in the experimental areas.

All the NBFHs have put into practice some elements of the BFH Initiative (e.g., antenatal breastfeeding education, early attachment, rooming-in, the assistance of medical person-

nel during breastfeeding). These hospitals also may be considered for BFH designation. At the same time BFHs also must make efforts to ensure ongoing adherence to the Ten Steps criteria for ongoing positive impact.<sup>15</sup>

One limitation of the study design is the convenience sampling; however, the adequate sample size and common implementation seem to have overcome this possible problem.

This study reconfirms the importance of sustained attention to all of the criteria of the BFHI, initiated in the MR in 2003, with ongoing quality assurance and reassessment of maternity hospitals in Russia in conformity with the requirements of WHO and UNICEF.

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