



Breastfeeding During the First Hour After Birth and its Related Factors in Baby-Friendly Hospitals of Sari, 2018

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Abstract

Objectives: Breastfeeding is the major factor for children's survival and is associated with a decrease in neonatal morbidity and mortality. In this way, starting breastfeeding in the first hour after birth is highly important. This study evaluated the breastfeeding condition in the first hour after birth and its related factors in Sari 2018.

Materials and Methods: This descriptive-analytical study was performed on 520 mothers (vaginal delivery and a cesarean section with spinal anesthesia) in five baby-friendly hospitals in Sari. The content validity of the applied form for data collection was confirmed by relevant studies and its reliability was determined based on the data of 20 individuals and the determination of Spearman's correlation coefficient. Finally, SPSS 24 was used for statistical analysis.

Results: The early breastfeeding in the first hour after birth was performed in 369 cases (71%), and the contributing factors were the literacy level over diploma ($P=0.0001$), normal vaginal delivery ($P=0.0001$), term status ($P=0.0001$), maternal age over 20 years ($P=0.0001$), higher birth order ($P=0.009$), normal birth weight ($P=0.0001$), singleton birth ($P=0.0001$), non-federal hospital ($P=0.0001$), healthy neonates ($P=0.0001$), and healthy mothers ($P=0.0001$). The chance of breastfeeding during the first hour after birth was 73% less in cases with a cesarean section, and in neonates born in private hospitals, this chance was 5.89 times the infants born in educational government hospitals.

Conclusions: About two-thirds of mothers fed their babies in the first hour after birth in the baby-friendly hospitals of Sari. It is important to evaluate the causes of delayed breastfeeding after birth in future studies, careful planning, and continuous monitoring of this important issue.

Keywords: Breastfeeding, First hour, Newborn

Introduction

Optimal nutrition during the first two years of life is the major factor for improving children's survival and healthy development and is associated with a marked decrease in neonatal morbidity and mortality. In this context, the World Health Organization (WHO) and the United Nations International Children's Emergency Fund have recommended the early onset of breastfeeding during the first hour after birth, exclusive breastfeeding (EBF) for the first six months of life, and supplemental feeding at six months with continued breastfeeding for two years or more (1).

Initiating breastfeeding during the first hour after birth helps the physical health and stability of the baby's condition during this time leads to emotional communication between the mother and the baby (2,3), protects the baby from infectious diseases, and reduces neonatal mortality (4) so that initiating breastfeeding after the first hour following birth doubles the risk of neonatal mortality (5). Furthermore, it helps successful EBF in the first six months of the baby's life and prolonged duration of breastfeeding. Paragraph four of the ten principles of breastfeeding promotion in baby-friendly

hospitals emphasizes the timely initiation of breastfeeding (6). Newborns who have no particular physical problem must have skin contact with their mothers immediately, and breastfeeding must be initiated and continued for one hour (2).

Some studies reported the early initiation breastfeeding prevalence to be 59% (7), 54.8% (8), 51.4% (9), and 41.5% (10). Further, related factors were maternal occupational status, maternal level of education, number of care before delivery, type of delivery (8), maternal weight, level of education, type of delivery and number of care before delivery (9), recurrent care during pregnancy, maternal level of education, and place of delivery (10). Based on the results of one study conducted in Iran, this prevalence was 63.8% and the factors affecting this issue included the maternal level of education, age at pregnancy, previous history of breastfeeding, type of delivery, weight at birth, neonatal diseases, hospital roommates, neonatal feeding before the first contact with mother, and type of the hospital (11).

Therefore, given the importance of this issue in babies' health and with regard to the low number of studies in this field in Iran and differences in their results, the present



Key Messages

- ▶ The prevalence of breastfeeding after birth has a wide range (1-98%) around the world, thus knowing the prevalence and related factors in this region help improve this important issue.
- ▶ The early initiation of breastfeeding prevalence was higher compared to studies conducted in this region, and private hospitals were more successful in this regard.

study was conducted to take a step toward improving health.

Materials and Methods

Research Method, Study Population, Sampling

This descriptive, analytical study was performed on 520 mothers in the postpartum period (vaginal and cesarean section with spinal anesthesia) in five baby-friendly hospitals in Sari, Iran based on the number of deliveries conducted in the previous year.

Data Collection Method

A data collection form and mothers' medical files were applied to collect the research data. The content validity of the checklist was approved based on related studies, and the reliability of the tool was determined by filling the data of 20 individuals by two interviewers and based on the Spearman-Brown coefficient. Moreover, an educational meeting was held to match the interviewers.

Inclusion Criteria

Delivery at a baby-friendly hospital and the baby being next to the mother.

Exclusion Criteria

Cesarean section with general anesthesia, not having proper general health, unresponsiveness of the mother, lack of willingness to participate in the research, prematurity, weight at birth below 1800 gr, and a physical problem in the newborn that interfered with the baby's feeding (e.g., respiratory distress, cleft lip, and multiple pregnancies).

Data Analysis

Data were analyzed by SPSS, version 24 using percentage, mean, and standard deviation. In addition, the frequency of breastfeeding during the first hour after birth was presented in percentage and based on different variables. The two delivery groups were compared in terms of breastfeeding during the first hours based on grouping variables using chi-square and Fisher's exact tests. Additionally, the regression test was applied to alleviate the effect of confounding variables, and the results were provided in the form of an odds ratio with a 95% confidence interval.

Results

According to the results of the study, 369 mothers (71%) breastfed their newborns during the first hour after birth. As shown in Table 1, there was a significant relationship between the onset of breastfeeding during the first hour after birth and maternal age and level of education, type of delivery, parity, neonate's weight, maternal and neonatal diseases, and the type of the hospital. Table 2 presents the univariate and multivariate regression results. According to the results of the multivariate regression, the chance of breastfeeding during the first hour after birth in mothers within the age range of 20-29 years and ≥ 30 was significant and at the level of 2.96 and 2.58 times the age group of 15-19 years. This chance was 11.70 times in individuals with the fourth-order of birth compared to individuals with the first order of birth. In neonates with a weight of 2500-4000 kg at birth, this chance was 4.93 times the newborns weighing less than 2500 gr. Furthermore, the chance was 5.89 times in neonates born in private hospitals in comparison with infants born in educational government hospitals. Moreover, the chance of breastfeeding during the first hour after birth was 73% less in cases with cesarean section compared to those with a vaginal delivery. In addition, the chance was 46% lower in multiple pregnancies as compared to the singleton fetus. It is notable that the observed differences were statistically significant.

Discussion

Breastfeeding during the first hour after birth is extremely crucial and helps decrease neonatal mortality and morbidity. In addition, it assists successful EBF in the first six months of life and a prolonged duration of breastfeeding. In this regard, the present study aimed to evaluate the current status and factors affecting breastfeeding during the first hour after birth to improve health. According to the results, 71% of the cases could breastfeed their newborns during the first hour after birth. Although this rate is far from the WHO standards, which states that all mothers should breastfeed their infants during the first hour after birth (12), it is promising compared to the results of a review study, which was limited to Asia, Africa, and South America and reported a prevalence range of 11.4%-83.3% in this respect (13). Further, it is almost two times the overall prevalence (34%) reported in a review study (14) related to the Middle East countries. However, it is closer to the results of a study conducted in different cities of Iran, including Mashhad (56.5%), Tehran (46.5%), and Shiraz (63.8%).

In another research in Shiraz, the prevalence of breastfeeding during the first hour after birth was reported at 32.2%, and this low rate might be due to the higher number of mothers undergoing a cesarean section compared to other regions (15). In another review study, the prevalence of skin-to-skin contact after vaginal delivery was estimated at 1-98%. However, it is worth noting that

Table 1. Initiation of Breastfeeding in the First Hour After Birth According to Mother's Demographic, Obstetric, Neonate Information

Variable	Subgroup	Percent	Breastfeeding Initiation in 1st Hour After Birth		P Value
			Yes, n (%)	No, n (%)	
Mother's age (y)	15-19	8.7	18 (40)	27 (60)	<0.001
	20-29	51.5	206 (76.9)	62 (23.1)	
	≥30	39.8	145 (70)	62 (30)	
Mother's education	Under diploma	24.4	65 (51.2)	62 (48.8)	<0.001
	Diploma & associate degree	53.5	215 (77.3)	63 (22.7)	
	Bachelor & higher	22.1	89 (77.4)	26 (22.6)	
Mother's occupation	Housewife	72.5	260 (69)	117 (31)	0.104
	Employed	27.5	109 (76.2)	34 (23.8)	
Delivery mode	Vaginal	61.7	246 (76.6)	75 (23.4)	<0.001
	Cesarean	38.3	123 (61.8)	76 (38.2)	
Birth rank	First	46.7	159 (65.4)	84 (34.6)	0.009
	Second	41.2	165 (77.1)	49 (22.9)	
	Third	9.4	32 (65.3)	17 (34.7)	
	Fourth & higher	2.7	13 (92.9)	1 (7.1)	
Parity	Single	96.2	364 (72.8)	36 (27.2)	<0.001
	Twin & higher	3.8	5 (25)	15 (75)	
Mother's disease	Yes	6.7	0 (0)	35 (100)	<0.001
	No	93.3	369 (76.1)	116 (23.9)	
Neonate's weight (g)	<2500	10.4	17 (31.5)	37 (68.5)	<0.001
	2500-4000	84.6	339 (77)	101 (23)	
	>4000	5	13 (50)	13 (50)	
Neonate's disease	Yes	7.7	0 (0)	40 (100)	<0.001
	No	92.3	369 (76.9)	111 (23.1)	
Hospital	Governmental (related to university)	36.5	97 (51.1)	93 (48.9)	<0.001
	Governmental (non-related to university)	4.8	18 (72)	7 (28)	
	Private	58.7	254 (83.3)	51 (16.7)	
Newborn birth time based on hospital shift	Morning	45.2	170 (72.3)	65 (27.7)	0.809
	Evening	28.3	102 (69.4)	45 (30.6)	
	Night	26.5	97 (70.3)	41 (29.7)	

the data of the present research cannot be compared to the mentioned study since skin-to-skin contact with or without the onset of breastfeeding was considered in the latter (16). On the other hand, the present research was a cross-sectional study, where the information related to breastfeeding during the first hour after birth was directly obtained from the mothers. Meanwhile, other studies collected information from mothers whose infants were older, which could lead to the assessment of the results at a higher level. Furthermore, many activities aiming at promoting breastfeeding in the first hour of life have been carried out between the years of those studies and the current study, which might have affected the awareness, attitude, and performance of mothers and related personnel.

In the present study, a significant association was found between breastfeeding during the first hour after birth and maternal age (≥ 20 years, $P=0.0001$), maternal level of

education (a diploma degree and higher, $P=0.0001$), type of delivery (vaginal delivery, $P=0.0001$), higher birth order ($P=0.009$), number of fetuses (singleton fetus, $P=0.0001$), lack of maternal diseases ($P=0.0001$), normal birth weight ($P=0.0001$), lack of neonatal diseases ($P=0.0001$), and type of hospital (private, $P=0.0001$). Although a cesarean section with general anesthesia was one of the exclusion criteria in the present study, our findings showed that the cesarean section even with spinal anesthesia was a risk factor affecting breastfeeding during the first hour after birth. Several studies reported that despite the emphasis on the need to implement breastfeeding promotion policies, a cesarean section is a considerable barrier to breastfeeding during the first hour after birth (8,9,17-24). Mothers experiencing vaginal delivery are more powerful in initiating breastfeeding compared to those undergoing a cesarean section (24). This issue might be due to the limited mobility of mothers during the surgery and their

Table 2. Breastfeeding-Related Factors in the First Hour After Delivery According to Univariate and Multivariate Logistic Regression Results

Variable		Univariate Logistic Regression			Multiple Logistic Regression		
		OR	95% CI	P Value	OR	95% CI	P Value
Mother's age (y)	15-19	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	20-29	4.98	2.57-9.65	<0.001	2.96	1.26-6.93	0.012
	≥30	3.51	1.80-6.83	<0.001	2.58	1.03-6.44	0.042
Mother's education	Under diploma	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Diploma & associate degree	3.25	2.08-5.09	<0.001	1.43	0.74-2.77	0.284
	Bachelor & higher	3.26	1.87-5.71	<0.001	1.44	0.61-3.41	0.403
Mother's occupation	Housewife	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Employed	1.44	0.93-2.25	0.105	1.14	0.63-2.06	0.668
Delivery mode	Vaginal	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Cesarean	0.49	0.34-0.73	0.001	0.27	0.15-0.47	<0.001
Birth rank	First	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Second	1.78	1.18-2.69	0.006	1.67	0.99-2.79	0.052
	Third	0.99	0.52-1.89	0.987	1.27	0.53-3.06	0.592
	Forth & higher	6.87	0.88-53.41	0.066	11.70	1.29-105.50	0.028
Parity	Single	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Twin & higher	0.12	0.04-0.35	<0.001	0.54	0.13-2.22	0.395
Neonate's weight (g)	<2500	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	2500-4000	7.30	3.95-13.52	<0.001	4.93	2.19-11.07	<0.001
	>4000	2.18	0.83-5.68	0.112	2.05	0.63-6.64	0.232
Hospital	Governmental (related to university)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Governmental (non related to university)	2.46	0.98-6.17	0.054	2.00	0.72-5.55	0.182
	Private	4.77	3.16-7.22	<0.001	5.89	3.44-10.06	<0.001
Newborn birth time based on hospital shifts	Morning	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
	Evening	0.87	0.55-1.36	0.535	0.83	0.48-1.45	0.520
	Night	0.90	0.57-1.44	0.672	1.02	0.57-1.84	0.939

Note. OR: Odds ratio; CI: Confidence interval.

need for the help of another person for one hour. In addition, in the use of anesthesia drugs, a small amount of the substance might penetrate the placenta and stay in the mother and the baby's body for hours, thus disrupting and delaying the first breastfeeding. Furthermore, a cesarean section has more adverse effects on milk secretion time during the first hour after birth compared to vaginal delivery (23).

As mentioned before, our results indicated a higher number of early breastfeeding in mothers with a higher level of education, which is congruent with the results of several studies (13,8-10,19). It seems that mothers with a higher level of education were more willing to cooperate in the breastfeeding process due to their higher knowledge about benefits of early breastfeeding to their babies and themselves. Although the mothers' knowledge level and source of information were not assessed in the current study, teaching mothers the benefits of breastfeeding during the first hour after birth might improve this issue all over the country. Moreover, the birth order was another factor affecting the early onset of breastfeeding. In line with our findings, Babaeie et al concluded that

breastfeeding was initiated sooner for babies with higher birth order (19). In this context, the results of Ekubay et al are consistent with our findings as well (25). According to these results, having more experiences in the area of delivery and breastfeeding might lead to breastfeeding during the first hour after birth, demonstrating the importance of education and the motivation of nulliparous women with no breastfeeding experience.

In all evaluated studies, the early onset of breastfeeding was among the policies of all hospitals, and the type of hospital was not considered in the research design. The present study evaluated baby-friendly hospitals and our findings demonstrated a relationship between breastfeeding during the first hour after birth and the type of hospital. In general, the level of the mentioned variable was significantly higher in private hospitals. It is worth noting that all baby-friendly hospitals in a city were assessed in this regard. However, the number of private baby-friendly hospitals and their clients was higher compared to public baby-friendly hospitals, which might help interpret the results.

In addition, no direct study has focused on the variables

of singleton fetuses, weight at birth, and maternal and neonatal health. However, the results indicated that any factor that would lead to vaginal delivery without a specific complication and a lack of need for resuscitation measures could positively affect breastfeeding during the first hour after birth. All mentioned variables could increase the chance of a cesarean section and might disrupt the onset of breastfeeding during the first hour after birth.

Conclusions

According to the results of the present study, about two-thirds of babies born in baby-friendly hospitals in Sari were breastfed during the first hour after birth.

Recommendations

- To achieve the WHO standards, it is necessary to implement an intervention to promote vaginal delivery and eliminate unnecessary caesarean sections. In addition, it is aimed to promote breastfeeding during the first hour after birth by teaching mothers.
- It is recommended that mothers be more supported in deliveries that might lead to a delay in the onset of breastfeeding.
- It is suggested that studies be conducted on higher sample sizes and in several centers in other cities.

Finally, including other demographic and clinical factors will be helpful in better understanding the associated factors for health planning.

Authors' Contribution

MA: Concept and design; MSA: Performing the study & data collection; MA & MM: Interpretation of the data; MA: writing the draft. All authors read and approved the study

Conflict of Interests

None to be declared.

Ethical Issues

The present study was approved at the Health Science Research Center of Mazandaran University of Medical Sciences and registered with the ethics code of IR.MAZUMS.REC.1398.036 (<http://ethics.research.ac.ir/ProposalView.php?id=61686>).

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