





ORIGINAL PAPER

PROMOTION AND SUPPORT WITH BREASTFEEDING WITHIN THE BABY-FRIENDLY HOSPITAL INITIATIVE PROGRAMME IN SLOVAKIA

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Abstract

Aim: To find the level of support and assistance provided to mothers shortly after birth, and the amount of information on breastfeeding provided to them by health professionals. **Design:** A quantitative study with a cross-sectional design. **Methods:** The data were collected in two maternity hospitals in central Slovakia between June 2019 and the end of January 2020. The sample consisted of 200 women after childbirth. The standardised Questionnaire for Breastfeeding Mother was used. **Results:** During hospital stay, 54% of mothers reported exclusive breastfeeding, and 14% stated no forms of breast milk substitute were provided. The first contact with the newborn lasted an hour or more for 11% of the mothers, and 48% were allowed some degree of bonding through skin-to-skin contact. Only 37.5% of the mothers were given breastfeeding assistance within six hours of the birth. There was a significant difference ($p < 0.001$) between type of delivery and the time when mothers were first allowed contact and skin-to-skin contact with newborns. **Conclusion:** The results indicate insufficient adherence to breastfeeding interventions, particularly in connection with surgical delivery. It is essential to pay more attention to assistance with breastfeeding, and to follow the Baby-friendly Hospital Initiative recommendations (BFHI).

Keywords: BFHI, breastfeeding, midwifery, promotion, support.

Introduction

The exclusive breastfeeding rate for the first six months of life does not exceed 30% around the world (Zhang et al., 2019). According to UNICEF (2018), globally, only 44% of infants from birth to six months were exclusively breastfed, and insufficient breastfeeding contributed to 11.6% of mortality in children under five years of age. The highest breastfeeding rates are in sub-Saharan Africa, South Asia, and certain parts of Latin America. The worldwide trend suggests that duration of breastfeeding decreases in higher income countries, where the exclusive breastfeeding rates are less than 20% (Victora et al., 2016). The reasons for the low exclusive breastfeeding rates are connected with lack of breastfeeding knowledge, systems of health care, commercial activities, and various cultural and social aspects. Other reasons include insufficient breastfeeding support in primary health care and health care facilities (Chovancová, 2016). The World

Health Organization (WHO) has announced the Global Target 2025 for maternal and breastfed infant nutrition, with the aim of increasing exclusive breastfeeding rates to at least 50%.

In Slovakia, a decline in the duration and frequency of breastfeeding, caused by various social and cultural changes, has been traced back to the beginning of the 20th century. The most significant decrease was recorded in the sixties and seventies of the 20th century. In this period, it is estimated that 30% – 50% of infants were fed solely on breast-milk substitutes following discharge from maternity hospital; only 15% of infants were breastfed for the first three months of life; and cases of infants being breastfed for as long as six months were only exceptionally recorded. Later, the situation improved and breastfeeding rates increased significantly. In 2018, more than half of infants (55%) were breastfed exclusively for the first six months of life (NCZI SR/NHIC SR, 2019).

In 2018, the Ministry of Health of the Slovak Republic issued a standard preventive procedure entitled “Mother and Newborn Care According to the Principles of the Baby-friendly Hospital Initiative (BFHI) – Bonding and Breastfeeding Support.” This

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standard procedure was developed on the basis of the revised *Ten Steps to Successful Breastfeeding 2018* guidance, which had been included in the *Implementation guidance: Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services: the revised Baby-friendly Hospital Initiative* (WHO, 2018). The aim of this updated guidance is to ensure general coverage and sustainability of the *Ten Steps* in all facilities within the state, and in relation to all children – both premature and full-term infants (Litavec et al., 2019).

Aim

The aim of the study was to find the level of support and assistance provided to mothers shortly after birth, and the amount of information on breastfeeding provided to women by health professionals in the selected maternity hospitals.

Methods

Design

A quantitative study with a cross-sectional research design.

Sample

The research sample consisted of 200 women who were between zero to six weeks postpartum and completed the questionnaire during their postpartum stay in the hospital (response rate 98.0%). A deliberate sampling method was used. The average age in the research group was 30.5 years (SD 4.7), and 51.0% of the women were primiparous. The majority of respondents had obtained university degrees (59.0%), while 30.5% had completed high school, and 3.5% had completed primary school (7% did not state their educational level). In terms of gestational age at birth, 7.0% of the respondents had premature delivery, 67.5% full-term delivery, and 25.5% post-term delivery. The most common type of delivery was spontaneous (72.5%), followed by Cesarean delivery (26.5%), and 1.0% of the women underwent forceps delivery.

Data collection

The research data collection was conducted in two maternity hospitals in central Slovakia (both were university hospitals with average annual birth rates of up to 1,500 births) in the period from June 2019 to the end of January 2020.

The standardized Questionnaire for Breastfeeding Mother, developed by the WHO and UNICEF (2009), which serves as a screening tool for detecting breastfeeding support in hospitals and monitoring the

implementation of the 2009 BFHI, was used to collect the data (WHO, UNICEF, 2009). Permission to use the questionnaire had been obtained from its author and, subsequently, the questionnaire was adapted for the study and translated from English into Slovak by the back-translation method. The revised questionnaire consisted of 25 questions aimed at determining pregnant women's experiences of pregnancy (breastfeeding counselling by health professionals), childbirth (perception of the course of labor and delivery, bonding promotion and initiation), and early postpartum period (in particular, evaluation of health professionals' promotion and support of breastfeeding, provision of information, emotional support, consultations concerning breast-milk substitutes, supplementation of breastfeeding infants with formula, etc.). The questionnaire was combined with questions focusing on basic demographic data and the respondents' knowledge of breastfeeding.

Data analysis

Collected data were analysed using the free statistical software PSPP, version 18.0. Descriptive statistics (frequencies, mean and standard deviation, and percentage) were used for reporting basic demographic and perinatal characteristics. The Chi-squared test was used to evaluate the statistical significance of the differences between the groups of respondents according to selected criteria.

Results

In the course of data collection, the majority of the participants (54.0%; $n = 108$) reported breastfeeding their infants exclusively. However, as many as 81.5% ($n = 163$) reported that their child had also been given breast-milk substitutes during hospitalization. This group of women also reported that, in most cases (82.8%), the breast-milk substitutes were given to the infants using a pacifier bottle (Table 1).

Approximately half (51.5%) of the mothers were allowed contact with their infant within five minutes of delivery. Less than half (48%) of the respondents had skin-to-skin contact after delivery. The hospital staff provided breastfeeding support to over half (58%) of the respondents during their first contact with the child. In 11% of cases, the first contact with the child lasted an hour or more. More than one third (37.5%) of the mothers were given breastfeeding assistance within six hours of delivery (Table 2).

Information on the benefits of breastfeeding was provided to 79.0% of the respondents, and 44.5% received information about the possible negative

Table 1 The newborn feeding method in the research sample

		n (%)
The newborn feeding method at discharge from the maternity hospital (n = 200)	exclusive breastfeeding	108 (54.0)
	mixed feeding with breast milk and breast-milk substitutes	77 (38.5)
	breast-milk substitutes	8 (4.0)
	other	7 (3.5)
Use of breast-milk substitutes (n = 200)	yes	163 (81.5)
	no	28 (14.0)
	i do not know	9 (4.5)
Breast-milk substitute feeding methods (n = 163)	pacifier bottle	135 (82.8)
	other method (syringe, spoon)	12 (7.4)
	i do not know	16 (9.8)

Table 2 Breastfeeding facilitation and skin-to-skin contact support in the early postpartum (n = 200)

	Yes n (%)	No n (%)	I cannot recall n (%)
The first contact with the child within 5 minutes	105 (51.5)	93 (47.5)	2 (1.0)
First skin-to-skin contact with the child	96 (48.0)	102 (51.0)	2 (1.0)
Breastfeeding support at the first contact with the child	116 (58.0)	82 (41.0)	2 (1.0)
Bonding duration for at least 1 hour	22 (11.0)	163 (81.5)	15 (7.5)
Support for breastfeeding initiation within 6 hours after delivery	75 (37.5)	125 (62.5)	0 (0.0)

effects of pacifier and feeding bottle use on breastfeeding. Manual expression of breast milk was demonstrated or explained to 57.5% of the respondents. Only 26.0% of respondents received appropriate advice on breastfeeding frequency, and 29.0% were pertinently informed about the correct breastfeeding duration. About half (49.5%) of the women received information about whom to contact for further help with breastfeeding on discharge from the maternity hospital (Table 3).

Exclusive breastfeeding was significantly more frequent ($p < 0.01$) in women following spontaneous vaginal delivery than in women who had delivered by Cesarean section (60.7% vs. 36.4%) (Table 4). Similarly, women after spontaneous vaginal delivery were significantly more often ($p < 0.001$) allowed to cuddle skin-to-skin with their naked child (63.9% vs. 7.4%) than those after Cesarean section (Table 4).

The mothers who did not feed with breast-milk substitutes were significantly more likely ($p < 0.01$) to be allowed skin-to-skin bonding (Table 5).

Table 3 Provision of information on breastfeeding by health professionals

	Yes n (%)	No n (%)
On the benefits of breastfeeding	158 (79.0)	42 (21.0)
On the possible negative effects of pacifier and feeding bottle use on breastfeeding	89 (44.5)	11 (5.5)
On manual expression of breast milk or its demonstration	115 (57.5)	85 (42.5)
On the proper frequency of breastfeeding	52 (26.0)	148 (74.0)
On the proper breastfeeding duration	58 (29.0)	142 (71.0)
On the possible breastfeeding help and support after leaving the hospital	101 (49.5)	99 (50.5)

Table 4 Differences in the infant feeding methods and the method of skin-to-skin contact based on the type of delivery

		Type of delivery		Total	Chi-squared value (Pearson's chi-squared test)	Stat. significance p
		Spontaneous n = 145 (%)	Caesarean n = 55 (%)			
Current feeding method	exclusive breastfeeding	88 (60.7)	20 (36.4)	108	9.5	< 0.01
	mixed feeding or replacement feeding only	57 (39.3)	35 (63.6)	92		
The first contact with the newborn	skin-to-skin contact	92 (63.9)	4 (7.4)	96	50.2	< 0.001
	swaddled without direct skin-to-skin contact	52 (36.1)	50 (92.6)	102		

Table 5 Differences in the administration of replacement feeding based on the implementation of skin-to-skin contact after delivery

Replacement feeding	The first skin-to-skin contact with the newborn		Total	Chi-squared value (Pearson's chi-squared test)	Stat. significance p
	Skin-to-skin contact n = 96 (%)	Swaddled without direct skin-to-skin contact n = 102 (%)			
Yes	71 (44.1 %)	90 (55.9 %)	161	9.18	< 0.01
No	21 (75.0 %)	7 (25.0 %)	28		
I do not know	4 (44.4 %)	5 (55.6 %)	9		

Discussion

Exclusive breastfeeding and supplementation with formula

The results of our research concerning exclusive breastfeeding before discharge from maternity hospital are consistent with the findings in other similar studies, indicating an exclusive breastfeeding rate of 55.0% to 63.0% (Hongo et al., 2015; Zhang et al., 2019). While 81.5% of mothers reported some use of breast-milk substitutes, this can be explained by substitution provided immediately after delivery, but withdrawn before discharge from hospital. Early professional breastfeeding support significantly increases the exclusive breastfeeding rate in the early postnatal period and the total duration of breastfeeding during the first six months (Fu et al., 2014).

The results also revealed a high rate of formula supplementation of infants. This finding may be linked to the type of delivery, which might limit interventions necessary for exclusive breastfeeding support and early breastfeeding initiation. Another reason may be delayed support for mothers in initiating and establishing breastfeeding after childbirth. Routine care was shown to predominate in maternity hospitals, and many interventions were not implemented as recommended by the BFHI. The type of delivery had an impact on the infant feeding method on discharge from the maternity hospital. Several studies (Guala et al., 2017; Hobbs et al., 2016; Zhang et al., 2019) confirm this finding, suggesting that infants born by Cesarean section are more often supplemented with formula or fed with breast-milk substitutes. Women after Cesarean delivery are more likely to experience breastfeeding problems compared to women after vaginal delivery. They also tend to stop breastfeeding, or exclusive breastfeeding, at an early stage. After Cesarean delivery, women are also more likely to use breast-milk substitutes, contributing to a reduction in milk production of up to 23.1% (Zhang et al., 2019). Insufficient and inadequate knowledge, social expectations, the influence of mass media pressure, the immediate availability of breast-milk substitutes,

and lack of breast milk are the main factors resulting in low exclusive breastfeeding rates (Erkul et al., 2010; Gao et al., 2016; Hongo et al., 2015). In Slovakian hospitals, breast-milk substitutes are often also given to breastfed children (Chovancová, 2016). In the Czech Republic, women are provided with information contrary to the BFHI protocols, such as the recommendation to use glucose to get infants to latch onto the breast more easily (Pokorná et al., 2016). In the UK, it is believed that the lack of time and heavy workload of midwives might contribute to their non-compliance with the BFHI protocols, despite the training they receive regarding formula feeding (Biggs et al., 2018).

Use of a pacifier feeding bottle for formula supplementation, considered to be a negative phenomenon, was revealed in our study. The majority of the respondents whose children were supplemented with formula mentioned this feeding method. The use of other devices, such as a syringe and a spoon, was reported only rarely. According to the revised BFHI standards, replacement feeding using devices other than pacifier feeding bottles should be favoured (Litavec et al., 2019). When bottle-fed, the child performs unusual tongue movements since silicone pacifiers have lower extensibility and deformability than human nipples (Zhang et al., 2019). As a result, early transition to breast-milk substitutes can have a negative impact on breastfeeding (Bánovčín et al., 2016).

Postpartum breastfeeding promotion and support

The first skin-to-skin contact with the child should be allowed immediately, and no later than five minutes after the birth of the child, continuing uninterrupted for at least an hour (Litavec et al., 2019). However, our research revealed that only about half of the women experienced skin-to-skin contact with their child immediately after delivery. The importance of skin-to-skin contact has been confirmed by several studies that point to its positive effect on breastfeeding, particularly regarding its initiation (Guala et al., 2017; Karimi et al., 2019; Nguyen et al., 2016; Safari et al., 2018; Sharma, 2016). According to Nguyen et al. (2016) and Safari et al.

(2018), breastfeeding rate is higher when breastfeeding begins after skin-to-skin contact. Mother-infant skin-to-skin contact significantly increases the success and duration of the first breastfeeding (Karimi et al., 2019). Similar results have been confirmed by Sharma (2016), proving that early skin-to-skin contact has a long-term effect on the exclusive breastfeeding rate within the first six weeks after childbirth. Early postpartum contact of the newborn with the mother's skin prevents hypothermia, reduces crying, and promotes maternal attachment, cardiorespiratory stability, and early correct latching-on to the breast, which leads to early initiation of exclusive breastfeeding (Guala et al., 2017). Analysing the results of our research, we may conclude that there exists a relationship between the time of the first contact with the child and the type of delivery. Immediate mother-infant contact significantly prevailed after vaginal delivery compared with after Cesarean section. Zhang et al. (2019) and Hobbs et al. (2016) agree that Cesarean section is a risk factor for extended breastfeeding, as it negatively affects initiation of early breastfeeding. Generally, routine hospital care and delayed first breastfeeding have been proven to be obstacles to the initiation and duration of breastfeeding after Cesarean section (Zhang et al., 2019). Delayed breastfeeding, linked to Cesarean section, is associated with separation of mothers and newborns, decreased suckling capacity, increased susceptibility of newborns, and, subsequently, insufficient production of breast milk – all of which factors may contribute to the shortened duration of breastfeeding (Hobbs et al., 2016).

Our work has pointed to a significant link between the type of delivery and mother-infant skin-to-skin contact. As many as 93.0% of our respondents were not allowed to experience skin-to-skin contact with their newborns after Cesarean delivery. As reported by Guala et al. (2017), children born by Cesarean section do not acquire maternal vaginal microbes, and thus skin-to-skin contact after birth is imperative, as it permits microbial colonization of the newborn by maternal skin microbiota. Skin-to-skin contact at birth should be the natural standard of care for newborns and mothers, not only after vaginal delivery, but also after scheduled or unplanned Cesarean sections, if the circumstances and type of anaesthesia allow. In Slovakia, however, this approach is often frowned upon by anaesthesiologists and obstetricians (Chovancová, 2016).

The first contact with the child lasted an hour or more for only 11% of the mothers. In an American study by Bramson et al. (2010), 60% of women reported that their first contact after childbirth lasted from one

to three hours, and in a New Zealand study, 31% of respondents reported that it lasted from one to two hours (Kalmakoff et al., 2018). The reason for the short duration of the first contact with the newborn in Slovakia may be due to, among other factors, an insufficient number of health professionals, who subsequently do not have enough time to implement interventions to promote and support breastfeeding. In addition, limited or inadequate space and capacity in delivery rooms, and underestimation of the importance of maternal-newborn bonding support after birth by health professionals may also be risk factors for skin-to-skin contact and its duration.

However, we also found that 41% of our respondents were not encouraged by health providers to initiate breastfeeding immediately on their first contact with the child, and neither were they given breastfeeding advice and assistance. Immediately after the birth, mothers should be guided in initiating breastfeeding as soon as possible (Litavec et al., 2019). According to Sharma (2016), newborns are perceptually the most sensitive to their mothers through maternal tactile, thermal, and olfactory cues. This time is optimal for initiating breastfeeding. It is recommended that breastfeeding support and help to mothers be provided as soon as possible, preferably within six hours of delivery (Litavec et al., 2019). Our results indicated, however, that only about one-third of the respondents were helped with breastfeeding within this time. A statistical correlation between the time of providing breastfeeding support and administration of breast-milk substitutes has been established. Early breastfeeding promotion facilitates initiation of lactation, and reduces the need for supplementation (Gao et al., 2016). Statistically significant differences have been found between the first mother-infant skin-to-skin contact and the administration of breast-milk substitutes. Breastfeeding is naturally stimulated by direct mother-infant skin-to-skin contact, as this enables the infant to find the nipple instinctively (Litavec et al., 2019). Early sucking from the breast triggers and accelerates the production of breast milk. Latching-on during breastfeeding stimulates production and release of oxytocin, which promotes breastfeeding and its early initiation, and reduces the need for supplementation (Jeseňák et al., 2015).

Breastfeeding education provided to the women by health providers

The information on breastfeeding received by more than half (57.5%) of the respondents on their discharge from hospital was shown to be pertinent, and complied with BFHI recommendations. Our

results turned out to be more favourable than those of the study by Biggs et al. (2018), in which only 38% of the 102 respondents were adequately informed about breastfeeding. According to the evaluated answers of our study, less than one third of the respondents did not receive proper recommendations and advice from health providers about the frequency of breastfeeding, i.e., that the newborn should be breastfed on demand. In most cases, a specific timeline for breastfeeding sessions was recommended. However, less than one third of the respondents were informed correctly of the duration of a breastfeeding session. These findings point to a serious deficit of information on frequency and duration of breastfeeding provided by health professionals, and insufficient adherence to the revised WHO and UNICEF guidelines. Naturally, a different frequency and duration of breastfeeding sessions may be recommended for various reasons, such as in the case of neonatal jaundice or premature birth (Pokorná et al., 2016). Unlimited length and frequency of breastfeeding have a positive effect on extended and exclusive breastfeeding, more frequent feeding, and infants' health and development (Hongo et al., 2015).

Approximately half of the postpartum women were not provided with any information or advice in hospital about who to contact for help with breastfeeding in the event of need after discharge. However, support for mothers after their discharge from maternity hospital is indispensable to successful breastfeeding (Hongo et al., 2015; Sinha et al., 2015). The best results are achieved when counselling is provided simultaneously in the home environment, community, or health facilities (Sinha et al., 2015).

Limitation of study

One of the strengths of this study is the use of the standardized questionnaire, which allowed comparison of the results with other similar works, and interpretation of the findings in an international context. In addition, our study focused on a topic rarely explored in Slovakia. Study limitations can be seen in the uneven distribution of the sample according to education, as our research sample consisted mainly of respondents with higher education, with just 3.5% of the respondents obtaining only basic education. This was because a significant proportion of lower social strata (mainly Roma) women were not willing to participate in the study due to low literacy levels. Our research sample also included 7% of women who had given birth prematurely, and these, and other cases with various health indications requiring special regimes and measures, could have influenced the research results.

Finally, although the lactation counsellors were employed in the selected maternity hospitals, both hospitals had already lost their BFHI certificates, and were currently reapplying for them.

Conclusion

Most newborns were exclusively breastfed before leaving the maternity hospital; however, many of them had also been supplemented with formula during their hospital stay. Approximately half of the respondents experienced skin-to-skin contact with their newborns within five minutes of birth. Such contact has a positive effect on breastfeeding and its early initiation, and its absence is significantly related to feeding with breast milk substitutes. The first contact with the infant lasted an hour or more in only 11% of the mothers. Only 37.5% of our respondents reported being assisted and helped with breastfeeding within six hours of the birth. A significant barrier to the direct contact with the newborn was Cesarean delivery. In addition, almost half of the respondents did not receive any information on their discharge from maternity hospital about who to contact if they needed further help with breastfeeding.

Several practical recommendations emerge from the findings:

- To support breastfeeding in postpartum rooms. It is necessary to retrain health professionals according to the latest recommendations, and to better monitor the implementation of the BFHI in order to improve breastfeeding in Slovakia.
- To particularly support breastfeeding after C-sections, and modify routine care accordingly in such cases.
- To create suitable conditions for direct mother-infant skin-to-skin contact whenever possible.
- To improve education of mothers in how to deal with breastfeeding-related problems after hospital discharge, and to inform them about where to find community support.

Ethical aspects and conflict of interest

The study was approved by the Ethics Committees of both hospitals. The authors have disclosed no potential conflicts of interest, financial or otherwise.

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Author contributions

The concept and study design (MB, BCH), data analysis and interpretation (ZŠ, BCH), processing the draft of the manuscript (MB, ZŠ), critical revision of the manuscript (MB, MN, EU), article finalization (EU).

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