

Analysis of the impact of selected hospital practices on exclusive breastfeeding

Analiza wpływu wybranych praktyk szpitalnych na wyłączne karmienie piersią

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ABSTRACT

Introduction: Breastfeeding is the optimal method of feeding children during the first period of their life. The correct management of lactation is essential for proper breastfeeding initiation which would be continued long enough. Many factors have a huge impact on lactation, among others mode of delivery, parturition, hospital procedures and practices, such as suctioning the airway, 'skin to skin' contact, feeding the baby, and the competent support of the staff.

The aim of the study was to analyze the impact of selected procedures related to childbirth and post-natal care, as well as hospital practices on lactation.

Materials and methods: The study involved 145 women who gave birth in the Department of Foetal Medicine and Gynaecology Pomeranian Medical University in Szczecin located in Police, West Pomeranian Province in Poland. The research

was carried out by a diagnostic survey with a self-authorship questionnaire.

Conclusions: 1. Some hospital practices, such as suctioning the airway, short 'skin to skin' contact after cesarean delivery, and complementary feeding of a newborn baby with a bottle had negative impact on maintaining lactation. 2. Complementary feeding of an infant with a bottle was a frequent hospital practice. As the procedure has an adverse impact on lactation, breastfeeding should be replaced by complementary feeding in an alternative way only in justified cases. 3. Most of the patients who obtained support during lactation were breastfeeding exclusively. Competent assistance in initiating and maintaining lactation is the responsibility of the medical personnel, thus there is a necessity for their permanent development, and a constant need to modify hospital practices to ones that affect lactation favourably.

Keywords: lactation; breastfeeding; hospital procedures.

ABSTRAKT

Wstęp: Karmienie piersią jest optymalnym sposobem żywienia dzieci w pierwszym okresie ich życia. Prawidłowe postępowanie w laktacji jest podstawą właściwego jej rozpoczęcia oraz skutecznego karmienia, które będzie odpowiednio długo kontynuowane. Ogromny wpływ na proces laktacji ma wiele czynników, m.in. rodzaj porodu, przebieg porodu, procedury i praktyki szpitalne takie jak odsłuzowanie, kontakt skóra do skóry, dokarmianie dziecka, kompetentna pomoc personelu.

Celem pracy była analiza wpływu wybranych procedur związanych z porodem i opieką po porodzie oraz praktyk szpitalnych na proces laktacji.

Materiały i metody: Badaniem objęto 145 kobiet, które urodziły dziecko w Klinice Medycyny Matczyno-Płodowej i Ginekologii Pomorskiego Uniwersytetu Medycznego w Szczecinie mieszczącej się w Policach, w województwie zachodniopomorskim.

Badania przeprowadzono metodą sondażu diagnostycznego, za pomocą kwestionariusza ankiety własnego autorstwa.

Wnioski: 1. Niektóre praktyki szpitalne, takie jak odsłuzowanie, krótki kontakt skóra do skóry po cięciu cesarskim i dokarmianie noworodków za pomocą butelki, wpływały negatywnie na zachowanie laktacji. 2. Dokarmianie noworodków za pomocą butelki stanowiło częstą praktykę szpitalną. Jako procedura wpływająca negatywnie na laktację, powinna być zastąpiona dokarmianiem w sposób alternatywny tylko w uzasadnionych przypadkach. 3. Większość pacjentek, które otrzymały pomoc w czasie laktacji, karmiły noworodka wyłącznie piersią. Kompetentna pomoc w rozpoczęciu i utrzymaniu laktacji jest obowiązkiem personelu medycznego, dlatego istnieje konieczność stałego doskonalenia oraz ciągła potrzeba modyfikacji praktyk szpitalnych korzystnie wpływających na laktację.

Słowa kluczowe: laktacja; karmienie piersią; procedury szpitalne.

INTRODUCTION

Breastfeeding is the optimal method of infant feeding during the first period of his life. The correct management of lactation

is essential for proper initiation and effective breastfeeding which will be continued long enough [1]. Many factors have a huge impact on the lactation process, e.g. mode of delivery, parturition, hospital procedures and practices, such as

suctioning the airway, 'skin to skin' contact, feeding the infant, and the competent support of the staff. Reducing or eliminating adversely affecting procedures, and the implementation of procedures positively influencing lactation should be basic treatment for medical personnel.

The aim of the study was to analyze the impact of selected procedures related to childbirth and post-natal care, as well as hospital practices on lactation.

MATERIALS AND METHODS

The study involved 145 women who gave birth in the Department of Foetal Medicine and Gynaecology Pomeranian Medical University in Szczecin located in Police, West Pomeranian Province in Poland. The survey was carried out from April 2014 to October 2014. The research was carried out by a diagnostic survey with a questionnaire of our own authorship. The collected material was analyzed statistically using the χ^2 test.

RESULTS

The study comprised 145 women aged 18–45 years (mean age = 30.6). Most patients surveyed were aged 26–30 years and 31–35 years (36.5% each). The second group consisted of women aged over 36 years (13.8%). 13.1% of patients were in the age group up to 25 years. Among the women surveyed 28.3% were unmarried, while 71.7% were married. Most of the respondents claimed to have had higher education (66.9%), while patients with secondary or primary/vocational education amounted to 22.1% and 11.0%, respectively. As many as 57.9% of the women surveyed indicated a big city as their

place of residence, then a small town 29.0%, and a village 13.1%. Most of the surveyed women gave birth by caesarean section (52.4%), but women giving birth in a natural way were a little less – 47.6%. The data are summarized in Table 1.

Most of the mothers whose infants did not have suctioning of the airway performed breastfed their babies (53.8%). Mothers whose infants had suctioning of the airway performed breastfed less frequently (43.0%), but there was no statistical significance (Tab. 2).

TABLE 2. Maintenance of feeding continuity in relation to the suctioning of the airway procedure

Maintenance of feeding continuity	After birth suctioning the newborn's airway					
	yes		no		I do not know	
	n	%	n	%	n	%
Yes, I still breastfeed exclusively	34	43.0	7	53.8	29	54.7
Partly, I had to introduce milk formula	41	51.9	5	38.5	22	41.5
No, since a problem appeared my baby has been fed with milk formula	4	5.1	1	7.7	2	3.8
Total	79	100.0	13	100.0	53	100.0

Continuity of breastfeeding significantly depended on method of delivery. After vaginal delivery women mostly breast-fed their newborns exclusively (62.3%). In the case of births by caesarean section infants were breast-fed significantly less often (35.5%) – Table 3. This can result from shorter 'skin to skin' contact or cessation because of an infant's health condition.

Continuity of breastfeeding significantly depended on the method of complementary feeding. The most common method of complementary feeding in newborn babies was a bottle. Women who additionally bottle-fed their babies only partially breastfed (72.1%). The infants were still given complementary foods (Tab. 4).

The impact of frequency of attaching an infant at the breast to maintain the continuity of feeding was noted, although the relationship is not statistically significant. Women who attached their newborns at the breast every 2–3 hours and on demand often breastfed exclusively (Tab. 5).

Such feeding problems as lack of food, little food, the impression that the baby was hungry, and additionally nourishing the baby had a significant impact on the continuity of breastfeeding. Patients who had little food or lack of it, had the impression that the baby was hungry and provided additional nourishment to newborns, and only partially sustained breast-feeding (Tab. 6).

Most of the difficulties that occurred in patients while breastfeeding had no significant effect on problems with feeding continuity. No statistically significant relationship between attachment difficulties and feeding continuity was noted (Tab. 7).

TABLE 1. Characteristics of the study group

The age structure of respondents	n = 145	%
Up to 25 years old	19	13.1
26–30 years old	53	36.5
31–35 years old	53	36.5
Over 36 years old	20	13.8
Marital status	n = 145	%
Single	41	28.3
Married	104	71.7
Education	n = 145	%
Primary/Vocational	16	11.0
Secondary	32	22.1
Higher	97	66.9
Place of residence	n = 145	%
A village	19	13.1
A small town	42	29.0
A big city	84	57.9
Type of birth	n = 145	%
Vaginal	69	47.6
Caesarean section	76	52.4

TABLE 3. Maintenance of feeding continuity in relation to the method of delivery

Maintenance of feeding continuity	Type of birth		Total
	vaginal	caesarean delivery	
Yes, I still breastfeed exclusively	43 (62.3%)	27 (35.5%)	70
Partly, I had to introduce milk formula	24 (34.8%)	44 (57.9%)	68
No, since a problem appeared my baby has been fed with milk formula	2 (2.9%)	5 (6.6%)	7
Total	69 (100.0%)	76 (100.0%)	145
The result of the χ^2 test	χ^2	df	p
χ^2 NW	10.6	2	0.005

TABLE 4. Maintenance of feeding continuity in relation to complementary feeding method

Maintenance of feeding continuity	The method of complementary feeding		Not applicable	Total
	bottle	probe		
Yes, I still breastfeed exclusively	19 (20.4%)	1 (100.0%)	50 (98.0%)	70
Partly, I had to introduce milk formula	67 (72.1%)	0 (0.0%)	1 (2.0%)	68
No, since there is a problem my baby is fed with milk formula	7 (7.5%)	0 (0.0%)	0 (0.0%)	7
Total	93 (100.0%)	1 (100.0%)	51 (100.0%)	145
The χ^2 test result	χ^2	df	p	
χ^2 NW	97.0	4	0.000	

TABLE 5. Maintenance of feeding continuity in relation to the frequency of infant attachment at the breast

Maintenance of feeding continuity	Frequency of attachment at the breast				Total
	more than every 2 hours	every 2–3 hours	less often than every 3 hours	on infant's demand	
Yes, I still breastfeed exclusively	11 (44.0%)	34 (49.3%)	1 (14.3%)	24 (54.6%)	70
Partly, I had to introduce milk formula	12 (48.0%)	33 (47.8%)	5 (71.4%)	18 (40.9%)	68
No, since there is a problem my baby is fed with milk formula	2 (8.0%)	2 (2.9%)	1 (14.3%)	2 (4.5%)	7
Total	25 (100%)	69 (100%)	7 (100%)	44 (100%)	145

TABLE 6. Maintenance of breastfeeding continuity in relation to the existing problems associated with feeding

Problems with feeding	Maintenance of feeding continuity					
	yes, still exclusive breastfeeding		partly, I had to introduce milk formula		no, since there is a problem my baby is fed with milk formula	
	n	%	n	%	n	%
No food	3	3.5	13	8.4	3	15
Little food	7	8.1	30	19.5	3	15
Breast Fullness	10	11.6	6	3.9	1	5
The child did not gain weight	5	5.8	14	9.1	1	5
The impression that the baby is hungry	9	10.5	21	13.6	3	15
Health problems	0	0	0	0	1	5
Complementary feeding of the baby	10	11.6	44	28.6	5	25
The infant did not want to suck	4	4.7	10	6.5	1	5
Flat, concave nipples	7	8.1	10	6.5	2	10
Not applicable	31	36.1	6	3.9	0	0
Total	86	100.0	154	100.0	20	100
The result of the χ^2 test, investigating the impact of lack of breast milk on continuity of feeding	χ^2		df		p	
χ^2 NW	11.93379		2		0.00256	
The result of χ^2 test investigating the impact of small amounts of breast milk on continuity of feeding	χ^2		df		p	
χ^2 NW	22.41377		2		0.00001	
The result of χ^2 test investigating the impact of maternal impression that the infant is hungry on maintenance feeding continuity	χ^2		df		p	
χ^2 NW	8.196915		2		0.01660	

TABLE 7. Maintenance of breastfeeding continuity in relation to feeding difficulties

Feeding difficulties	Maintenance of feeding continuity					
	yes, I still breastfed exclusively		partly, I had to introduce milk formula		no, since there is a problem my baby is fed milk formula	
	n	%	n	%	n	%
Correct attachment	23	14.7	34	22.5	2	14.3
Nipple soreness	43	27.4	38	25.2	2	14.3
Assessment of how much an infant has eaten	41	26.1	37	24.5	3	21.5
A large amount of time spent at the breast	13	8.3	13	8.6	2	14.3
Continuous availability	5	3.2	6	4	1	7.1
Proper diet	6	3.8	5	3.3	1	7.1
Exhaustion	20	12.7	14	9.3	1	7.1
Not applicable	4	2.5	2	1.3	2	14.3
Others	2	1.3	2	1.3	0	0
Total	157	100.0	151	100.0	14	100.0

TABLE 8. Maintenance of feeding continuity in relation to the support received

Received support	Maintenance of feeding continuity					
	yes, I still exclusive breastfeed		partly, I had to introduce milk formula		no, since there is a problem my baby is fed milk formula	
	n	%	n	%	n	%
Yes, I received a lot of help	45	64.4	41	60.3	5	71.4
Yes, I received some help, but insufficient	5	7.1	13	19.1	2	28.6
No, I did not receive any help, even though I asked for it	1	1.4	2	2.9	0	0.0
No, I did not need help	19	27.1	12	17.7	0	0.0
Total	70	100.0	68	100.0	7	100.0

TABLE 9. Maintenance of feeding continuity in relation to the person who provided support

Supporting person	Maintenance of feeding continuity					
	yes, I still exclusive breastfeed		partly, I had to introduce milk formula		no, since there is a problem my baby is fed milk formula	
	n	%	n	%	n	%
Paediatrician	7	8.3	10	11.8	0	0.0
Obstetrician	5	6.0	5	5.9	0	0.0
Lactation consultant	13	15.5	10	11.8	0	0.0
Midwife	25	29.8	40	47.0	4	57.1
I did not get help	6	7.1	11	12.9	1	14.3
I did not need help	28	33.3	9	10.6	2	28.6
Total	84	100.0	85	100.0	7	100.0

Competent support with problems related to breastfeeding should be the standard in maternity wards. However, analyzing the continuity of feeding, it was received by only 60.3–71.4% women in childbirth. Most of the patients who received support breastfed their infants exclusively (64.4%). Slightly fewer were patients who, despite the support received, had to partially introduce milk formula (60.3%). As many as 71.4% of women who received support did not breastfeed (Tab. 8). No statistical significance was noted.

The best prepared health care workers to assist in lactation problems are: a midwife/a lactation consultant, neonatologist and obstetrician-gynaecologist. As shown in Table 9, patients with the most common lactation problems could count

on midwives (29.8–57.1%), lactation consultants (11.8–15.5%) and neonatologists (8.3–11.8%). Midwives had a significant impact on continuity of feeding ($p = 0.02$) – Table 9.

DISCUSSION

According to the World Health Organization recommendations, infants should be breastfed exclusively. Partially breastfed infants, in addition to breast milk, are given other types of milk or liquids. The results of this study indicate that 64.1% of newborns received complementary foods. The most common method was bottle feeding. The research of Małańczuk et al.,

also shows a high rate (67.4%) of infants who received complementary foods [2]. However, in the studies by Zgórecka et al., in Obstetrics and Neonatal Departments complementary foods were given to 47.7% of infants [3]. Complementary feeding with modified milk formula is associated with a high risk of shortening exclusive breastfeeding, as well as the total time of breast-feeding [4]. In our study, only 20.4% of women who gave complementary foods to their newborns sustained exclusive breastfeeding.

The most common reason for failure in maintaining the continuity of breastfeeding was lactation problems. The results of this study indicate that 58.0% of respondents complained of painful nipples, insufficient milk supply (27.3%), or lack thereof (13.3%). Correct attachment of a newborn at the breast also caused difficulty (41.3%), as well as assessment of how much the infant ate (56.6%). Mostly, the above problems made the women sustain breastfeeding only partially. The research conducted by Gebuza et al. shows that 14.3% of women suffered from painful nipple damage, whereas 40% women giving birth for the first time and 18.8% more than once had problems with lactation [5]. However, in Józefów et al. studies, primiparas, after giving birth vaginally, complained about the lack of or insufficient lactation (30%), as well as nipple pain (25%). Painful nipples appearing in the early postpartum period are treated as physiological, and according to Nehring-Gugulska et al., appear in 36–90% of women in childbirth [6]. Based on current research, it is concluded that it is of the utmost importance in the course of lactation to provide birth professionals' assistance in these problems after delivery [7]. Also, the results of the conducted analysis show how important medical staff aid and support are in solving lactation problems and difficulties. Our study indicates that in 98.7% of the surveyed patients the help and support of medical staff in breastfeeding during the hospital stay was definitely needed. Such aid was received by 75.8% of the women surveyed. Most women received support and assistance from midwives (47.5%), and to a lesser extent from obstetricians (7.0%) and paediatricians (11.9%). It should be considered why, in 11.9% of the women surveyed, no one provided assistance in solving their problems. The research of Małańczuk et al. indicates that 86.2% of women received support from midwives, 8.5% from neonatologists, and 4.3% from obstetricians. No assistance was obtained by 12.8% of mothers [2]. The Ulman-Włodarz et al. study found that the majority of women surveyed (86.25%) could count on the assistance of medical personnel, particularly midwives [8].

Many authors emphasize the negative impact of caesarean delivery on lactation. Prior, relying on research conducted in 53 centres, shows that the proportion of women after caesarean delivery with normal lactation is lower, and shows that it is particularly disadvantageous to perform a caesarean section before systolic function [9]. The cause of delayed lactation may also be a smaller release of oxytocin during caesarean sections, particularly elective ones, and childbirth before

term, when production of this hormone is still low [10]. Also significant is the fact that the newborns of women giving birth by caesarean section are often separated from their mothers. The 'skin to skin' contact and early attachment of the baby at the breast are impossible, then which can delay the natural triggering of lactation [11]. The results of the analysis indicate that most women after caesarean delivery partially breastfed their infants (57.9%). Complementary foods were given to them more often.

CONCLUSIONS

1. Some hospital practices, such as suctioning the airway, short 'skin to skin' contact after caesarean delivery, and complementary feeding of a newborn baby with a bottle had a negative impact on maintaining lactation.
2. Complementarily feeding an infant with a bottle was a frequent hospital practice. As the procedure has an adverse impact on lactation, breastfeeding should be replaced by complementary feeding in an alternative way only in justified cases.
3. Most of the patients who obtained support during lactation were breastfeeding exclusively. Competent assistance in initiating and maintaining lactation is the responsibility of the medical personnel, and thus there is a necessity for their permanent development, and a constant need to modify hospital practices to ones that affect lactation favourably.

REFERENCES

1. Nehring-Gugulska M. Standardy postępowania w laktacji. *Standardy Med* 2005;2(5):1939.
2. Małańczuk D, Woźniak P, Gulczyńska E, Rudnicka B, Wrońska B, Krasomski G. Ocena wdrażania standardu opieki okołoporodowej w aspekcie „10 kroków do udanego karmienia piersią”. *Gin Pol Med Project* 2014; 2(32):43-53.
3. Zgórecka E, Stolarczyk A, Socha P, Piotrowska-Jastrzębska J, Socha J. Rodzaje mleka i przetwory mleczne w diecie niemowląt z wybranych ośrodków Polskiej Centralnej i Wschodniej. *Pediatr Pol* 2007;82(9):690-749.
4. Woś H, Gawęda A. Przyczyny rezygnacji z karmienia naturalnego dzieci z terenu Górnego Śląska. *Nowa Pediatr* 2007;3:54-9.
5. Gebuza G, Kaźmierczak M, Gierszewska M, Michalska E. Problemy kobiet w połogu i ich przyczyny. *Perinatol Neonatol Ginek* 2010;7(5/6):290-5.
6. Nehring-Gugulska M, Żukowska-Rubik M, Pietkiewicz A. Karmienie piersią w teorii i praktyce. Warszawa: Wyd. Medycyna Praktyczna; 2012.
7. Kiełbratowska B, Preis K. Opieka położnicza po cięciu cesarskim wspierająca karmienie piersią. *Ginek Położ* 2007;2(2):56.
8. Ulman-Włodarz I, Mucha A, Kwiatkowska E. Karmienie naturalne po przebytym porodzie rodzinnym. *Klin Perin Ginek* 2004:74-8.
9. Prior E, Santhakumaran S, Gale C, Philipps LH, Modi N, Hyde MJ. 13 Breast-feeding after caesarean delivery: a systematic review and meta-analysis of world literature. *Am J Clin Nutr* 2012;24(3):293-302.
10. Hill PD, Aldag JC, Demitras H, Naeem V, Parker NP, Zinaman MJ, et al. Association of serum prolactin and oxytocin with milk production in mothers of preterm and term infants. *Biol Res Nurs* 2009;10(4): 340-9.
11. Elliot-Carter N, Harper J. Keeping mothers and newborns together after caesarean: how one hospital made the change. *Nurs Womens Health* 2012;16(4):290-5.