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INFLUENCE OF THE TYPE OF BIRTH AND NUTRITION DURING LACTATION ON THE DURATION OF THE BREASTFEEDING PERIOD IN POLAND

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Abstract

Introduction: According to the World Health Organization (WHO), the best way to nourish a newborn is breastfeeding. Breastfeeding is especially important for infants during the first six months of their lives. The type of labor undoubtedly has an important influence on the initiation and continuation of breastfeeding. It is equally important that women follow the principles of efficient nutrition during lactation. The aim of this study was to assess the impact of demographic factors and knowledge of breastfeeding on the duration of the breastfeeding period in the Polish population.

Material and methods: We used a diagnostic survey. 520 questionnaires were analyzed. Women completed an online survey via a direct link.

Results: 286 women (55%) experienced a spontaneous delivery and 234 women (45%) delivered via caesarean section. The largest group of respondents, 36.7%, demonstrated an average level of knowledge of nutrition during lactation. The knowledge of participants regarding nutrition during lactation depended on their level of education and place of residence, but it did not depend on their age. The duration of the breastfeeding period did not depend on their education, place of residence or age. No significant differences concerning the number of births were detected in the duration of the breastfeeding period. There was also no significant correlation between the duration of the breastfeeding period and the level of women's knowledge of nutrition during lactation.

Conclusions: It seems very important that in the hospital environment there should be a place where women can obtain information about factors affecting the duration of the breastfeeding period.

Key words: Caesarean section, vaginal delivery, breastfeeding, the length of feeding, nutrition during lactation

Introduction

One element that influences the optimal development of a child is breastfeeding. According to the World Health Organization (WHO), the best way to nourish a newborn is breastfeeding. Breastfeeding is especially important for infants during the first six months of their lives. Then it is recommended that breastfeeding should be continued with the simultaneous introduction of complementary foods until the child reaches the age of at least two. Breastfeeding should begin within the first hour of delivery and remain "on demand", available whenever the child needs it [1].

The type of labor undoubtedly has an important influence on the initiation and continuation of breastfeeding. Studies show that newborns and infants are more likely to be breastfed after vaginal delivery compared to caesarean sections. Given the increase in the number of caesarean sections this problem is very significant, and there may be several reasons for it. One of the factors influencing successful breastfeeding is uninterrupted skin-to-skin contact and the initiation of feeding within the first hour of delivery, which in the case of caesarean section is much more difficult. The mother, immobilized and often suffering from pain after surgery, can have a problem with holding the newborn to the breast. It is important to provide support to mothers and families in making decisions about

breastfeeding and nutrition during lactation. Adequate diet and lifestyle of the mother are important for proper infant development, maintaining optimal health, as well as preventing adult diseases [2–4].

The first thousand days of life, starting with conception until the age of two, are extremely important for proper child development. Incorrect nutrition during pregnancy and following delivery may contribute to the onset of obesity, growth deficits or developmental disorders. Therefore, it is important for women to follow the principles of sensible nutrition during pregnancy and lactation. Nutritional habits acquired before pregnancy and lactation may affect the followed used at that time. Mothers are usually willing to change their diet and eating habits for the good of the child and its proper development. They should have up-to-date nutritional knowledge based on the latest guidelines. The correct diet during lactation should be based on specific nutritional recommendations. These involve a balanced diet rich in various food products. It is important that the products used be high quality, fresh and varied [3,5].

The aim of the study was to assess the impact of demographic factors and knowledge of breastfeeding on the duration of the breastfeeding period.

Materials and methods

The study involved 520 women from Poland. A diagnostic internet survey was created. In the first part of the survey, the women were asked about their age, education, marital status and place of residence, as well as on the delivery method and the duration of the breastfeeding period. The next questions concerned the women's level of education and the medical care they were provided with during lactation. The last part of the questionnaire contained ten questions regarding women's knowledge of nutrition during lactation. For each correct answer the respondent received one point. On the basis of the individual score, the respondents were placed in one of three groups, namely, a group of respondents with a low level of knowledge (< 5 points), medium level of knowledge (5–7 points) or high level of knowledge (8–10 points).

The survey was conducted between January and February 2018, in conditions of complete anonymity. The women completed the online survey via a direct link.

Inclusion criteria: Women who agreed to participate in the study, gave birth in Poland and whose children were not older than four years.

Exclusion criteria: Women who breastfeed were excluded from the study unless their children were older than thirty-six months.

The results underwent statistical analysis, which was performed using the computer software PAST. A significance level of 0.05 was used in all tests performed. We estimated the sample size necessary to confirm the differences in the length of the breastfeeding period between groups of women who had experienced vaginal delivery or caesarean section. We assumed a study power of 80%

and an alpha error of 0.05. We also assumed a mean duration of breastfeeding of twelve months and a 10%-difference in the duration of breastfeeding between the groups. The sample size calculation revealed that in the study we should include at least forty-four patients in each group to obtain statistically significant results.

Results

The analysis of the data showed that the largest group of respondents, 38.3%, were in the 26-to-30-year age group, 35.76% of the women were between 31 and 35 years old, 11.66 % of the women were between 20 and 25 years old, 8.48 % of women were between 36 and 40 years old, while women aged under 20 years accounted for 3.7% and over 40 years for 2.1% of the study group. Of the respondents surveyed, the majority (71%) were persons with higher education. Women with secondary education accounted for 24.57%, and the least numerous groups were women with vocational education, 3.26%, and primary education, 1.17%. The majority of respondents (62.3%), lived in a large city, whereas 21.2% lived in the countryside, and 16.5% in a small city. Most women, 81.2%, were married at the time of the study.

A total of 98.6% of women started breastfeeding. In the second month of the child's life, exclusive breastfeeding was declared by 91.9% of respondents. In the fourth month, 73.9% of women and in the sixth month only 46.1% of women declared exclusive breastfeeding. After expanding the child's diet, 26.2% of them continued to breastfeed up to the twelfth month, 14.1% up to the eighteenth month, 7.3% up to the twenty-fourth month, and only 4.6% women up to the thirty-sixth month of life (Figure 1).

A total of 286 women (55%) experienced a vaginal delivery, while 234 (45%) delivered via cesarean section.

No statistically significant ($p < 0.05$) differences were detected regarding the delivery method and the duration of the breastfeeding period (Table 1).

A total of 64.4% of women had experienced their first delivery, and 35.6% had given birth to a subsequent child. The median in the group of women who had given birth for the first time was seven months. In the group of women who had given birth four times or more, half of them fed for at least eleven months. However, the differences did not reach statistical significance (Table 2).

The study showed that 164 respondents (31.5%) demonstrated a low level of knowledge of nutrition during lactation. 191 women (36.7%) demonstrated an average level of knowledge and the group with a high level of knowledge consisted of 165 women (31.8%) (Figure 2).

No statistically significant correlation between the duration of the breastfeeding period and the level of women's knowledge of nutrition during lactation was observed ($R = -0.023$). On contrary, the age of a given group correlated with the duration of the breastfeeding period. Approximately half of the women aged

31–35 years fed for no more than six months. The longest breastfeeding period (median = nine months) was recorded in the oldest group (Table 3).

The women did not differ significantly in terms of their educational status. Furthermore, no statistical differences were observed regarding the place of residence (Table 4).

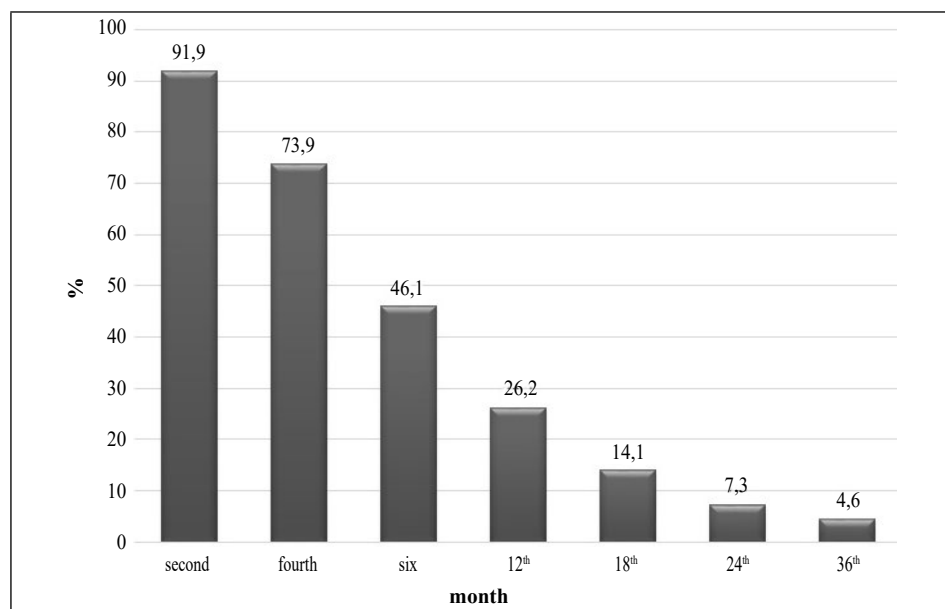


Figure 1. Breastfeeding time after delivery in the Polish population

Table 1. Differences in the duration of breastfeeding with regard to the method of delivery in the Polish population

	Cesarean section			Vaginal delivery			P*
	Median (months)	Min	Max	Median (months)	Min	Max	
How long did you breastfeed your baby?	7	0	42	7	1	40	0,819

* Result of the Mann-Whitney test

Table 2. Differences in the duration of breastfeeding with regard to the number of births in the Polish population

Group	Median (months)	Min	Max	p*
First child	7	0	42	0,778
Second child	8	1	36	
Third child	7	2	30	
Fourth child or above	11	1	18	

* Result of the Kruskal-Wallis test

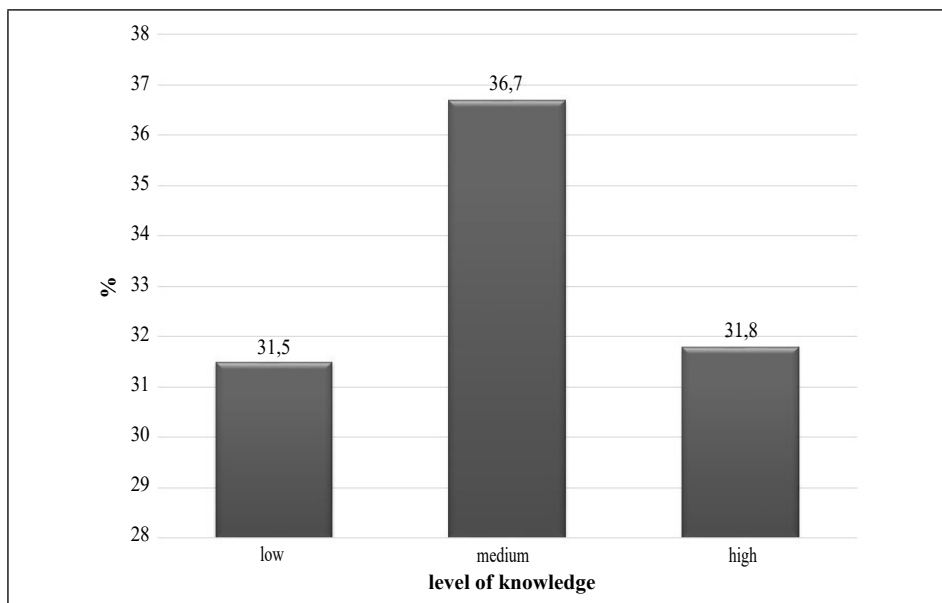


Figure 2. The assessed women's level of knowledge of nutrition during lactation in the Polish population

Table 3. Differences in the duration of breastfeeding time between various age groups in the Polish population

Group	Median (months)	Min	Max	p*
Women under 20 years of age	8.5	1	28	0,04
Women aged 20–25	6.5	0	26	
Women aged 26–30	8.5	1	36	
Women aged 31–35	6	1	42	
Women aged 31–35	7.5	1	40	
Women over 40 years old	9	2	33	

* Result of the Kruskal-Wallis test

Table 4. Differences in the duration of breastfeeding with regard to education and place of residence of the assessed women in the Polish population

Group	Median (months)	Min	Max	p*
Women with primary education or vocational education	8	1	16	0,966
Women with secondary education	6	0	36	
Women with higher education	7	1	42	
Women living in a large city	6	1	42	0,439
Women living in a small town	9	1	36	
Women living in the countryside	8	0	39	

* Result of the Kruskal-Wallis test

Discussion

It is well known that natural feeding has many health benefits for both the child and the mother, and it is very important to encourage as many women as possible to breastfeed. In a study carried out seven years ago by Królak-Olejnik et al. [6] the researchers assessed the implementation of lactation practices in a group of 1,679 mothers of children up to twelve months of age. Exclusive breastfeeding on the day of discharge from the hospital was declared by 75% of all respondents, but this percentage decreased relatively quickly and reached only 43.5% in the second, 28.9% in the fourth and 4% in the sixth month, respectively. In our study, 98.6% of women started breastfeeding. In the second month of the child's life, exclusive breastfeeding was declared by 91.9% of respondents. This percentage remained relatively high in the fourth (73.9%) and sixth (46.1%) month. Moreover, after expanding the child's diet, 26.2% of women continued to breastfeed up to the twelfth month and 4.6% of women did not stop breastfeeding completely until the thirty-sixth.

A very important factor in successful breastfeeding is continuous "skin-to-skin" contact and the initiation of feeding in the first hour after delivery. In their research, Królak-Olejnik et al. [6] pointed out that this contact largely depends on the type of delivery. In the case of caesarean section, 48% of women reported no contact, which was in contrast to vaginal delivery (only 4%). In their studies, Gawęda and Woś [7] also found a significant relationship between breastfeeding a newborn baby and the method of delivery. Although most babies born via caesarean section were fed naturally, almost half of them were fed with formula-modified milk in the first half of their lives. Caesarean section can therefore be considered a risk factor if the mother does not start breastfeeding. Given the increasing percentage of caesarean sections, the problem seems to be very significant.

Hobbs et al. [4] suggest in their study that elective caesarean section is associated with reduced breastfeeding success in the first four months of a child's life compared to natural labor. A planned caesarean section negatively affects the start and duration of breastfeeding, which may be related to reluctance to breastfeed, lack of early feeding initiation and early cessation of breastfeeding. Women who had an unexpected caesarean section are also more likely to fail during their first attempts at breastfeeding, which may be related to stress as a response to complications during labor [8–11].

Unlike the studies cited above, no significant correlation was observed in our study between the method of delivery and the duration of the breastfeeding period. No significant tendency to give up breastfeeding was observed in the group of women who had a planned caesarean section in comparison to the "vaginal delivery" group. This could be explained by rising awareness regarding the benefits of breastfeeding for both the baby and the mother. It is also

possible that women more consciously choose the hospital in which they want to give birth to the child. In the most popular Polish hospitals awarded the title “Child-friendly Hospital” a ten-step program for successful breastfeeding is implemented. The trained staff play an important role there, explaining to the women the benefits of breastfeeding and proper handling during feeding as well as the lack of an objective reason why lactation should be less effective after caesarean section. Immediately after delivery, the baby remains in skin-to-skin contact with the mother and the staff help mothers to start breastfeeding. After caesarean section, newborns remain with the mothers in the “rooming-in” system twenty-four hours a day.

Our study shows that in comparison to previous studies by Królak-Olejnik et al. [6] an increasing percentage of mothers also continue breastfeeding after they expand the infant’s diet. We also observed that the decision to continue breastfeeding was influenced by the age of the mother. Gawęda and Woś [7] reported similar findings. Interestingly, we did not observe a significant correlation with regard to the level of knowledge about diet, the level of education and place of residence. On the contrary, Zielińska et al. [12] and Majchrzak et al. [13] pointed out that insufficient knowledge of proper nutrition during lactation may be one of the reasons for the cessation of breastfeeding.

Conclusions

The method of delivery, the number of previous deliveries and a woman’s knowledge of nutrition during lactation do not seem to significantly affect the duration of the breastfeeding period. On the contrary, the age of a woman seems to correlate with the length of breastfeeding. The level of education and place of residence do not seem to have a significant effect on the duration of the breastfeeding period.

Highly qualified medical staff on obstetric and neonatal wards seem to play a very important role in educating and supporting mothers regarding proper decisions about breastfeeding.

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Wpływ rodzaju porodu i odżywiania w okresie laktacji na czas karmienia piersią w Polsce

Streszczenie

Wprowadzenie: Według Światowej Organizacji Zdrowia (WHO) karmienie mlekiem matki jest najlepszym sposobem odżywiania niemowląt. Szczególnie istotne dla niemowląt jest wyłączone karmienie piersią w pierwszych sześciu miesiącach życia. Duże znaczenie dla rozpoczęcia i kontynuacji karmienia piersią ma rodzaj odbytego porodu. Równie ważne jest, by kobiety w okresie laktacji przestrzegały zasad efektywnego żywienia. Celem pracy była próba oceny wiedzy na temat karmienia piersią i czynników demograficznych wpływających na długość karmienia piersią w Polsce.

Metody i materiały: W badaniu wykorzystano metodę sondażu diagnostycznego. Analizie poddano 520 ankiet. Kobiety wypełniły ankietę on-line za pomocą bezpośredniego linku.

Wyniki: 286 kobiet (55%) urodziło siłami natury, a u 234 kobiet (45%) ciążę rozwiązano cięciem cesarskim. Najlicniejsza grupa badanych, 36,7%, reprezentowała średni poziom wiedzy na temat żywienia w okresie laktacji. Poziom wiedzy badanych kobiet na temat odżywiania w okresie laktacji zależał od wykształcenia, miejsca zamieszkania, ale nie od wieku. Długość karmienia piersią nie zależała od wykształcenia, miejsca zamieszkania oraz od wieku kobiet. Nie zaobserwowano różnic w czasie trwania karmienia piersią w zależności od liczby porodów jakie miała kobieta. Nie wykazano również istotnej korelacji pomiędzy długością karmienia piersią a poziomem wiedzy kobiet na temat odżywiania w okresie laktacji.

Wnioski: Rozważając problematykę oceny czynników wpływających na długość karmienia piersią bardzo ważne wydaje się, aby w warunkach szpitalnych nie zabrakło miejsca na wsparcie informacyjne.

Słowa kluczowe: cięcie cesarskie, poród siłami natury, karmienie piersią, długość karmienia, żywienie w okresie laktacji