

SKIN-TO-SKIN CONTACT AFTER CAESAREAN SECTION: IMPACT ON THE OCCURRENCE OF PROBLEMS DURING THE INITIATION OF LACTATION

NELA KAMEDUŁA¹ A-G
• ORCID: 0000-0002-9560-4207

PIOTR WĘGRZYN² A
• ORCID: 0000-0002-9876-8493

Grażyna Bączek³ A,G
• ORCID: 0000-0001-7897-9499

¹ Medical University of Warsaw, Poland

² Department of Obstetrics and Perinatology, Medical University of Warsaw, Poland

³ Department of Obstetrics and Gynecology Didactics, Medical University of Warsaw, Poland

A – study design, B – data collection, C – statistical analysis, D – interpretation of data, E – manuscript preparation, F – literature review, G – sourcing of funding

ABSTRACT

Background: Breastfeeding is the best method to feed newborns, infants and young children. A caesarean section may have a negative impact on breastfeeding success which, given the high percentage of surgical deliveries in Poland, is alarming. A beneficial effect of skin-to-skin contact after a caesarean section on breastfeeding indicators has been reported.

Aim of the study: The purpose of this study is to evaluate the relationship between the type of first contact between mother and child after a surgical delivery, and the occurrence of problems during the lactation initiation period.

Materials and methods: 256 women that had a caesarean section at one of the Warsaw hospitals during a six-month period were included in the study. Women who had a delivery earlier than 37 weeks of pregnancy were excluded. A questionnaire designed by the author was used for data collection.

Results: Newborns without skin-to-skin contact or those who experienced a delayed contact required more frequent top-up feeding and their mothers more often experienced a sense of insufficient breast milk supply. Newborns who experienced skin-to-skin contact in the operating theatre also required less frequent top-up feeding compared to than those who experienced skin-to-skin contact in the recovery room.

Conclusions: The type of first contact between mother and child after a caesarean section affects the occurrence of problems during the lactation initiation period. Despite the demonstrated benefits of skin-to-skin contact, it is not executed frequently enough after birth.

KEYWORDS: breastfeeding, caesarean section, skin-to-skin contact

BACKGROUND

Breastfeeding is the best way to feed newborns, infants and young children [1]. Polish breastfeeding rate indicators are unsatisfactory, with only 13% of babies fed with the mother's milk until six months of age [2]. Surgical delivery may constitute a risk factor for poor breastfeeding [3], as it may contribute

to delayed lactogenesis II, an extended time between birth and the first feeding, and top-up feeding with formula milk [4,5]. The caesarean section rate in Poland is 43.85% [6]. As nearly half of Polish children are delivered by a caesarean section, it is necessary to take measures to minimize the impact of this delivery type on successful breastfeeding. This may be achieved by ensuring ideal conditions for correct lac-

tation initiation [3,5]. One of the critical procedural elements for the initiation of breastfeeding is proper first postpartum contact between the mother and the baby, regardless of the delivery type. Skin-to-skin (STS) contact initiated immediately after a caesarean section has been shown to have a beneficial effect on breastfeeding indicators [4,5,7,8]. Newborns placed directly on the mother's naked chest start sucking faster [9] and are more often exclusively breastfed upon discharge from the hospital. Breastfeeding is also more likely to continue for a few months after discharge [8]. In addition, mothers who have experienced STS contact demonstrate lower pain and stress levels, and higher delivery satisfaction levels. These mothers also demonstrate a higher sense of self-efficacy, which can contribute to successful breastfeeding [10, 11]. Therefore, STS contact can be considered the most natural and beneficial way for a mother and child to welcome each other after birth [11, 12].

AIM OF THE STUDY

The purpose of this study is to evaluate the relationship between the type of first contact between mother and child after a surgical delivery and the occurrence of problems in the lactation initiation period. The main problems occurring during this period include latching on of the baby, the sense of insufficient breast milk production, and the need to top-up feed the baby with formula milk.

MATERIAL AND METHODS

Study design

This cross-sectional study was carried out with the use of the diagnostic survey method from October 2016 to March 2017. An anonymous questionnaire designed by the author was used to collect the data.

Setting

The questionnaire was completed by maternity ward patients at Warsaw hospitals. At the same time, the electronic questionnaire was made available to internet users associated with social networking groups for mothers who have undergone a caesarean section.

Participants

The inclusion criterion included undergoing a surgical delivery procedure at a hospital in Warsaw

after the 37th week of gestation. Premature delivery, a newborn requiring care in a neonatology ward, and no desire to breastfeed the baby were the exclusion criteria. In total, two hundred and fifty-six (256) women were included in the study. The characteristics of the study population are summarized in Table 1. No contraindications for staying with the mother were found for any of the newborns and all respondents roomed with their babies. The procedures included in the Perinatal Care Standard, complying with the World Health Organization's (WHO) guidelines on good breastfeeding practices, were in place in all the wards [13,14]. All subjects gave informed consent to participate in the study.

Table 1. Statistical differences between the variables

Variables	Type of contact with the baby after childbirth (no skin-to-skin contact, immediate post-partum contact, deferred contact)	Place where the first contact was initiated (operating theatre/recovery room)
Top-up feed	P1=0.00000482	P1=0.022873601
Lactation problems	P1=0.133353479	—
Limited breast milk supply	P1=0.006171934	P1=0.560396059
Difficulty latching the baby on the breast	P1=0.13247501	—

Data sources/measurement

The questionnaire was developed based on a review of current literature. The questionnaire consisted of 37 questions, including single-choice and multiple-choice closed questions, and open-ended questions. The questions concerned the care of a woman and a child after cesarean section, with particular emphasis on lactation care.

Statistical methods

The data were statistically analyzed using IBM SPSS Statistics 23. The Chi-square test was used for two variables, along with non-parametric Kruskal-Wallis H and Mann-Whitney U tests. The non-parametric tests were employed because the distribution of the variables in all compared groups deviated in a statistically significant way from a normal distribution (Kolmogorov-Smirnov test, $p < 0.01$). The statistical significance level for all tests was set at $p < 0.05$.

RESULTS

Descriptive data

STS contact immediately after delivery was confirmed by 44% of the respondents. A delay in STS contact after being transferred to the general room in the maternity ward was reported by 10% of the respondents, while no SDS contact was reported by 46%. Among the respondents group who reported postpartum STS contact, 57% indicated that the contact had taken place in the operating theatre (OT), while for 43% it was in the recovery room (RR).

The most frequently chosen answer to the statement *I had lactation problems was definitely not* (24%). However, the respondents answered *definitely yes* (23%) similarly often. The answers *probably yes* and *probably not* were given by 20% of the women. 13% of mothers found it difficult to respond to this statement. The total answer pool indicates that 44% of the surveyed women did not report the occurrence of lactation problems, and 43% confirmed the occurrence of a problem.

Over a half (59%) of the respondents gave a negative answer when asked whether they had difficulties with latching the baby on, while 29% replied positively (the total of the *definitely* and *probably yes / no* answers). For 12% of the respondents, answering this question was difficult.

Another statement that the respondents were asked to respond to was related to a low breast milk supply. In total, 48% of the respondents faced this

problem and 43% did not report an occurrence of this problem (the total of responses *definitely* and *probably yes / no*). The remaining respondents (9%) stated that it was difficult to answer this question. During the hospital stay, 70% of the surveyed mothers gave their babies top-up feedings with formula milk, while 30% did not undertake this practice.

There were statistically significant differences between the occurrence of top-up feeding and type of contact with the mother after birth (Chi-square [2; N=256]=24.49; $p < 0.05$). The women deprived of the STS contact opportunity exhibited the largest percentage in the group that top-up fed their babies. In the group that did not top-up feed the babies, the largest percentage were the women who had experienced STS contact in the OT or RR (Figure 1). Another analysis focused on checking if there were any differences between the group in which the contact had been initiated in the OT and the group that experienced it in the RR. In this case, the Chi-square test results were also statistically significant (χ^2 [1; N=213]=5.18; $p < 0.05$). In the group of women who did not top-up feed their babies, more women had STS contact with their babies in the OT than in the RR. There were no other significant differences among the women who top-up fed their newborns (Figure 2).

Statistically significant differences across the compared groups for insufficient breast milk supply were discovered using the Kruskal-Wallis H test (χ^2 [2]=8.20; $p < 0.05$). The problem was reported significantly less often by women who experienced STS contact in the OT or RR ($M_{\text{rank}}=140.79$) compared to

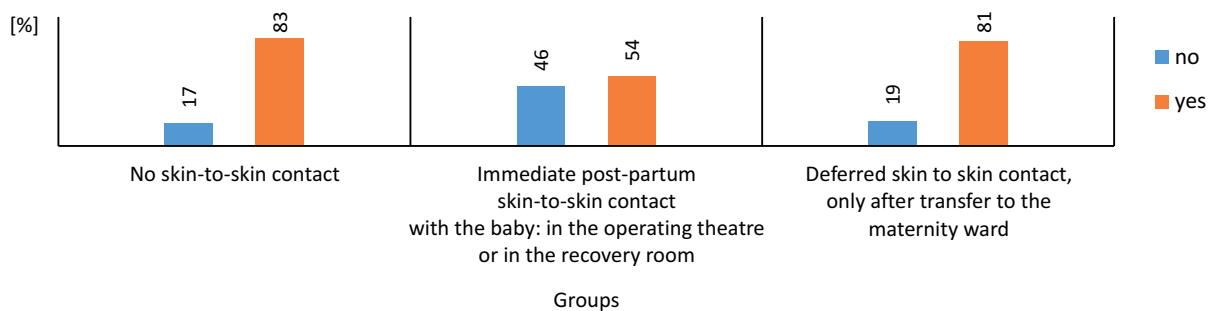


Figure 1. Attitude to the statement: *During the hospital stay, my baby was given top-up feed with formula milk*, depending on the type of contact with the child after delivery (N=256)

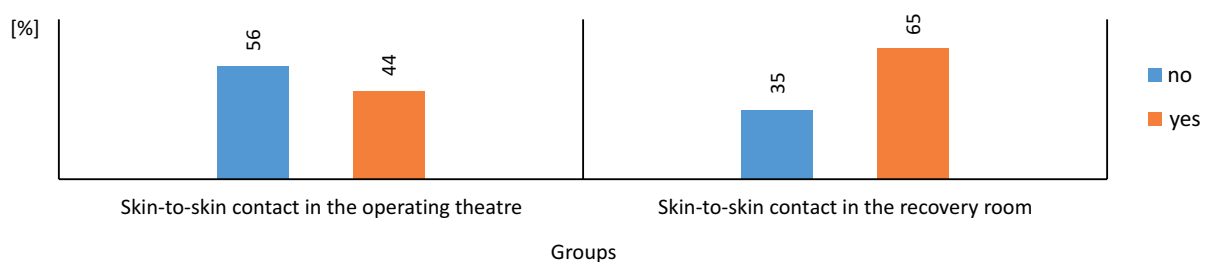


Figure 2. Attitude to the statement: *During the hospital stay, my baby was given top-up feed with formula milk*, depending on the place where the skin to skin contact was initiated (N=113)

those where STS contact was delayed ($M_{\text{rank}}=106.35$; $p<0.05$; Figure 3).

Kruskal-Wallis H tests revealed statistically significant differences across the compared groups for the occurrence of lactation problems ($\chi^2[2]=7.79$; $p<0.05$). Lactation problems were reported least often by women who experienced STS contact in the OT or RR ($M_{\text{rank}}=142.54$). The women who were deprived of the STS contact opportunity exhibited the largest percentage in the group where lactation problems occurred ($M_{\text{rank}}=116.21$; the difference was significant, $p<0.05$). The difference between the women who experienced delayed STS contact in the maternity ward ($M_{\text{rank}}=122.75$) was not statistically significant compared to the other two groups ($p=0.240$ and $p=0.738$; Figure 4).

Kruskal-Wallis H tests also revealed statistically significant differences in latching the baby on across the compared groups ($\chi^2[2]=10.50$; $p<0.05$). The women who experienced STS contact with their babies in the OT or RR ($M_{\text{rank}}=142.85$) had the least problems. The mothers whose STS contact with the baby was delayed ($M_{\text{rank}}=107.21$) experienced most problems. This difference was statistically significant ($p<0.05$). The women who experienced STS contact in the OT or RR had fewer problems latching their babies on ($M_{\text{rank}}=142.85$) than the women who did not experience STS contact ($M_{\text{rank}}=115.81$). This difference was also significant ($p<0.05$). Nonetheless, no significant differences were found between the mothers whose SDS contact was delayed and those who did not experience the STS contact ($p=0.546$; Figure 5).

DISCUSSION

Key results

In line with the Perinatal Care Standard, a newborn should be provided with immediate, uninterrupted, two-hour postpartum STS contact with the mother. During this contact, the first breastfeeding should be initiated [13,15]. In child-friendly hospitals, 80% of women after natural labor or caesarean section under regional anesthesia should experience STS contact within 5 minutes after delivery and STS ought to last at least one hour. If mothers who have undergone surgery under general anesthesia are also taken into account, this percentage may drop to 50% [15]. Today, most caesarean sections are performed under regional anesthesia, which further facilitates the establishment of immediate STS contact [5]. Data from the *Rodzić po Ludzku* [Childbirth with Dignity] Foundation demonstrates that the level of implementation of these recommendations is very low in Poland. According to a 2018 report, only 8.1% of the surveyed women experienced a properly conducted

STS contact immediately after caesarean section [16]. These results differ from those obtained in the current study, where over 40% of the respondents experienced immediate postpartum STS contact with the baby. However, taking into account the UNICEF and WHO recommendations [14], this percentage is still unsatisfactory. As 98% of the newborns were born in good condition, it is likely that non-medical reasons gave rise to the insufficient frequency of STS contact. The studies conducted by Balatero et al. show that organizational barriers most commonly limit STS contact after caesarean section [17].

Interpretation

Given the advantages of early STS contact established after caesarean section, the present situation is worrisome. Indeed, the current study demonstrated a correlation between the type of first contact and the frequency of top-up feeding. Babies whose STS contact was initiated immediately postpartum, while still in the OT, were top-up fed less frequently. This relationship has been confirmed by many researchers. Hung and Berg found a 41% decrease in top-up feeding after the introduction of an immediate STS contact procedure following caesarean section [12]. Vila-Candel et al. also demonstrated a relationship between the type of postpartum contact and baby feeding-type at the time of discharge from the maternity ward [8]. In addition, Bramson et al. found that immediate postpartum STS contact influenced whether babies were exclusively breastfed during their stay in the ward [18].

The influence of early STS contact after caesarean section on breastfeeding maintenance has also been described [7, 19, 20]. According to Spanish researchers, low breast milk supply is the most frequently mentioned reason for breastfeeding discontinuation [8]. The present study indicated that insufficient breast milk supply is much more common in mothers whose STS contact with the baby was either absent or delayed. Crenshaw has also reported that mothers who had the first contact with newborns in accordance with established guidelines felt that they had a greater milk supply and therefore breastfed longer, with a less frequent need to top-up feed the babies [9]. Other studies have shown a relationship between the type of first contact and latching effectiveness. Healthy newborns that established STS contact with their mothers demonstrated the best breast-sucking ability [7,21,22]. In the current study, we observed that the respondents who had an early STS contact with the baby were the least likely to report difficulties with breast latching. Thus, this factor seems to be of great importance. Maliszewska et al. reported that a higher breastfeeding satisfaction level in the first week postpartum increases the chance

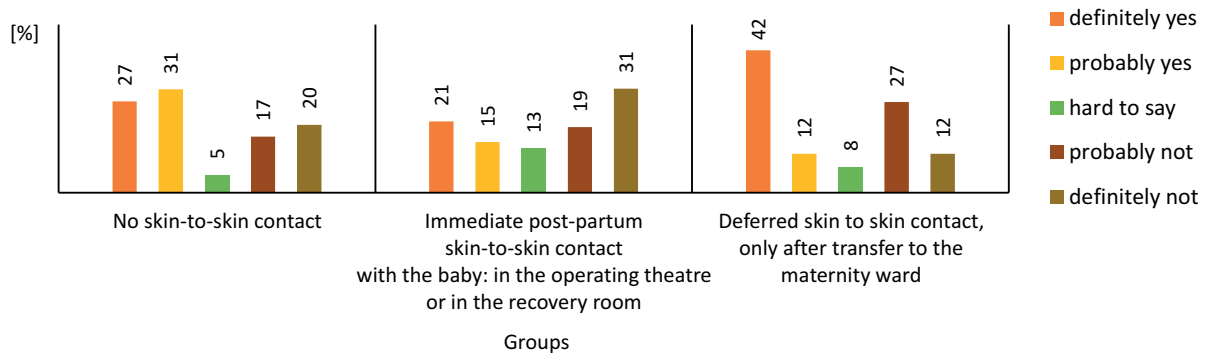


Figure 3. Attitude to the statement: I experienced insufficient breast-milk supply, depending on the type of contact with the child after delivery (N=253)

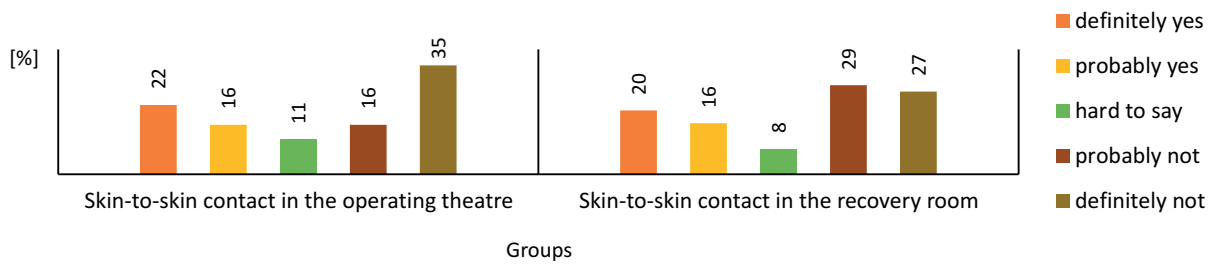


Figure 4. Attitude to the statement: I experienced insufficient breast-milk supply, depending on the place where skin-to-skin contact was initiated (N=113)

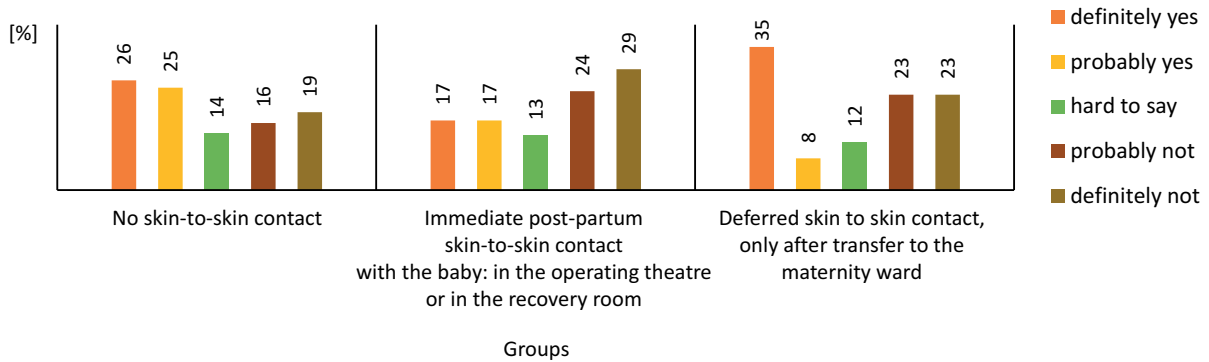


Figure 5. Attitude to the statement: During my stay at the hospital ward I experienced lactation problems, depending on the type of contact with the child after delivery (N=253)

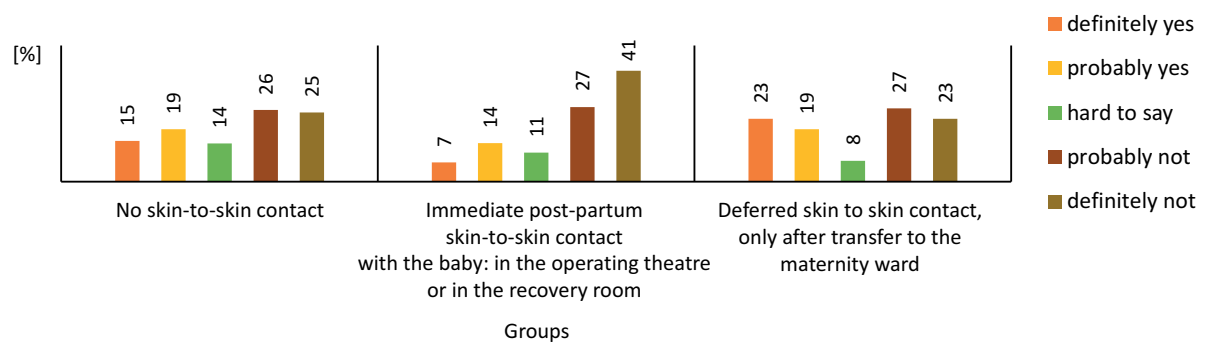


Figure 6. Attitude to the statement: I found it difficult to latch the baby to my breast, depending on the type of contact with the baby after delivery (N=253)

of breastfeeding continuation in the first sixth month of a baby's life [3].

Limitations of the study

This study only examined the type of first contact after the caesarean section. It is an important, though not the only factor, that determines the occurrence of lactation initiation problems. Further studies investigating the significance of other factors that delay lactogenesis II are necessary. It will also be particularly important to identify objective indicators of insufficient breast milk production, as the respondents' subjective assessment does not suffice.

REFERENCES

1. AAP. Section on breastfeeding. Breastfeeding and the use of human milk [online] [cit. 5.11.2020]. Available from URL: <http://pediatrics.aappublications.org/content/early/2012/02/22/peds.2011-3552.full.pdf+html>.
2. Maliszewska KM, Bidzan M, Świątkowska-Freund M. Socio-demographic and psychological determinants of exclusive breastfeeding after six months postpartum: a Polish case – cohort study. *Ginekol Pol* 2018; 89(3): 153-158.
3. Hobbs A, Mannion CA, McDonald SW, et al. The impact of caesarean section on breastfeeding initiation, duration and difficulties in the first four months postpartum. *BMC Pregnancy Childbirth* 2016; 16: 1-9.
4. Stevens J, Schmied V, Burns E, et al. Immediate or early skin-to-skin contact after a caesarean section: a review of the literature. *Matern Child Nutr* 2014; 10(4): 456-473.
5. Isik Y, Dag ZO, Tulmac OB. Early postpartum lactation effects of caesarean and vaginal birth. *Ginekol Pol* 2016; 87(6): 426-430.
6. Wielgoś M, Bomba-Opoń D, Bręborowicz GH, et al. Recommendations of the Polish Society of Gynecologists and Obstetricians regarding caesarean sections. *Ginekol Pol* 2018; 89(11): 644-657.
7. Moore ER, Bergman N, Anderson GC, et al. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev* 2016; 11(11): CD003519.
8. Vila-Candel R, Duke K, Soriano-Vidal F, et al. Effect of early skin-to-skin mother infant contact in the maintenance of exclusive breastfeeding: experience in a health department in Spain. *J Hum Lact* 2018; 34(2): 304-312.
9. Crenshaw J. Healthy Birth Practice #6: keep mother and newborn together—it's best for mother, newborn, and breastfeeding. *Journal Perinat Educ* 2019; 28(2): 108-115.
10. Wagner DL, Lawrence S, Xu J, et al. Retrospective chart review of skin-to-skin contact in the operating room and administration of analgesic and anxiolytic medication to women after caesarean birth. *Nurs Womens Health* 2018; 22(2): 116-125.
11. Brubaker LH, Paul IM, Repke JT, et al. Early maternal-newborn contact and positive birth experience. *Birth* 2019; 46(1): 42-50.
12. Hung KJ, Berg O. Early skin-to-skin after cesarean to improve breastfeeding. *Am J Matern Child Nurs* 2011; 36(5): 318-324.
13. Rozporządzenie Ministra Zdrowia z dnia 20 września 2012 r. w sprawie standardu organizacyjnego opieki okołoporodowej. *Dz.U.* 2018 poz. 1756. (In Polish).
14. Kremaska A, Zych B, Wróbel R, Kraśnianin E, Jeżowska M. Women's expectations and preferences for care of the newborn in the immediate postpartum period. *Med Sci Pulse* 2020; 14(2): 30-35.
15. UNICEF/WHO. Baby-Friendly Hospital Initiative: Revised, Updated and Expanded for Integrated Care (2009). Section 1: Background and Implementation [online] [cit. 5.11.2020]. Available from URL: http://apps.who.int/iris/bitstream/10665/43593/1/9789241594967_eng.pdf (access 2020.11.05).
16. Fundacja Rodzić po Ludzku. Raport z monitoringu oddziałów położniczych. Opieka okołoporodowa w Polsce w świetle doświadczenia kobiet [online] [cit. 30.12.2019]. Available from URL: https://www.rodzicpoludzku.pl/images/RAPORT_FRpL_2018.pdf. (In Polish).
17. Balatero JS, Spilker AF, McNiesh SG. Barriers to skin-to-skin contact after cesarean birth. *Am J Matern Child Nurs* 2019; 44(3): 137-143.
18. Bramson L, Lee JW, Moore E, et al. Effect of early skin-to-skin mother–infant contact during the first 3 hours following birth on exclusive breastfeeding during the maternity hospital stay. *J Hum Lact* 2010; 26(2): 130-137.
19. Dekker R. The evidence for skin-to-skin care after a caesarean. *Evidence Based Birth* [online] [cit. 8.11.2019]. Available from URL: <https://evidencebasedbirth.com/the-evidence-for-skin-to-skin-care-after-a-caesarean/>.
20. Gregson S, Meadows J, Teakle P, et al. Skin-to-skin contact after elective caesarean section: investigating the effect on breastfeeding rates. *Br J Midwifery* 2016; 24(1): 18-25.
21. Rowe-Murray HG, Fisher JRW. Operative intervention in delivery is associated with compromised early mother infant interaction. *BJOG* 2001; 108(10): 1068-1075.
22. Altuntas N, Turkyilmaz C, Yildiz H, et al. Validity and reliability of the infant breastfeeding assessment tool, the mother baby assessment tool and the LATCH scoring system. *Breastfeed Med* 2014; 9(4): 191-195.

Word count: 2175

• Tables: 1

• Figures: 6

• References: 22

Sources of funding:

The research was funded by the authors.

Conflicts of interests:

The authors report that there were no conflicts of interest.

Cite this article as:

Kameduła N, Węgrzyn P, Bączek G.

Skin-to-skin contact after caesarean section: impact on the occurrence of problems during the initiation of lactation.

Med Sci Pulse 2021; (15) 2: 8–14. DOI: 10.5604/01.3001.0014.9135.

Correspondence address:

Grażyna Bączek

Medical University of Warsaw,

Department of Obstetrics and Gynecology Didactics

14/16 Litewska Str.

E-mail: gbaczek@wum.edu.pl

Received: 16.12.2020

Reviewed: 05.03.2021

Accepted: 26.05.2021