

Factors determining preferences of postpartum women regarding subsequent delivery mode

Czynniki determinujące preferencje położnic odnośnie rodzaju kolejnego porodu

WIOLETTA BARAN^{1/}, JOANNA SKRĘT-MAGIERŁO^{2, 3/}

^{1/} Szpital Specjalistyczny PRO-FAMILIA w Rzeszowie

^{2/} Instytut Położnictwa i Ratownictwa Medycznego, Uniwersytet Rzeszowski

^{3/} Kliniczny Oddział Ginekologii i Położnictwa, Kliniczny Szpital Wojewódzki nr 1 im. F. Chopina w Rzeszowie

Wprowadzenie. Naturalną drogą przyjścia na świat noworodka jest poród pochwowy. W ostatnich latach obserwuje się jednak znaczny wzrost odsetka cięć cesarskich, wynikających także ze wskazań pozapołożniczych. Tymczasem operacja ta wiąże się z ryzykiem pojawienia się wielu powikłań i powinna być wykonywana tylko w sytuacji, kiedy poród naturalny faktycznie nie jest możliwy.

Cel. Ocena czynników determinujących preferencje co do sposobu ukończenia ciąży w opinii położnic.

Materiały i metody. Badania przeprowadzono metodą sondażu diagnostycznego wśród 100 położnic z trzech szpitali z terenu miasta Rzeszowa za pomocą autorskiego anonimowego kwestionariusza ankiety, w okresie od listopada 2013 r. do końca stycznia 2014 r. Uzyskane dane wprowadzono do arkusza kalkulacyjnego i poddano analizie statystycznej za pomocą programu Statistica 10.0.

Wyniki. Prawie 70% położnic preferuje poród naturalny. Pozostała część respondentek opowiedziała się za cięciem cesarskim. Na wybór porodu naturalnego wpłynął poród naturalny w przeszłości (66%). Tylko 16% kobiet preferujących cięcie cesarskie odbyło w przeszłości poród naturalny. Preferencje względem cięcia cesarskiego wynikały z ukończenia ostatniego porodu tym sposobem ze wskazań nagłych (44%) oraz cięciem cesarskim elektywnym (41%). Większość zwolenniczek cięcia cesarskiego (84%) i porodu naturalnego (57%) to kobiety w wieku 26-35 lat. Dodatkowo 41% kobiet preferujących cięcie cesarskie i tylko 15% zwolenniczek naturalnego ukończenia ciąży w swoim wyborze kierowała się chęcią ułatwienia przyjścia na świat noworodka. Inne czynniki, tj. chęć uniknięcia bólu porodowego, poziom wykształcenia, wartość wskaźnika BMI, liczba przebytych porodów oraz stopień odczuwania bólu porodowego nie wpłynęły istotnie statystycznie na obecne preferencje badanych kobiet wobec sposobu ukończenia ciąży.

Wnioski. Mimo rosnącej popularności cięcia cesarskiego kobiety rozumieją korzyści płynące z naturalnego ukończenia ciąży. Na obecne preferencje respondentek wpływają: sposób ukończenia ciąży, wiek oraz chęć ułatwienia przyjścia na świat noworodka.

Słowa kluczowe: poród naturalny, cięcie cesarskie, preferencje

Introduction. Vaginal birth is a natural way of baby delivery. However, in recent years a significant increase in caesarean sections can be observed. Many of the C-sections result from non-obstetric indications. Nevertheless, during this operation many complications may occur. Therefore it should be performed only when it is impossible to deliver a baby naturally.

Aim. To investigate factors that determine postpartum women's preferences concerning the mode of delivery.

Material & Method. The study included 100 postpartum women from 3 hospitals in Rzeszow. The diagnostic survey method was applied. The respondents were interviewed with a self-devised questionnaire, between November 2013 and January 2014. The collected data was entered into a spreadsheet and was analyzed with the Statistica 10.0 software.

Results. Almost 70% of the postpartum women preferred vaginal birth. The rest of the respondents were in favor of caesarean section. It was the experience of natural childbirth in the past that influenced the choice of vaginal delivery (66%). Only 16% of the women who preferred caesarean section had vaginal childbirth in the past. The preference for caesarean section was shaped by the fact that the previous delivery was by an emergency C-section (44%) or an elective caesarean section (41%). The most of mothers who preferred caesarean section (84%) and vaginal birth (57%) were 26-35 years old. As many as 41% of the women who preferred caesarean section and only 15% of the respondents who preferred vaginal childbirth took into account the will to facilitate the birth of their child. Another factors, such as the desire to avoid labour pain, the level of education, BMI, the number of given births and the perception of labour pain did not have any significant relationship with the current preferences of respondents regarding the mode of delivery.

Conclusion. Despite the increasing popularity of caesarean section, women understand the advantages of natural childbirth. Present preferences of the respondents were influenced by the mode of delivery, age and the desire to facilitate the birth of a newborn.

Key words: natural childbirth, caesarean section, preferences

© Hygeia Public Health 2016, 51(3): 275-280

www.h-ph.pl

Nadesłano: 25.05.2016

Zakwalifikowano do druku: 05.09.2016

Adres do korespondencji / Address for correspondence

mgr Wioletta Baran

Szpital Specjalistyczny PRO-FAMILIA w Rzeszowie

ul. Witolda 6B, 35-302 Rzeszów

tel. 791 99 43 80, e-mail: wioletta.b@tlen.pl

Introduction

Natural childbirth, which takes place without any interference during its course and with good health of parturient and the foetus and then of the postpartum woman and the newborn, is ideal in obstetrics. Natural labour is defined as a series of spontaneous processes which lead to the expulsion from the uterus, in the natural way and with the little help from an obstetrician, of all elements of the ovum such as foetus, amniotic fluid and afterbirth, thus ending the pregnancy when the fetus has reached the capacity to live outside the uterus [1].

An indispensable element of every childbirth is the pain which can cause anxiety and tension, and therefore indirectly complicate parturition. For this reason, the obstetrician ought to eliminate pain of the childbirth not only for ethical reasons, but also because of the well-being of the labouring woman and the foetus. The release of catecholamines by the sympathetic nervous system under the influence of pain increases the workload of the heart and decreases the perfusion of the placenta, which can lead to the perinatal hypoxia. The resulting hyperventilation of the parturient due to pain and compensation of respiratory disorders can lead to metabolic acidosis. This affects the muscle of the uterus and interferes with the coordination of contractions which complicates the parturition [2].

The pressure on the tissues of the pelvic floor, which results from the course of natural childbirth, can damage these structures. The main postpartum complications include perineal tears, hematomas, fistulas, suture through the rectum, cervical injury, gas, fecal and urinary incontinence, disruption of perineal wound. Due to the possibility of the appearance of the above mentioned complications, it is necessary to acquaint the women with the risk factors for injuries before the labour. Correct protection of perineal tissues and their proper dressing after childbirth should also be done.

In the last twenty years the percentage of caesarean sections has significantly increased. The WHO as well as the American Congress of Obstetricians and Gynecologists (ACOG) (opinion dating from 2000) recommend that the frequency of caesarean sections should not exceed 10-15%. According to the global references, the percentage of caesarean sections can be determined now between 15-25%. However, in particular centers it happens to be higher. A Caesarean section (*sectio caesarea*) is a surgery in which foetus and afterbirth are taken out through the mother's abdomen. This operation reduces the frequency of perinatal newborn mortality although in comparison with the natural ending of labour it is associated with two to four times higher maternal mortality. Therefore

having in mind mutual benefits of such a delivery, before the decision to perform the caesarean section, a broad medical indication for both mother and the baby should be presented. Despite the evident development of medical caesarean section, like any surgery it carries a certain risk of not only intraoperative complications but also in the postpartum period. During the operation there may occur damage of the ureters, bowels and urinary bladder, bleedings, amniotic fluid embolism, choking with gastric content. Among postpartum complications we can distinguish intestinal obstruction, urinary tract and postoperative wound infection, peritonitis, endometritis, venous thromboembolism [3-5].

Caesarean section has a growing rate because it is considered to be a less traumatic method of childbirth. Numerous studies have shown that the benefits from the operational completion of pregnancy are small. Moreover, there is no clear data showing that caesarean section is better than vaginal delivery. The situation is complicated by the fact that there are differences in adaptation to the extrauterine life of both full term and premature infants, which results from the gestational age and is also connected with the method of ending the pregnancy. A number of studies show that physiological changes associated with natural labour are necessary for the correct maturation of fetus' lungs [6].

Aim

To evaluate the factors influencing the preferences for a method of delivering a baby in the opinion of postpartum women.

Material and method

The studies were conducted from November 2013 till the end of January 2014 on a group of 100 postpartum women staying at the obstetric-neonatal ward from the 1st-3rd day after birth in 3 Rzeszow hospitals: John Paul II Municipal Hospital, F. Chopin Provincial Specialist Hospital, St. Queen Jadwiga Provincial Hospital. The mentioned hospitals have a third referral level. All the postpartum women staying at the maternity wards in the above-mentioned hospitals during the data collection period were included into the study, regardless of their age, obstetric history and other factors. Before starting the studies permission from the management of hospitals was obtained.

The diagnostic survey method in the form of an original anonymous questionnaire was applied. It consisted of 26 questions, including 3 open questions pertaining to the respondents' age, height and weight before their last birth. The questionnaire was created based on the collected literature. The initial questions concerned socioeconomic factors of the surveyed

women, while further ones were connected with obstetrical issues. Some of the questions allowed giving multiple answers. The respondents were informed about the purpose of the research and its anonymity and after expressing oral agreement they were included in the study.

The statistical analysis of the material was carried out in the Statistica 10.0. software and selected correlations were statistically analyzed by appropriate tests. The result of a statistical test is the so-called test probability (p), the small values of which imply statistical significance of a given correlation. Hence, the following principles were employed: $p=0.05$ – statistical significance level (*); $p=0.01$ – high statistical significance level (**); $p=0.001$ – extremely high statistical significance level (***)

The described correlations were statistically analyzed with the use of Pearson's chi-square test. This test is applied to analyze sets of qualitative (not numerical) data. It evaluates if there is any dependence between two analyzed variables. In case of pain intensity (VAS) Mann-Whitney U test, which allows for a reliable comparison of very small sample sizes, was used.

Results

The mean age of postpartum women was 29.4 years. The women were mostly residents of rural areas (59%) and cities with a population of more than 100 000 inhabitants (22%). The respondents had mainly higher education (52%), then secondary education (28%), Bachelor's degree (10%), vocational (7%) and primary (3%). 92% of the postpartum women were married, while the rest of the women were single. Almost a half of the women (48%) were office workers, 25% of the women performed physical work, 18% of the respondents were unemployed, and 9% continued studies. 67% of the postpartum women described their social living conditions as good. Slightly fewer women rated them as very good (29%) and adequate (4%).

The research shows that natural childbirth was chosen by 68% of the postpartum women. The rest of the respondents (32%) preferred caesarean section as a method of delivery.

Studies show that the desire to avoid pain by women in childbirth had no effect on their decisions regarding the way of ending the pregnancy ($p=0.1787$). However, 31% of the women who chose caesarean section and 19% of the supporters of vaginal delivery wanted to avoid the pain. It is interesting that more than twice as many respondents who preferred caesarean section (69%) and 81% of women who chose vaginal delivery did not take this factor into account.

Another factor that was analyzed was the will to facilitate the birth of a newborn. It turns out that this factor significantly influenced the decision of the respondents ($p=0.0041^{**}$). As many as 41% of the women who preferred caesarean section and only 15% of the respondents who preferred vaginal delivery took into account the welfare of their child. This factor did not influence the decision of the rest of respondents in both groups.

The age of the women was also significant in choosing the type of delivery ($p=0.0161^*$). Natural childbirth was often chosen by younger women (31%) under the age of 25 years and 57% of the women aged up to 35 years. The lowest percentage in this group were women aged over 35 (12%). Group of women in labour who preferred caesarean section was dominated by the respondents aged 26-35 (84% women). The youngest women – up to 25 years old and 10% of women aged over 35 years constituted only 6% in this group.

The education of the respondents did not have a significant impact on the preferences connected with the way of labour ($p=0.2316$). Both in the group of women who chose natural childbirth and the caesarean section the vast majority were women with higher (57 vs. 41%) and secondary (25 vs. 34%) education. Among the supporters of natural childbirth was the same number of women with primary and vocational education (4%) and 9% of the respondents with Bachelor's degree. However, among the women who preferred caesarean section the same percentage of women with Bachelor's degree and vocational education (12%) and any women with primary education was observed.

BMI also had no significant impact on the decisions of the respondents as to the best way of ending the pregnancy ($p=0.2028$). The highest percentage of women in both groups had normal BMI (56% of the supporters of vaginal delivery and 38% of the supporters of caesarean section) and with obese of class I (22 vs. 19%). As to other BMI levels, 4% of the supporters of vaginal delivery and 6% of the respondents who chose caesarean section were underweight, 9 vs. 9% were overweight, 7 vs. 25% were obese of class II and 2 vs. 3% were obese of class III.

The number of childbirths did not affect the opinion of respondents as to choosing the type of delivery ($p=0.6320$). It is worth noticing that in both cases the highest percentage concerned the women giving birth only once (57% of the supporters of vaginal delivery and 44% of the women who preferred caesarean section) and twice (30 vs. 38%). The rest of the respondents in both groups gave three births (10% of the group favoring vaginal delivery and 16% of the supporters of caesarean section) and four and more births (3 vs. 2%).

On the other hand, the current maternal preferences about how to deliver another baby were influenced by the type of previous labour ($p=0.0000^{***}$). 66% of the respondents who had a natural childbirth and 66% of the women who gave birth by caesarean section today still prefer the same method of delivery. Interestingly, among the surveyed women who gave a birth in both ways, natural childbirth has gained a significantly lower percentage of supporters than caesarean section (9 vs. 18%). Only 16% of the women who preferred caesarean section gave vaginal delivery in the past. The percentage of supporters of natural childbirth who had cesarean section was slightly higher (25%).

Considering the recent childbirth, it turns out that the postpartum women who had an emergency C-section (44%) and planned C-section (41%) were the largest percentage of supporters of caesarean section. The rest of the respondents in this group were women who had vaginal delivery with episiotomy or perineal tear (15%). Natural childbirth was preferred by the women who had a vaginal delivery with perineal tear or episiotomy (50% of the group). Additionally, among the supporters of natural childbirth 18% were the women who gave recent birth without additional medical interventions and 1% with epidural analgesia. In the case of 18% of this group an emergency C-section was performed and 13% of the supporters of vaginal delivery had a planned C-section ($p=0.0000^{***}$).

The perception of labour pain in the past turned out not to have any significant relationship with the current preferences of the respondents regarding the method of ending the pregnancy ($p=0.4517$). It turned out that even the postpartum women assessing pain according to VAS at 8-10 points (63%) and at 4-7 points (26%) were ready to have natural childbirth in future. When it comes to the group favoring caesarean section, 53% of its supporters declared a degree of feeling childbirth pain at 8-10 points. 28% of the supporters of caesarean section felt moderate pain at 4-7 points. The lowest percentage in both groups was represented by the women evaluating pain at 0-3 points (11% of the supporters of vaginal delivery and 19% of the supporters of caesarean section).

Discussion

The study shows that natural childbirth is far more popular among the surveyed women. Wardak, et al. investigated the preference for the mode of baby delivery among young women who had never given birth. The advocates of both natural childbirth and caesarean section were at the same percentage, i.e. 40.8% of the group. Such viewpoint probably resulted from the lack of experience of women who based their beliefs only on unprofessional information [7].

In this study, the postpartum women were not additive to their preferred method of delivery due to the desire to avoid labour pain.. In contrast, in the group of patients who were tested by Nowacki and Panszczyk this factor turned out to be one of the most important taken into account when choosing a caesarean section as a preferred method of ending the pregnancy [8].

The research shows that an important determinant for women in childbirth, regarding the choice of mode of baby delivery is the desire to facilitate the birth of a newborn. Furthermore, the observations made by Nowacki and Panszczyk affirm the belief that the choice of caesarean section among the surveyed women is connected with the concern for the birth of a healthy child [8]. This emotional factor is also significantly associated with the preferences of women for choosing the caesarean section in studies done by Fuglenes et al. [9].

A correlation between the age of postpartum women and the preferences regarding type of baby delivery was determined. A similar analysis was also conducted by Karlström et al. They examined women who preferred caesarean section with no medical indications for this method of delivering a baby. In the group who has been tested and favoring caesarean section approximately 71.1% of the women were aged 25-35 years. The same situation was in the choice of natural childbirth as a favoured method of ending the pregnancy. In this case, the above-mentioned age group accounted for the vast majority, i.e. 72.08% of this group. It can therefore be concluded that women aged 25-35 years enrolled in the Karlström et al. study more often than the Rzeszow respondents from the corresponding age group, chose natural childbirth [10].

Based on the conducted studies it can be concluded that education of the respondents has no connection with their preferences regarding the mode of delivery. In the group of postpartum women, more respondents had higher education. Similar results are provided by the studies carried out by Karlström et al., where the surveyed women with education at a higher level more often chose natural childbirth [10]. However, Nowacki and Panszczyk's studies bring different results. In this case, the women educated at secondary and tertiary level were rather convinced of the positive consequences of vaginal childbirth [8]. Similar data were obtained by Michałowska, et al. In their studies the caesarean section was selected by mainly respondents with higher education [11].

Due to the frequent need of ending the pregnancy of obese women with caesarean section, BMI of the respondents was analyzed, as it could affect the women preferences of labour. It turns out, however, that the choice of the way of childbirth does not depend on this

factor. Based on the studies of Mikołajek-Bedner, et al., it can be concluded that a higher risk of complications is associated with the occurrence of overweight and obesity before pregnancy. In the above mentioned case, a group of women with normal BMI presented the biggest weight gain during the pregnancy. Despite this, the percentage of complications was significantly higher in the group of respondents with overweight and obesity [12].

The results of conducted studies show that the number of given births does not affect the way of ending the pregnancy. In both groups of the supporters of caesarean section and natural childbirth, most women gave birth once. Different results were obtained by other authors. In the study of Karlström et al., both methods of birth were opted for by mainly multiparous [10]. Moreover, the research conducted by Fuglenes et al. showed that the percentage of caesarean section supporters was higher among multiparous compared with nulliparous [9].

The results of these studies demonstrate a high statistical significance between a history of past births and the completion of last pregnancy as well as the preferences of the respondents regarding the way of giving childbirth. Current preferences are mainly a reflection of ways of previous births. In the study of Dunn and O'Herlihy, it turned out that only 11% of the women giving birth naturally after caesarean section and only 6% of the respondents who had undergone caesarean section after vaginal childbirth preferred caesarean section. The vast majority of women therefore preferred natural childbirth [13]. Furthermore, in the research done by Karlström et al., only the 37.14% of the women who had caesarean section still preferred this way of pregnancy completion. Other respondents from this group, as well as 94.82% of the women having natural labour preferred natural way of giving birth [10]. It is essential that the percentage of successful vaginal births after caesarean section, according to the literature, ranges from 50 up to 85% [14]. Nevertheless, the observations made by Pang, et al., among women from China and the West provide data on the respondents' preferences to repeat caesarean section. This opinion was especially indicated among the women after elective caesarean section [15].

The research carried out by Dunn and O'Herlihy showed that women, despite feeling pain during delivery, were not afraid of giving birth naturally in the future. Satisfaction after having a childbirth was expressed by as many as 74% of the respondents giving

birth naturally and only a half of the respondents who had caesarean section [13]. Likewise the results of our study confirm the thesis that the degree of perception of labour pain has no effect on the current preferences of the respondents.

Favored way of ending the pregnancy is affected by many factors, among them often are: own experience or information obtained from various sources. Because of this, women's beliefs are largely subjective. According to a study of Chen and Hancock it is suggested that the knowledge about the childbirth options women usually get from antenatal classes, books, leaflets, the Internet and television [16]. A significant lack of knowledge about the benefits and risks of both methods of delivering a baby was presented in the work of Bernstein, et al. Most respondents said they did not know what were the advantages and disadvantages of both natural childbirth and caesarean section [17].

Satisfactory is the fact that despite the increasing popularity and a significant percentage of caesarean sections carried out (also because of non-obstetric indications), the vast majority of the respondents in this study preferred natural childbirth. Such a high percentage of natural childbirth supporters among patients shows high awareness of women about the advantages of natural delivery for themselves and the newborn.

Conclusion

1. Women's preferences concerning the way of ending the pregnancy tend to favor natural childbirth and are a reflection of the type of previously completed deliveries.
2. Natural childbirth is popular mainly among younger women.
3. A strong determinant of postpartum women's preferences as to how to end the pregnancy turned out to be a willingness to facilitate the birth of a newborn.
4. The number of given births and BMI were not factors that determined the selection of a preferred mode of delivery among the surveyed women.
5. The experience of labour pain does not affect the current preferences of the respondents. Regardless of the degree of feeling pain the majority of postpartum women preferred natural childbirth. The investigated women do not base their decision on the desire to avoid labour pain.

Piśmiennictwo / References

1. Cekański A. Prowadzenie porodu kontrolowanego z położenia podłużnego główkowego – rozważania praktyczne. *Perinatol Neonatol Ginekol* 2009, 2(1): 23-30.
2. Sobieszczuk S. Poród nieprawidłowy. Znieczulenie w czasie porodu. [w:] *Położnictwo i ginekologia*. Bręborowicz GH (red). PZWL, Warszawa 2010: 357-362.
3. Królak-Olejek B, Halaba ZP, Karpe J i wsp. Analiza stanu noworodków urodzonych o czasie drogą cięcia cesarskiego w Klinice Perinatologii i Ginekologii w Zabrze. *Perinatol Neonatol Ginekol* 2009, 2(1): 53-56.
4. Romejko-Wolniewicz E, Gorski A, Zaręba-Szczudlik J, Czajkowski K. Rodząca po cięciu cesarskim – powtórne cięcie czy poród siłami natury? *Perinatol Neonatol Ginekol* 2009, 2(3): 173-184.
5. Słomko Z, Bręborowicz GH. Operacje położnicze. Cięcie cesarskie. [w:] *Położnictwo i ginekologia*. Bręborowicz GH (red). PZWL, Warszawa 2010: 399-402.
6. Drews K, Seremak-Mrozikiewicz A, Barlik M. Elektywne cięcie cesarskie – wybór terminu. *Perinatol Neonatol Ginekol* 2013, 6(3): 131-135.
7. Wardak K, Nagórska M, Łoziński T. Preferowana droga ukończenia ciąży wśród młodych kobiet. *Prz Med Uniw Rzesz Inst Leków* 2011, 2: 239-248.
8. Nowacki R, Pańszczyk M. Cięcie cesarskie, aktualne tendencje. Spojrzenie z perspektywy prywatnego szpitala położniczego. *Perinatol Neonatol Ginekol* 2008, 1(1): 48-50.
9. Fuglenes D, Aas E, Botten G, et al. Why do some pregnant women prefer cesarean? The influence of parity, delivery experiences and fear. *Am J Obstet Gynecol* 2011, 205(1): 45.e1-9.
10. Karlström A, Nystedt A, Johansson M, Hildingsson I. Behind the myth – few women prefer caesarean section in the absence of medical or obstetrical factors. *Midwifery* 2011, 27(5): 620-627.
11. Michałowska S, Zalewski M, Heimrath J, Zalewski J. Analiza sposobów ukończenia ciąży na podstawie preferencji ciężarnych oraz danych statystycznych z lat 2006-2010. *Nowa Med* 2012, 4: 67-75.
12. Mikołajek-Bedner W, Marcinkiewicz O, Zapałowska M i wsp. Wpływ otyłości na przebieg ciąży, porodu i stan urodzeniowy noworodka. *Perinatol Neonatol Ginekol* 2010, 3(3): 210-214.
13. Dunn EA, O'Herlihy C. Comparison of maternal satisfaction following vaginal delivery after caesarean section and caesarean section after previous vaginal delivery. *Eur J Obstet Gynecol Reprod Biol* 2005, 121(1): 56-60.
14. Romejko-Wolniewicz E, Gorski A, Zaręba-Szczudlik J, Czajkowski K. Poród po cięciu cesarskim – kiedy należy się obawiać? *Klin Perinatol Ginekol* 2007, 43(4): 21-28.
15. Pang MW, Law LW, Leung TY, et al. Sociodemographic factors and pregnancy events associated with women who declined vaginal birth after cesarean section. *Eur J Obstet Gynecol Reprod Biol* 2009, 143(1): 24-28.
16. Chen MM, Hancock H. Women's knowledge of options for birth after caesarean section. *Women Birth* 2012, 25(3): e19-e26.
17. Bernstein SN, Matalon-Grazi S, Rosenn BM. Trial of labor versus repeat cesarean: are patients making an informed decision? *Am J Obstet Gynecol* 2012, 207(3): 204.e1-6.