Maternal Request Is not to Blame for an Increase in the Rate of Cesarean Section

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Key Words: *elective cesarean section; maternal request; women's opinion; vaginal delivery.*

Summary. *Background and Objective. The aim of this study was to establish whether Lithuanian women would request an elective cesarean section in a low-risk pregnancy and to compare how the women's opinion changed during the 5-year period.*

Material and Methods. A study was conducted at the Hospital of Lithuanian University of Health Sciences from November 1 to December 31, 2006, and from January 1 to February 28, 2011. A total of 204 and 239 women were enrolled in 2006 and 2011, respectively. Self-administered anonymous questionnaires collected information on women's knowledge about the advantages of the different modes of delivery and their preferred type of birth in a low-risk pregnancy.

Results. Overall, 82.4% of the participants in 2006 and 74.5% in 2011 thought that women should be able to choose the mode of delivery in a low-risk pregnancy. If they had had such an opportunity, 15.2% of women in 2006 and 14.9% in 2011 would have chosen cesarean section without any medical indication. The most frequently mentioned advantage of vaginal delivery was that it is natural, while safety for the newborn and the possibility of avoiding delivery pain were the mentioned advantages of cesarean section.

Conclusions. Approximately 15% of Lithuanian women would request an elective cesarean section, and this percentage did not change during the 5-year period. While the national cesarean section rate is increasing with every year, it seems that "maternal request" cannot be blamed for this phenomenon. Despite all the available information about the different modes of delivery, women still lack professional and reliable knowledge about it.

Introduction

The cesarean section (CS) rate is increasing with every year all around the world (1). In some countries, such as the United States or Australia, every third woman delivers operatively (2). In Brazil, this number is even higher: the overall CS rate was 43.6% in 2006, but in the private sector, it reached more than 80% (3).

The reasons for this may be various. In addition to medical indications, for instance dystocia, abnormal fetal position, or suspected fetal hypoxia, and more ambivalent reasons, such as previous CS or infertility, there appears a nonmedical indication – maternal request (4, 5). The data show that such operations without medical indications account for 4% to 18% of all cesarean sections (6). This reason has been reported to be one of the key factors increasing the cesarean section rate (1, 4, 6–8). On the other hand, some studies show that despite the rising CS rate, women's preferences to deliver operatively or vaginally remain stable (9).

According to the National Birth Register, the CS rate in Lithuania almost doubled from 2000 to 2010, increasing from 13% to 25%. Despite the fact that CS is not performed for nonmedical reasons, nowadays obstetricians may feel women's pressure to perform such an operation. The aim of this study was to determine the mode of delivery preferred by Lithuanian women in a low-risk pregnancy, women's knowledge about the advantages of vaginal or cesarean delivery, and the most trusted sources of such information and to compare how the women's opinion changed during the 5-year period.

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Material and Methods

The study was conducted at the Clinic of Obstetrics and Gynecology, Hospital of Lithuanian University of Health Sciences, from November 1 to December 31, 2006, and from January 1 to February 28, 2011. This institution provides tertiary-level care and undertakes approximately 3200 deliveries per year, accounting for half of all deliveries in Kaunas, the second largest city in the country, and 10% of all deliveries in Lithuania. The participants were women in late pregnancy or those after delivery, with a live fetus or a newborn, and who were able to complete the questionnaire in Lithuanian.

The items of the self-administered anonymous questionnaire were developed based on literature, existing questionnaires, and discussions with mid-

wifes and obstetricians. The questionnaires were pretested on women during a pilot phase. The 3-part questionnaire sought to identify the demographic characteristics of the participants and to collect information on women's knowledge about the advantages of the different modes of delivery and their preferred type of birth. The first 6 questions collected information on sociodemographic characteristics and obstetric history (age, place of residence, marital status, educational level, parity, and previous deliveries). The second part of the questionnaire focused on personal knowledge and opinion about the advantages of vaginal delivery and CS and the main sources of such information. The last 4 questions revealed the women's opinion on their right to choose the mode of delivery by themselves as well as their preferences (vaginal or cesarean delivery). We also asked them if the indication "maternal request" for CS should be legalized and who or what institution should pay for such an operation without a medical indication. The questionnaire took approximately 20 minutes to complete.

The calculation of a sample size was performed using the Epi Info software, version 6.0. According to the literature data, an elective CS performed on maternal request now accounts for 4% to 18% of all CSs (6, 10). There were about 30 000 deliveries per year in Lithuania (data of the Lithuanian Hygiene Institute). Anticipating that 10%±4% of women would request CS, 202 women (α=0.05) during each study period had to be examined. Statistical analysis was performed using the SPSS (Statistical Package for Social Sciences, Microsoft Inc.) software, version 15.0. Categorical variables were analyzed by either the χ^2 test or the Fisher exact test. A P values of <0.05 was considered significant. Multiple logistic regression analysis was employed to identify the independent predictors for women's preference for cesarean delivery. The variables included in the model were age, education, place of residence, knowledge about different modes of delivery (described by women as sufficient or insufficient), and previous delivery experience. The odds ratios (OR) and their 95% confidence intervals (CI) were calculated for each individual predictor. This study was approved by the Ethics Committee for the Kaunas region (No. BC-LSMU(R)-08). Verbal consent was obtained from all participants before administering the questionnaire.

Results

A total of 204 and 239 women filled in the questionnaires in 2006 and 2011, respectively. The characteristics of the study participants are shown in Table 1. The vast majority of the respondents in 2006 thought that women should be able to choose the mode of delivery in a low-risk pregnancy by themselves (Table 2). This percentage decreased from 82.4% to 74.5% in 2011, but the difference was not significant (P=0.05). If women had had such a choice, 15.2% of them would have chosen CS in 2006 and 14.9% in 2011. Despite the fact that only a minority of women would prefer CS, 71.6% of the respondents in 2006 thought that the indication "maternal request" for an elective CS should be legalized, and 56.9% emphasized that the Health Insurance Fund should pay for such an operation. In

Table 1. The Characteristics of the Study Population

Variable	2006 (n=204)	2011 (n=239)	*P*
Age, years			
<20	17 (8.3)	12 (5.0)	NS
20–34	164 (80.4)	184 (77.0)	
⩾35	23 (11.3)	43 (18.0)	
Residence			
Urban	161 (78.9)	182 (76.2)	NS
Rural	43 (21.1)	57 (23.8)	
Education			
Basic, primary and secondary education	126 (61.8)	113 (47.3)	<0.05
Higher education	78 (38.2)	126 (52.7)	
Marital status			
Single	13 (6.4)	59 (24.7)	<0.05
Married	191 (93.6)	180 (75.3)	
Parity			
Nulliparous	123 (60.3)	88 (36.8)	<0.05
Parous	81 (39.7)	151 (63.2)	
Previous deliveries*			
Vaginal delivery	62 (75.5)	109 (72.2)	NS
Cesarean section	12 (14.8)	29 (19.2)	
Vaginal delivery and cesarean section	7 (8.6)	13 (8.6)	

Values are number (percentage). NS, not significant.
*Question only for parous women.

Table 2. Respondents' Opinion on Women's Request for Cesarean Section

Statement	All Respondents		*P*	Women Who Would Choose Vaginal Delivery		*P*	Women Who Would Choose CS		*P*
	2006 (n=204)	2011 (n=239)		2006 (n=169)	2011 (n=203)		2006 (n=31)	2011 (n=35)	
Women should be able to choose a mode of delivery by themselves	168 (82.4)	178 (74.5)	0.05	135 (79.9)	144 (70.9)	0.05	30 (96.8)	33 (94.3)	0.63
Indication "maternal request" for CS should be legalized	146 (71.6)	148 (61.9)	0.01	114 (67.5)	116 (57.1)	0.01	30 (96.8)	31 (88.6)	0.21
Health Insurance Fund should pay for CS without a medical indication	116 (56.9)	100 (41.8)	0.002	89 (52.7)	73 (36.0)	0.001	25 (80.6)	26 (74.3)	0.54

Values are number (percentage).

2011, the percentage of women with such an opinion was significantly lower. Moreover, women who would prefer an elective CS for themselves gave a positive answer to the 3 questions specified in Table 2 far more often than those who would prefer vaginal delivery ($P<0.05$).

The majority of women thought that they had enough information about the different modes of delivery and their advantages. During 5 years, this percentage increased from 61.3% in 2006 to 76.2% in 2011 ($P<0.05$). The most popular source of information among respondents also changed during this period. In 2006, an obstetrician-gynecologist was the most popular source of information (47.5%), followed by a book (28.9%) (Fig. 1). Five years later, more women relied on the Internet than sought information from an obstetrician-gynecologist (53.6% and 51.9%, respectively).

The most important advantages of vaginal delivery and CS did not change during 5 years. The vast majority of women thought that the most important advantage of vaginal delivery was that it is natural (Fig. 2). The most frequently mentioned advantages of CS, namely safety for the newborn and the possibility of avoiding delivery pain, were less important in 2011 than 2006 (Fig. 3). The fact that it is very convenient with the help of CS to plan the date of birth did not lose its popularity during 5 years and was important to more than half of the respondents.

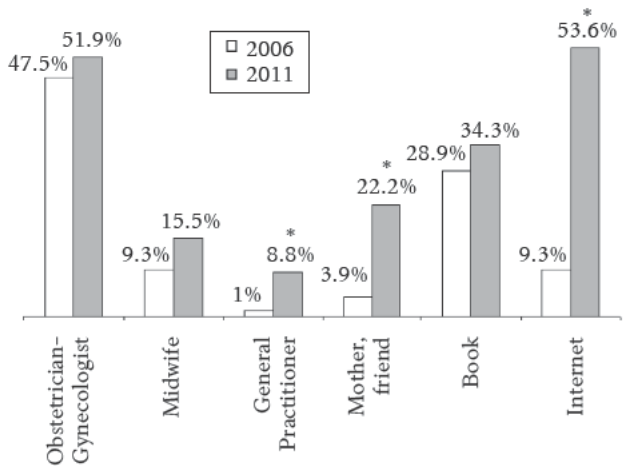

Fig. 1. Sources of information about modes of delivery
*$P<0.05$, as compared with 2006.

A higher preference for cesarean delivery was given by the women who were urban residents (OR, 6.7; 95% CI, 1.4–32.9), had enough knowledge about the different modes of delivery (OR, 3.6; 95% CI, 1.3–10.3), and had only cesarean delivery experience in the past (OR, 7.3; 95% CI, 1.6–31.9) (Table 3). The women who had higher education (OR, 0.4; 95% CI, 0.1–0.9) showed a lower preference for cesarean delivery in 2006. None of the analyzed variables were associated with women's preference for cesarean delivery in 2011.

Discussion

In the present study, nearly 15% of the respondents would prefer to deliver by an elective CS. This is in line with international data (1, 9, 11). The overall preference for cesarean section is approximately 15%: in North America, 21.3%; in Australia, 13.8%; and in Europe, 11% (1). According to the medical literature, well-educated women request cesarean section more often compared with poorly educated women (12). Nulliparous women who have childbirth related fear and women who had a bad experience in previous pregnancies are at high risk of requesting an elective cesarean section (13). Yet, our study showed that despite the fact that the numbers of well-educated as well as parous women were significantly higher in 2011 than 2006, this did not influence the proportion of women who would prefer to deliver operatively.

The American Medical Association states that "the patient has a right to make decisions regarding the healthcare" (12). This is the principle of autonomy and it should be respected (14). Some studies emphasize the importance for women to be involved in the decision-making process (13). However, our study revealed that not all women wanted to make

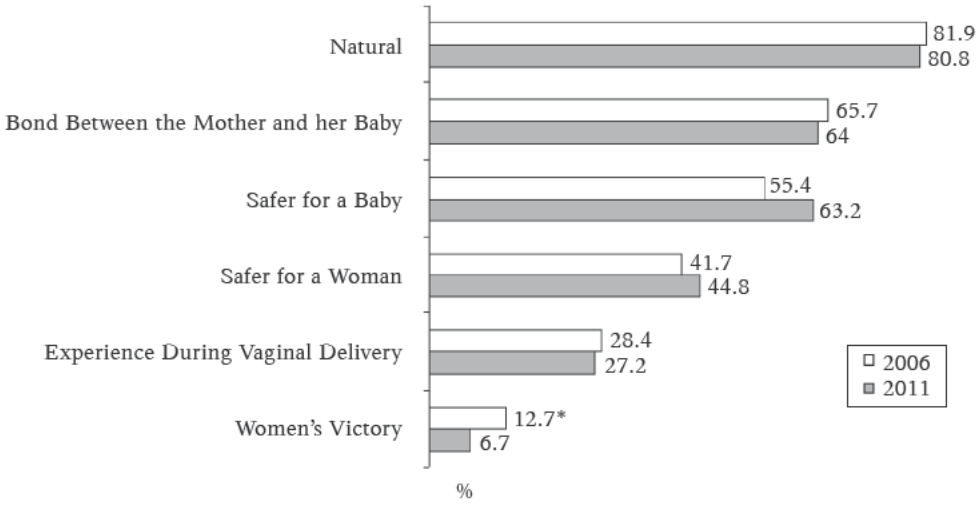

Fig. 2. The most important advantages of vaginal delivery
*$P<0.05$, as compared with 2006.

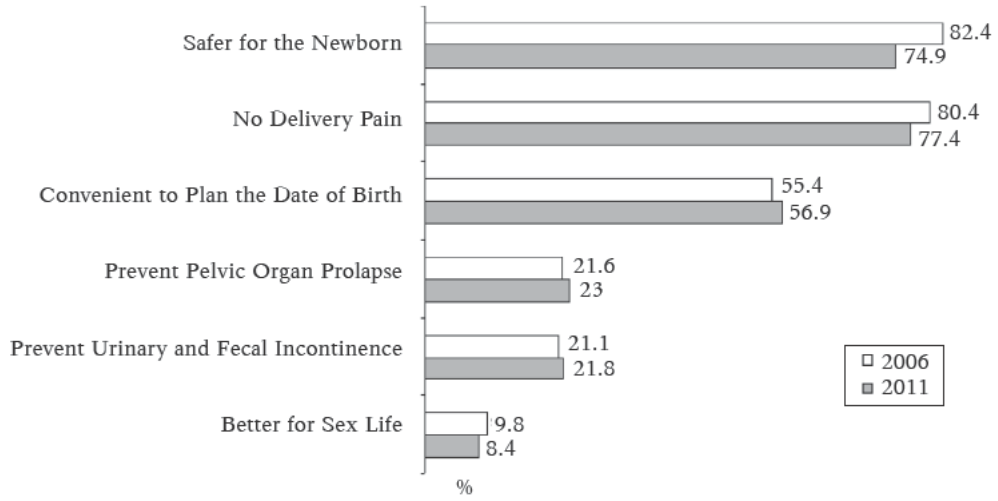

Fig. 3. The most important advantages of cesarean section

the final decision themselves. According to our data, 82.4% of the respondents in 2006 thought that they should be able to choose the mode of delivery by themselves. Five years later, this percentage decreased by almost 8%. Despite the fact that this difference was insignificant, it shows that more women would like to rely on healthcare professionals nowadays. This statement is proven by the fact that significantly fewer women in 2011 than 2006 thought that cesarean section could be performed under a legalized indication "maternal request" and funded by the Health Insurance Fund. Still, the women who have decided to deliver operatively manage to persuade an obstetrician-gynecologist to perform cesarean section without any medical indication. According to the Lithuanian legal system, a patient who is not satisfied with a physician's decision or behavior can demand compensation for the financial and moral damage caused. To avoid possible legal consequences in case something goes wrong, doctors sometimes perform an elective cesarean section based not on medical indications, but on maternal request.

Maternal request for an elective cesarean section is not only an ethical, but also financial problem. There are studies that have compared the economic advantages of the different modes of delivery. The results are in favor of vaginal delivery compared with CS (11). Who should pay for an operation without a medical indication? The vast majority of the respondents who preferred operative delivery thought that the Health Insurance Fund should pay for such an operation. By contrast, women who would prefer to deliver vaginally claim that women should pay themselves for an elective CS. The overall percentage of proponents with this opinion increased by almost 20% during 5 years.

The majority of Lithuanian women thought that they had enough knowledge about vaginal delivery

Table 3. Variables Predicting Women's Preference for Cesarean Delivery

Variable	2006 OR (95% CI)	2011 OR (95% CI)
Place of residence		
Rural	1.0	1.0
Urban	6.7 (1.4–32.9)	0.6 (0.2–1.3)
Age, years		
<20	1.0	1.0
20–34	0.3 (0.1–1.4)	3.6 (0.4–31.5)
⩾35	1.2 (0.2–7.0)	2.0 (0.2–21.8)
Education		
Primary, basic, or secondary	1.0	1.0
Higher	0.4 (0.1–0.9)	0.7 (0.3–1.6)
Knowledge about mode of delivery		
Insufficient	1.0	1.0
Sufficient	3.6 (1.3–10.3)	2.6 (0.9–7.5)
Previous deliveries		
None	1.0	1.0
Only vaginal delivery	0.5 (0.2–1.5)	0.4 (0.2–1.0)
Only cesarean section	7.3 (1.6–31.9)	1.3 (0.5–3.8)
Vaginal delivery and cesarean section	1.5 (0.2–11.3)	0.6 (0.1–3.2)

and CS. This number has increased over the five years by almost 15%. During this period, the most trusted source of information on different modes of delivery has also changed. Earlier it was an obstetrician-gynecologist, and nowadays, it is the Internet. It is debated whether it influences the women's opinion on vaginal and operative delivery. It is well known that women tend to share their knowledge and personal experiences about their pregnancy and delivery. Some authors state that women with normal pregnancies use social networks less often than those with negative experiences (5). Consequently, a public consensus that CS is better and safer for a woman and her baby than vaginal delivery may spread in the general public. Moreover, the fact that CS is becoming somewhat fashionable and classy, especially among famous people, is in favor of CS (3, 11). This undoubtedly can motivate women to request an elective CS (4). On the other hand, 5 years ago, women trusted their obstetricians-gynecologists the most. Some studies showed that 17.8% of obstetricians-gynecologists in the United States and 45% in Turkey would prefer CS for themselves or their partners (15, 16). It is likely that this could also influence the increasing cesarean section rate, especially in private settings (3). Some authors claim that 40% of women who choose CS are encouraged by their doctor (17). However, our study revealed that women's preference for CS in a low-risk pregnancy did not change. It seems that neither an obstetrician-gynecologist nor the Internet influenced the number of women who would prefer an operative delivery without a medical indication.

As the main advantage of vaginal delivery, Lithuanian women mentioned that it was natural. Moreover, this mode of delivery results in a better bond between the mother and her baby. These reasons were also important to women from other countries, who also noted that vaginal delivery was associated with faster recovery and a lower complication rate when compared with CS (4, 8, 11, 16, 18). The analysis of the advantages of CS has revealed that the most important factor for Lithuanian women and other countries' laypersons and healthcare professionals is that operative delivery may be safer for the baby (16). Some authors state that an elective CS is protective against complications such as neonatal encephalopathy, intracranial hemorrhage, and brachial plexus injury (19). Nevertheless, evidence shows that an elective CS does not improve the perinatal and maternal morbidity and mortality rates (1). The proponents of operative delivery also state that this mode of delivery gives a woman an opportunity to protect herself from the future pelvic floor dysfunction and changes in sexual functioning (4, 20). However, the opponents emphasize that CS does not protect women from these possible events in general (21). Lithuanian women considered avoiding pain more important than protecting their pelvic floor from damage. Although epidural analgesia for delivery pain relief has become more popular and acceptable nowadays (22), the possibility of avoiding pain remains the most popular reason for choosing an elective CS in some countries (11, 18).

Conclusions

Our results show that despite the increasing national cesarean section rate, the number of women who would prefer operative delivery is not growing, and the reasons for this phenomenon should be investigated further.

Statement of Conflict of Interest

The authors state no conflict of interest.

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