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WHAT IS THE LEVEL OF SATISFACTION WITH MATERNITY CARE IN POLAND? A CROSS-SECTIONAL STUDY

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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: A positive experience of childbirth, as outlined by the WHO, consists of giving birth to a healthy child, and meeting the expectations of the woman based on her beliefs, previous experiences, and cultural conditions.

Aim of the study: To evaluate the mother's satisfaction with childbirth, satisfaction with the expectations of giving birth, and the care received during and after birth.

Material and methods: This study used a questionnaire for data collection that was validated by a panel of experts using the Delphi method. The Chi-square, Mann-Whitney U and Kruskal-Wallis rank tests with post-hoc comparisons were used for the analysis. Correlations were examined using the Spearman's R test.

Results: For the whole study group (n=444), the mean score for satisfaction with childbirth was 3.83 (±1.25), and the assessment of care during childbirth (n=444) and care in the maternity unit (n=427) were 4.11 (±1.12) and 3.60 (±1.22), respectively. Satisfaction with childbirth in the whole study group was significantly correlated with emotional support ($r=0.55$, $p<0.001$) and communication with staff ($r=0.53$, $p<0.001$) during delivery, provision of intimacy ($r=0.44$, $p<0.001$), pain relief ($r=0.43$, $p<0.001$), contact with the newborn after birth ($r=0.43$, $p<0.001$), support for breastfeeding ($r=0.37$, $p<0.001$), and accommodation and sanitary conditions during delivery ($r=0.37$, $p<0.001$). The largest statistically significant differences regarding fulfillment of the women's expectations were observed between groups describing their childbirth as frightening and painful, and groups describing their childbirth as expected, positive and pleasant.

Conclusions: Women had a worse opinion of care after childbirth compared to care during childbirth, which may be due to the lack of expectations concerning emotional support and assistance in breastfeeding that were reported by the respondents.

Keywords: parturition, delivery of health care, patient satisfaction

Background

The importance of the childbirth experience for the mother and her newborn is highlighted in the latest guidelines "WHO recommendations: Intrapartum care for a positive childbirth experience." Childbirth has a significant impact on the subsequent quality of life for both the child and the mother, and therefore the whole family. Thus, it is important to endeavor to offer women a positive childbirth experience [1].

The satisfaction of a patient often depends on their subjective impressions and expectations. It should be noted that the modern patient knows his or her rights, and expects the best possible care. This results

in a challenge for health workers, which can motivate them to improve their quality of service [2,3].

A positive experience of childbirth, as outlined by the WHO, consists of giving birth to a healthy child, and meeting the expectations of the woman based on her beliefs, previous experiences, and cultural conditions. The recommendations point out the role of a psychologically and clinically friendly childbirth environment, where, in the event of complications, a woman can count not only on the use of necessary medical procedures, but also on involvement in the decision-making process. One of the important factors affecting a positive experience of childbirth is the satisfaction resulting from fulfilling a woman's expectations [1]. The satisfaction of women with childbirth, along with other outcomes such as mortality, is one of the most important measures of the quality of perinatal care [4]. Regardless of the region in the world, satisfaction with birthing care focuses on three main areas: sense of security, the environment, and the professional skills of doctors and midwives [5, 6].

In 2012 in Poland, the maternity care standards to regulate medical procedures for the provision of perinatal care services for women during pregnancy, childbirth, postpartum and neonatal care were established [7]. After their introduction, a significant increase in the satisfaction of women with antenatal care was observed. More attention was paid to the subjective care of the woman, a holistic approach on the part of medical staff, and respect for the relationship between the mother and the newborn [8].

Aim of the study

The purpose of this study was to examine the birthing experience of women by assessing satisfaction with childbirth, the fulfillment of expectations for childbirth, and perceptions of the care received during and after childbirth. The results obtained may help in planning maternity care.

Material and methods

Study design and setting

A retrospective cross-sectional study was conducted from January 2019 to March 2019. Links to the survey were posted on popular community forums for mothers.

Participants

Data was collected from 485 women who gave birth to their last child between 1987 and 2019. The criterion for inclusion in the study was childbirth in Poland after 2012, when the standards for maternity care were introduced. The exclusion criteria were birth outside Poland and delivery before 2012.

Variables and data sources

Variables that may influence satisfaction with childbirth such as parity, mode of delivery, epidural, state of health of the child, and the presence of an accompanying person were included in the study. The original survey questionnaire contained 10 questions about the experience of the last delivery. The survey questionnaire included questions about the extent to which women's' expectations were realized in connection with communication, emotional support and accommodation, sanitary conditions during delivery and stay in the maternity ward, intimacy provided, contact with the child provided immediately after birth, and support for breastfeeding. Responses regarding the fulfillment of expectations for childbirth were measured using a 4-point Likert scale (definitely yes, rather yes, neither yes nor no, definitely no, not applicable). The next 3 questions examining the evaluation of satisfaction with childbirth, care during delivery and stay in the maternity ward were measured on a scale from 1 to 5, where 1 indicated the lowest level of satisfaction and 5 the highest. The women were also asked to indicate their feelings about childbirth as terrifying, painful, according to expectations, positive or pleasurable.

The questionnaire was validated by an expert panel (5 persons, including 2 midwives, an obstetrician, a psychologist and a sociologist) using the Delphi method. The evaluation resulted in a score of S-CVI=1 for a scale covering 5 domains (characteristics of the study group, delivery satisfaction, delivery expectations, assessment of care during delivery, assessment of care after delivery).

Sample size requirements

The required sample size for the study (n=384), was calculated based on the number of births in Poland in 2017 (n=402,000) assuming a confidence level of 0.95 and an error of 0.05 [9].

Statistical methods

Mann-Whitney U, Chi-square and Kruskal-Wallis rank ANOVA with post-hoc tests were used after checking the normality of the distribution with the Shapiro-Wilk test. Correlations were examined with the Spearman's R test. Statistical significance was assumed at $p<0.05$ and a test power of 80%. The reliability coefficient for the questionnaire (the Cronbach alpha) was 0.90 and the omega index was 0.926, indicating the reliability of the scale.

Ethical considerations

At the beginning of the questionnaire it was outlined that the study was intended for women of adult age, that participation was anonymous, and that filling in the questionnaire was considered as consent to participate in the study. The study was approved by the Medical University of Warsaw ethical committee (AKBE/232/2017).

Results

Participants

Our survey included 485 women who gave birth to their last child between 1987 and 2019. We removed questionnaires that referred to a birth outside Poland (n=13) or did not specify the country of birth of the child (n=2), as well as women whose birth took place before 2012 (n=22) and questionnaires containing missing data (n=4). In total, 444 questionnaires were included in the study and analyzed. The selection process is presented in Figure 1.

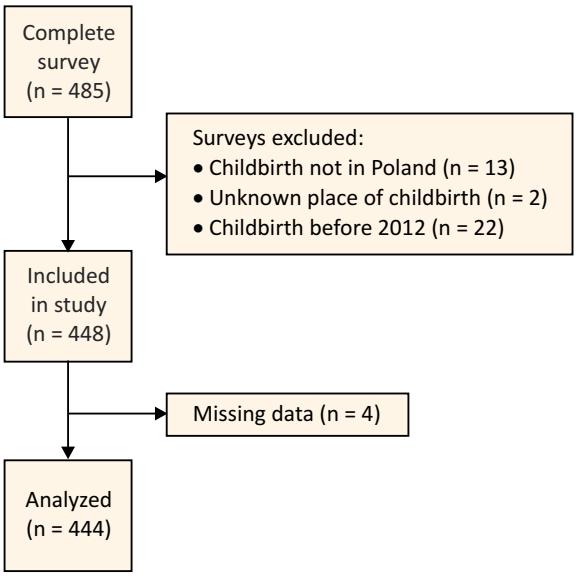

Figure 1. Flow diagram of the eligibility of the surveys for the study

Descriptive data

The majority of subjects were primiparas (n=279, 63%) and gave birth in hospital (n=427, 96%) by natural means (n=286, 64%). Most childbirths were attended by an accompanying person (n=253, 88%) and the newborn was born in good condition (n=397, 89%; Table 1).

Main results

Women were asked what expectations of childbirth were met in their situation. The least frequently fulfilled expectations were emotional support dur-

Table 1. Group characteristics, satisfaction with childbirth, and assessment of level of care during childbirth and in the maternity ward

Variable	n (%)	Satisfaction with childbirth (M±SD)	p value	Assessment of the level of care during childbirth (M±SD)	p value	Assessment of the level of care in the maternity ward (M±SD)	p value
Parity (n=444)							
1	279 (63%)	3.63 (±1.33)	<0.001*	3.99 (±1.18)	<0.001*	3.51 (±1.26)	0.014*
2	116 (26%)	4.09 (±1.05)		4.17 (±1.06)		3.67 (±1.15)	
3 or more	49 (11%)	4.35 (±1.01)		4.63 (±1.01)		4.02 (±1.07)	
Place of childbirth (n=444)							
Hospital	427 (96%)	3.79 (±1.26)	<0.001*	4.09 (±1.13)	0.099	—	
Home/Birth Centre	17 (4%)	4.88 (±0.33)		4.77 (±0.56)		—	
Mode of childbirth (n=444)							
Caesarean section	158 (36%)	3.39 (±1.33)	<0.001*	3.89 (±1.30)	0.006*	3.49 (±1.35)	0.636
Vaginal delivery	286 (64%)	4.07 (±1.14)		4.24 (±0.99)		3.66 (±1.13)	
Health status of newborn (n=444)							
Medical attention needed	47 (11%)	3.29 (±1.53)	0.016*	4.16 (±1.10)	<0.001*	3.61 (±1.23)	<0.001*
Healthy	397 (89%)	3.89 (±1.20)		3.72 (±1.35)		3.51 (±1.14)	
Accompanying person[a] (n=286)							
Yes	253 (88%)	4.10 (±1.10)	0.273	4.28 (±0.92)	0.006*	3.67 (±1.14)	0.749
No	33 (12%)	3.79 (±1.39)		3.79 (±1.41)		3.61 (±1.08)	
Epidural anesthesia[b] (n=269)							
Yes	83 (31%)	4.02 (±1.15)	0.758	4.36 (±1.01)	0.136	3.64 (±1.26)	0.298
No	186 (69%)	4.01 (±1.18)		4.14 (±1.01)		3.67 (±1.08)	

[a] Vaginal deliveries; [b] hospital vaginal deliveries; * statistically significant (p<0.05).

ing the stay in the maternity ward (55%) and support with breastfeeding (59%) The most frequently fulfilled expectations were communication with the medical staff (81%), and accommodation and sanitary conditions (80%) during delivery (Table 2).

Table 2. Assessment of the expectations of care during childbirth (n=444)

Expectation of woman	Number of women whose expectations in a given area were achieved (%)*	
	n	%
Communication during delivery	358	81
Accommodation and sanitary conditions during delivery	356	80
Contact with the child immediately after birth	348	78
Intimacy provided	337	76
Accommodation and sanitary conditions in the maternity ward	331	73
Communication in the maternity ward	323	72
Emotional support during delivery	297	67
Pain relief	292	66
Support for breastfeeding	256	59
Emotional support in the maternity ward	146	55

* Total number of answers definitely yes and rather yes.

Post-hoc tests showed that the satisfaction of women significantly increased after the first delivery, while it did not differ among women after subsequent deliveries.

Strong correlations were found between satisfaction with delivery and satisfaction with care during delivery (r=0.70, p<0.001), and satisfaction with care during the stay in the maternity ward (r=0.49, p<0.001).

Satisfaction with childbirth in the whole study group was significantly correlated with emotional support (r=0.55, p<0.001), communication with staff (r=0.53, p<0.001) during delivery, provision of intimacy (r=0.44, p<0.001), pain relief (r=0.43, p<0.001), contact with the newborn after birth (r=0.43, p<0.001), support for breastfeeding (r=0.37, p<0.001), and accommodation and sanitary conditions during delivery (r=0.37, p<0.001).

Primiparous satisfaction with childbirth was most strongly correlated with communication (r=0.59, p<0.001), emotional support (r=0.57, p<0.001) and pain relief (r=0.47, p<0.001) during delivery, and emotional support in the maternity ward (r=0.45, p<0.001). In multiparous women, the level of satisfaction with delivery was most strongly correlated with intimacy provision (r=0.53, p<0.001), emotional support (r=0.47, p<0.001), and accommodation and sanitary conditions (r=0.46, p<0.001) during delivery.

Satisfaction with childbirth in women who had caesarean sections was most strongly correlated with the receipt of emotional support (r=0.54, p<0.001) and communication (r=0.54, p<0.001) during delivery, and with emotional support in the maternity ward (r=0.50, p<0.001). In women with natural childbirth, satisfaction was most strongly correlated with the receipt of emotional support (r=0.54, p<0.001) and communication (r=0.53, p<0.001) during delivery, and intimacy (r=0.47, p<0.001).

Childbirth was most often described by women as painful (n=125), positive (n=125), and according to expectations (n=102). The largest statistically significant differences regarding the fulfillment of women's expectations were observed between groups describing their childbirth as frightening and painful, and groups describing their childbirth as expected, positive, and pleasant. The level of evaluation of care during childbirth and hospital stay increased with the positive feelings of women about their childbirth (Figure 2).

Satisfaction with expectations concerning labor pain relief was rated lowest in the groups of wom-

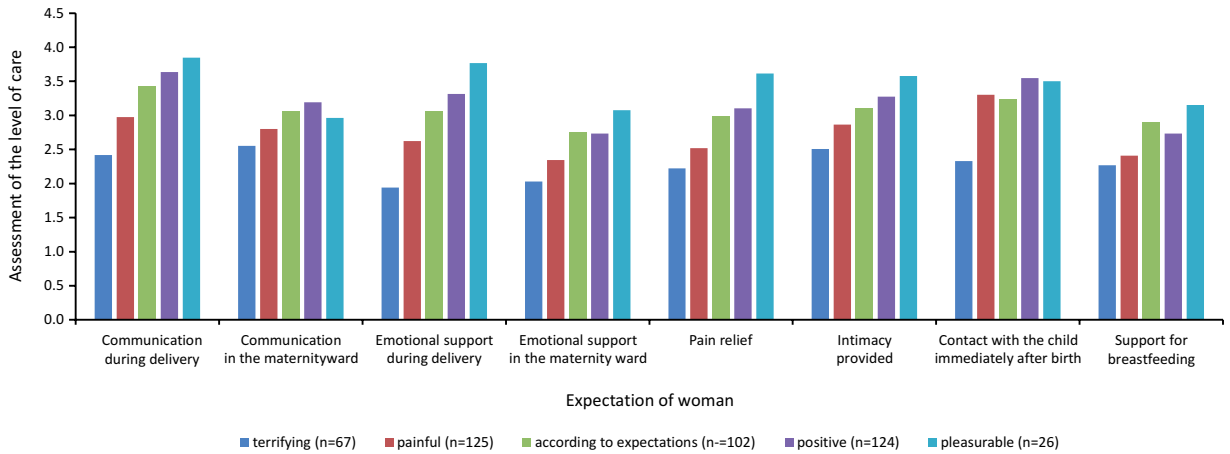

Figure 2. Feelings about childbirth and assessment of care during delivery and in the maternity ward

en assessing their labor as frightening (2.22±1.31, p=0.000) and painful (2.52±1.13, p=0.000). Likewise, intimacy provided was lowest in the group where childbirth was frightening (2.51±1.11, p=0.000) and painful (2.86±1.04, p=0.000). Communication during labor also was low with a painful (2.42±1.29, p=0.000) and (2.98±1.11, p=0.000) frightening childbirth. A frightening birth was also associated with a low fulfillment of the expectation of contact with the newborn immediately after birth (2.33±1.41, p=0.000) compared to the other groups. No statistically significant differences were observed between the fulfillment of expectations regarding accommodation and sanitary conditions between the groups.

Discussion

Key results

For the whole study group (n=444), the mean score for satisfaction with childbirth was 3.83 (±1.25), and the assessment of care during childbirth (n=444) and care in the maternity unit (n=427) were 4.11 (±1.12) and 3.60 (±1.22), respectively.

Limitations of the study

A limitation of our study is the lack of data on the age and educational level of the women who took part in the survey. Conducting the survey via the Internet gave us the opportunity to investigate the satisfaction of women across the country, but limited it to women with access to the Internet, excluding women with low economic status.

Generalizability

In the Czech Republic, where the childbirth care system is similar to Poland, the strongest satisfaction predictors in the delivery room were the helpfulness and empathy of midwives, communication of information, physical comfort, and services. Parity was a one of important predictors of satisfaction on the obstetric unit and the same observation was made in the current study [10]. We also made the same observations regarding the significant roles of physical comfort and services for the level of satisfaction.

The impact of the place of childbirth is evident in research from the USA comparing home, birth centers and hospitals, and from Denmark comparing birth centers and hospital units. Both studies showed a significantly higher level of satisfaction in women who gave birth at home and in birth centers as compared to hospitals. Similar results were observed in the current study. The most important factors for woman giving birth at home or in a birth center are midwife support and presence when wanted, attentiveness to psychological needs and to wishes for birth, a feeling of being listened to, receiving information, participation in decision-making, and support from a partner [11, 12]. However, in Poland most childbirths take place in hospitals and only 17 women who gave birth at home or at birth centers took part in our survey.

It is widely known that unnecessary interventions during childbirth can have a negative impact on the birth process [13]. Women's experiences with medical interventions and procedures have an effect on the childbirth experience and the satisfaction with childbirth [14-16]. Research all over the world has shown higher levels of satisfaction with vaginal childbirth as compared to a caesarean section [11, 16, 17, 18]. Having a vaginal childbirth also influences the perception of the participation of women in the birth process [18]. Interestingly, satisfaction with a natural childbirth is one of the factors that remain at a high level one year after the birth [19]. The current study also showed statistically significant differences across the different types of childbirths. Satisfaction with a vaginal childbirth was higher (4.07±1.14) than in women who delivered by caesarean section (3.39±1.33).

One of the important factors associated with childbirth is pain relief. The Polish standards for perinatal care pain relief recommend the use of pharmacological and non-pharmacological methods. The most common pharmacological pain relief method used in Poland is an epidural, while common non-pharmacological methods include water immersion, pain-reducing positions, use of ancillary equipment (e.g., a ball or sako sack), and transcutaneous electrical nerve stimulation (TENS) [7]. We have noted a weak correlation between epidural use and satisfaction from the pain relief method provided during childbirth (0.22, $p<0.001$). Our study showed a lack of influence of an epidural on childbirth satisfaction, but there was a correlation in the level of satisfaction in primiparous women and pain relief (0.47, $p<0.001$). This may indicate satisfaction with non-pharmacological methods of relieving pain. Similar results on the absence of epidural effects on satisfaction have been obtained in Spain, but some studies indicate that the use of epidurals in childbirth can have a negative impact on satisfaction levels [15, 18, 19]. However, research from Sweden showed that primiparous women preferred pain relief methods like water immersion, breathing techniques, and massage, to an epidural [20]. Women in our study who described their childbirth as terrifying or painful rated pain relief during labor very low but there was no correlation with epidural use. Interestingly, women giving birth at home (n=17) without the possibility

of anesthesia reported a higher level of satisfaction of their expectations (3.41±0.71) than the woman giving birth with an epidural (n=161; 3.19±0.98).

The mean satisfaction level of women who delivered healthy children in our study was 3.89 (±1.20) and was similar to the mean level of all responders (3.83±1.25). In group of woman whose children was needed medical attention was statistical difference (p=0.016) and equals 3.29 (±1.53). This effect can be explained by the heavy stress in mothers caused by fear for the life of her child. The birth of a child with poor health is one of the strongest factors associated with the occurrence of PTSD in the mother [21].

Similar to earlier studies, the current work indicated that two of the most important factors for satisfaction with childbirth are communication and support from medical staff. In particular, an open and clear communication style, and a supportive personal connection with medical personnel are vitally important. A non-supportive birthing environment can be disappointing and dissatisfying. Good communication can create space for women to take an active role during childbirth. Indeed, it has been reported that women prefer midwifes with excellent interpersonal skills and use this characteristic to create a trusting relationship [19, 22]. This has also been confirmed by another Polish study where ease of contact, friendliness, and information during hospitalization after childbirth was highly appreciated by women [23]. In our study, the strongest correlations were found between satisfaction level and communication during childbirth (0.54, $p<0.001$), and emotional support from medical staff (0.55, $p<0.001$).

Conclusions

Women had a worse opinion of care after childbirth compared to care during childbirth, which may be due to the lack of expectations concerning emotional support and assistance in breastfeeding that were reported by the respondents. Fulfilling the expectations of women in relation to childbirth, particularly in the areas of communication, emotional support, and pain relief during childbirth has a positive impact on women's satisfaction with childbirth. Perinatal care planning should take into account a woman's expectations regarding labor and the early postpartum period.

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