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# Mode of delivery and its influence on women's satisfaction with childbirth

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ABSTRACT

*Objective:* Many factors affect women's satisfaction with the experience of childbirth. Some of these are known, but most have not been fully evaluated. The influence of the mode of delivery is unclear. This study investigated the extent to which satisfaction with childbirth depends on the mode of delivery, and evaluated factors determining postpartum satisfaction.

*Study design:* Women with singleton pregnancies at term were included prospectively. After childbirth, all women meeting the inclusion criteria received a standardised questionnaire – the German version of Salmon's Item List (SIL-Ger) – for completion before discharge to evaluate the birth experience. The chi-squared test, Fisher's exact test, and Kruskal–Wallis test were used for statistical analysis. Univariate and multivariate linear regression analyses were used to assess associations between demographic and pregnancy-associated variables and variables influencing the perception of childbirth in the total SIL-Ger score. Univariate and multivariate binary logistic regression models were used to evaluate effects of demographic and clinical parameters on SIL-Ger scores of $<70$ versus SIL-Ger scores of $\geq 70$. All covariates with a $P$ value $\leq 0.10$ in the univariate analysis were included in multivariate logistic regression models. All tests were two-sided, and $P$ values $< 0.05$ were considered statistically significant.

*Results:* The analysis included 335 questionnaires. No differences were observed between different modes of delivery (normal $84.5 \pm 14.6$, primary caesarean $87.0 \pm 13.5$, secondary caesarean $83.2 \pm 13.8$, emergency caesarean $79.3 \pm 7.3$, operative vaginal delivery $83.9 \pm 13.6$; $P = 0.503$). Multivariate analysis identified two independent factors associated with higher SIL-Ger scores: good/very good satisfaction with childbirth ($P < 0.001$) and good/very good involvement in decision-making afterwards ($P = 0.005$). Severe pain perception during childbirth was associated with lower SIL-Ger scores ($P = 0.003$). Absence of a person of trust during childbirth was linked with scores $< 70$ ($P = 0.005$), indicating a negative experience. Good/very good satisfaction with childbirth ($P < 0.001$) reduced the probability of a score $< 70$.

*Conclusion:* Mode of delivery does not directly influence women's satisfaction with childbirth. Involvement in decision-making, support during labour and effective analgesia appear to be the most important factors that improve women's birth experience.



## 1. Introduction

Giving birth is often regarded as being the most wonderful and special experience in a woman's life, but at the same time it can be extremely traumatic. The latter aspect is underlined by the fact that childbirth is also one of the most painful events that a woman is likely to undergo [1]. Pain levels vary widely and appear to be influenced by fear, anxiety, experience in giving birth previously, mobility during labour and the support provided during labour [2,3]. Pain, however, is only one of the factors that influence the way in which women experience the process of labour [4].

It is widely accepted that there are many factors that may influence the degree of a woman's satisfaction regarding childbirth. These include a number of critical medical risk factors present during the previous or current pregnancy. Traumatic experiences in past pregnancies may confer negative perceptions and may thus compromise the birth experience in a new pregnancy [5]. Physical and psychosocial factors significantly

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contribute to the experience of childbirth, enhancing the critical impact of a comprehensive approach to care in labour [6]. The amount of support provided by caregivers, the quality of the caregiver–patient relationship and involvement of the patient in the decision-making process have been identified as key factors [4,7,8]. In recent years, there has been an increasing focus on women's desire to be involved in decisions related to their own pregnancy and childbirth [9–11]. Hodnett also demonstrated that women who had significant involvement in the decision-making process showed a higher degree of satisfaction with the birth experience [4]. Four important factors have been identified: personal expectations, support from caregivers, the caregiver–patient relationship and involvement in decision-making.

On the other hand, there are also numerous factors whose precise influence on satisfaction with childbirth is rather unclear. It has only been incompletely evaluated whether the experience of labour itself, regardless of mode of birth, is able to confer beneficial or harmful emotions [5]. Data on the induction of labour are ambivalent, as recent studies have reported a positive childbirth experience after induction [12–15].

The influence of the mode of delivery on women's satisfaction with the childbirth experience is quite unclear. It seems reasonable that divergences from the intended process, such as secondary caesarean sections or operative vaginal interventions, and in particular emergency situations such as an emergency caesarean section, may have a very traumatic influence. It is equally possible, however, that the influence of the mode of birth may be overestimated and that other factors are more important to a woman giving birth. Hardly any information is available on this topic.

The aim of the present study was therefore to investigate the extent to which satisfaction on the part of women who are giving birth depends on the mode of birth and to evaluate the factors that determine women's postpartum degree of satisfaction.

## 2. Materials and methods

The study included 335 women with term pregnancies between May 2010 and September 2011. Women with singleton pregnancies at term (≥259 days of gestation) were assessed for the investigation. Cases of structural or chromosomal malformation of the fetus or intrauterine fetal death were excluded. Gestational age was assessed from the last menstrual period and confirmed by measurement of fetal crown–rump length during a first-trimester scan.

After childbirth, the women were given a questionnaire form (Tables 1a and 1b) for self-completion before discharge. All the women provided oral informed consent. The study was approved by the institutional review board. The questionnaire included aspects potentially influencing the perception of delivery [4,16,17]: attendance at childbirth preparatory courses, presence of a person of trust during childbirth, pain during the birth, relationship with the midwife and obstetrician, and involvement in decision-making before, during and after childbirth. Some of the questions were assessed using a five-point scale with the response options 'bad', 'slight', 'moderate', 'good' and 'very good', while others could be answered with 'yes' or 'no'. The question 'Are you satisfied with your childbirth?' had to be answered with 'not at all', 'slightly', 'moderately', 'quite a lot' or 'very much'. This part of the questionnaire was already used in an earlier study [13].

**Table 1a**
Questionnaire, part 1: general questions.

| | |
|---|---|
| • Attended a childbirth preparatory course or similar courses | Yes – no |
| • Presence of a person of trust (e.g., husband) during childbirth | Yes – no |
| • Relationship with midwife | Bad – slight – moderate – good – very good |
| • Relationship with obstetrician | Bad – slight – moderate – good – very good |
| • Involvement in decision-making: | |
| Before childbirth | Bad – slight – moderate – good – very good |
| During childbirth | Bad – slight – moderate – good – very good |
| After childbirth | Bad – slight – moderate – good – very good |
| • Satisfaction with childbirth | Not at all – slight – moderate – good – very good |

**Table 1b**
Questionnaire, part 2: Salmon's item list.

| | | | |
|---|---|---|---|
| 1 | Disappointed | 1–2–3–4–5–6–7 | Not disappointed |
| 2 | Fulfilled | 1–2–3–4–5–6–7 | Not fulfilled |
| 3 | Enthusiastic | 1–2–3–4–5–6–7 | Not enthusiastic |
| 4 | Satisfied | 1–2–3–4–5–6–7 | Not satisfied |
| 5 | Delighted | 1–2–3–4–5–6–7 | Not delighted |
| 6 | Depressed | 1–2–3–4–5–6–7 | Not depressed |
| 7 | Happy | 1–2–3–4–5–6–7 | Not happy |
| 8 | Excited | 1–2–3–4–5–6–7 | Not excited |
| 9 | Good experience | 1–2–3–4–5–6–7 | Bad experience |
| 10 | Coped well | 1–2–3–4–5–6–7 | Did not cope well |
| 11 | Cheated | 1–2–3–4–5–6–7 | Not cheated |
| 12 | In control | 1–2–3–4–5–6–7 | Not under control |
| 13 | Enjoyable | 1–2–3–4–5–6–7 | Not enjoyable |
| 14 | Relaxed | 1–2–3–4–5–6–7 | Not relaxed |
| 15 | Anxious | 1–2–3–4–5–6–7 | Not anxious |
| 16 | Painful | 1–2–3–4–5–6–7 | Not painful |
| 17 | Easy | 1–2–3–4–5–6–7 | Not easy |
| 18 | Time going fast | 1–2–3–4–5–6–7 | Time going slowly |
| 19 | Exhausted | 1–2–3–4–5–6–7 | Not exhausted |
| 20 | Confident | 1–2–3–4–5–6–7 | Not confident |

To calculate the sum score, items 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14, 17, 18, 20 are transformed by $8 - x$ ($x$ = the score ticked by the participant); the mean of the items actually rated is then multiplied by 20; and finally, the resulting product is reduced by 20 to allow 0 as the minimum score (maximum score = 120).

The 20-item questionnaire included a multidimensional approach to the birth experience, an objective assessment tool first presented by Salmon – Salmon's Item List (English-language version, SIL-Engl) [18,19]. The questionnaire was developed from terms and expressions used by women spontaneously after birth to describe their own birth experience [18,19]. The German-language version of the list (SIL-Ger) was used in the present study [20,21]. Items are rated on a numerical scale from 1 to 7, with a total score which has been shown to have good internal consistency. Scores above 70 suggest a positive birth experience, whereas a score below 70 indicates a negative birth experience [17].

In addition, demographic data (age, number of pregnancies, parity and gestational age) as well as outcome parameters (mode of delivery, birth weight, umbilical cord artery pH < 7.10, Apgar score after 5 min, postpartum transfer of the newborn to the neonatal unit) were documented.

Data were analysed using the Statistical Package for the Social Sciences programme, version 20 (SPSS Inc., Chicago, IL, USA).

Chi-squared tests were used for comparison of proportions (replaced with Fisher's exact test if any expected frequencies were lower than five). Group means were compared using one-way analyses of variance. Kruskal–Wallis tests were used when the data were not normally distributed. Univariate and multivariate linear regression analyses were used to assess the association of demographic and pregnancy variables, and variables that influence the perception of childbirth on the total SIL-Ger score. All covariates with a $P$ value ≤ 0.10 in the univariate analysis were included in the multivariate logistic regression models.