

Giving birth after caesarean

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Giving birth after caesarean: Identifying shared preferences among pregnant women using Q methodology

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ABSTRACT

Background: Caesarean rates are rising worldwide, the main contributor being the elective repeat caesarean. During the past decades, rates of vaginal birth after caesarean dropped considerably. This requires insight in women's preferences regarding giving birth following a previous caesarean.

Aim: To gain a better understanding of women's values and preferences regarding the upcoming birth following a previous caesarean. Using Q methodology, this study systematically explores and categorises their preferences.

Methods: Q methodology is an innovative research approach to explore and compare a variety of viewpoints on a certain subject. Thirty-one statements on birth after caesarean were developed based on the health belief model. Thirty-six purposively sampled pregnant women with a history of caesarean ranked these statements from least to most important. By-person factor analysis was used to identify patterns which, supplemented with interview data, were interpreted as preferences.

Findings: Three distinct preferences for giving birth after a caesarean were found; (a) "Minimise the risks for me and my child", giving priority to professional advice and risk of adverse events, (b) "Seek the benefits of normal birth", desiring to give birth as normal as possible for both emotional and practical reasons, (c) "Opt for repeat caesarean", expressing the belief that a planned caesarean brings comfort.

Conclusions: Preferences for birth after caesarean vary considerably among pregnant women. The findings help to understand the different types of information valued by women who need to decide on their mode of birth after a first caesarean.

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Statement of significance

Problem or issue

The greatest contributor to the high caesarean rate is the elective repeat caesarean after a previous one. Women pregnant after caesarean are counseled on the intended mode of birth. Internationally, guidelines advice to incorporate women's preferences in counseling.

What is already known

Women pregnant after caesarean weigh different factors in deciding on mode of birth. However, obstetricians act as

information providers with limited consideration of women's preferences.

What this paper adds

A more thorough understanding of the preferences for birth after caesarean in order to not only support the counseling conversation, but also to help understanding reasons for the declining tendency toward trial of labour after caesarean.

1. Introduction

The rate of deliveries by caesarean has been rising worldwide. At no point in history have caesarean rates been as high as they are today.¹ Caesareans are associated with medical risks for mothers and newborns, and the rising rate increases the economic burden

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on health care systems.² The greatest contributor to the high caesarean rate is the elective repeat caesarean after a previous one.³ During the past decades, rates of vaginal birth after caesarean dropped considerably, from 48% to 30% in the United States and from 46% to 36% in the United Kingdom.^{3,4}

Women pregnant after caesarean are counseled on the intended mode of birth. Internationally, guidelines advise to incorporate women's preferences in counseling.^{5–8} However, Munro et al. found that physicians working in obstetrics acted as information providers with limited consideration of women's preferences.⁹ Research undertaken to understand women's preferences demonstrated that different medical as well as non-medical factors, such as the experience of the previous caesarean, play a role in weighing both options.^{4,10,11} These qualitative studies provide insight into influences that shape women's attitudes, but have not established the degree of importance of these aspects to women. This study aims to gain a more thorough understanding of the preferences for birth after caesarean that exist among pregnant women by asking the question: "What do pregnant women find important for birth after caesarean?" This would not only support the counseling conversation, but might help to better understand reasons for the declining tendency toward trial of labour after caesarean.^{3,4} We used Q methodology, for its ability to reveal different social perspectives that exist on a topic, in this case women's preferences toward birth after a previous caesarean.¹²

2. Methods

Q methodology is a research technique that combines qualitative and quantitative methods in order to uncover the main viewpoints about a subject within a certain population.^{12,13} In contrast to more commonly used quantitative and qualitative methods, Q methodology inverts subjects and variables. By doing so, information on variables (in this case: aspects of birth after caesarean) is obtained instead of information on participants. In this manner, patterns of opinions that are shared among people can be found. This leads to the revelation of social perspectives; in our case to preferences for birth after caesarean. Participants were presented a set of statements that cover aspects that are possibly important to them in regard to the upcoming birth. Participants were asked to rank each statement in a pyramid-shaped grid (Fig. 1) according to the degree of importance they assigned to it. Qualitative information was collected by interviewing participants after populating the grid to explain their rankings.

2.1. Statement set development

We used the health belief model as the theoretical framework to develop the statement set (Fig. 2). The health belief model helps to explain and predict health behaviour. It consists of six

components shaping individuals' health beliefs: perceived susceptibility (likelihood of getting a complication or disease), perceived severity (seriousness of a complication or disease), perceived benefits (advantages gained by a certain behaviour), perceived barriers (difficulties that impede to carry out a certain behaviour), cues to action (factors that help making decisions) and self-efficacy (belief in one's ability to comply to a behaviour).^{14–17} The constructs of the health belief model have been previously described as applicable to the decision women make on their intended mode of birth.¹⁶ Through a non-systematic review of scientific and popular databases by the lead researcher (AR), a large variety of factors that women potentially find important were identified.^{4,10,16,18–22} In addition, four doctors were asked to provide regularly heard statements of women deciding on the mode of post-caesarean birth. One researcher (MCL) added statements based on her experience as a psychological counsellor for women with birth-related mental health problems. An initial set of 47 statements was developed. In joint discussion with three researchers (AR, JE, PT) adjustments were made; statements covering similar topics were merged or deleted. This process resulted in a final set of 31 statements (Table 1). The final statement set was tested for comprehensiveness and comprehensibility in one pilot interview, which confirmed the statements. No changes were made.

2.2. Setting and recruitment of participants

In the Netherlands, all hospitals facilitate trial of labour after caesarean. Healthy women with a history of a caesarean have their antenatal check-ups in midwife-led practices, unless they choose to visit a hospital. Women with a medical condition or a high-risk pregnancy will be referred to secondary care at the beginning of pregnancy. All women with a previous caesarean are referred to a hospital for counseling on the mode of birth when they reach a gestational age of approximately 34–36 weeks and they will give birth in secondary care under the responsibility of a gynaecologist. In the Netherlands, a relatively high number of women (70%) choose trial of labour after caesarean.²³

In the current study, the inclusion criteria included; being pregnant after one previous caesarean, understanding and reading of either Dutch or English, not having been counselled on the mode of birth yet. The exclusion criteria included; having a medical indication for repeat caesarean or having had a trial of labour after caesarean already in a previous pregnancy. We used a strategic sampling approach by selecting participants with different characteristics, to create a balanced participant group.¹³ Therefore, we used the following sampling frame: women from an academic hospital population, a non-academic hospital population, and three midwife-led practices; and across these settings, women from different ages, educational levels, religions and nationalities/

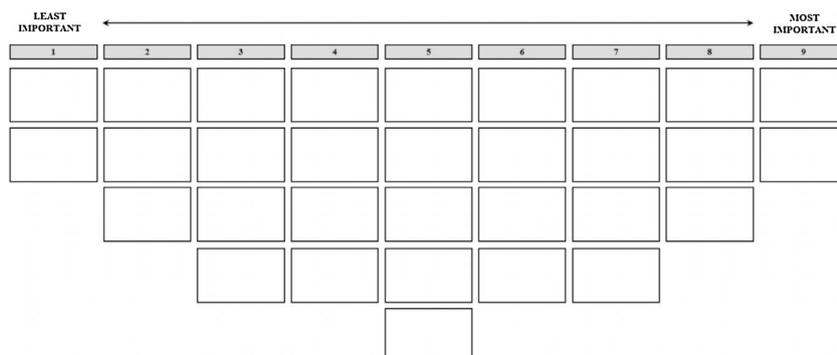


Fig. 1. Q sort grid.

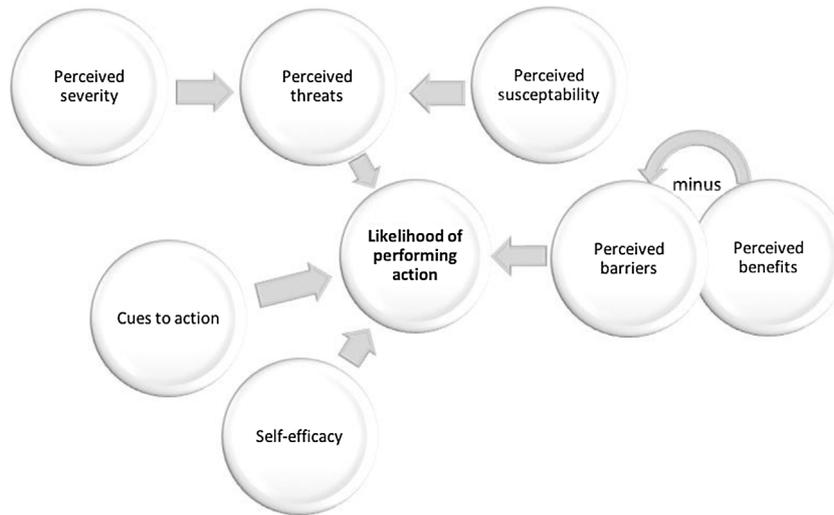


Fig. 2. Health belief model—derived from Glanz and Bishop¹⁴ and Janz and Becker.¹⁷

Table 1
Statement scores per preference, categorized by components of the health belief model.

Statements	Preference		
	A	B	C
Perceived susceptibility			
1. The chance of complications of caesarean birth	+3	+1	+1
2. The chance of complications of vaginal birth	+2**	+1	0
Perceived severity			
3. My knowledge on trying to deliver vaginally	-1	-1	-1
4. The chance of rupture of the uterine scar	+3**	+2**	-2**
5. My experience with caesarean birth	+1*	0	+3*
6. The chance of damage to my perineum or pelvic floor	+1	+1	+1
Perceived benefits			
7. Safety of the baby	+4	+4	+4
8. My own safety	+4	+4	+2
9. To avoid a caesarean	-2	0*	-3
10. To avoid emergency caesarean	+2	0	0
11. To have the least amount of uncertainty whilst giving birth	+1	0	+2
12. The possibility to plan when the baby will be born	-3	-2	+3**
13. To avoid labor pains	-3	-3	+4**
14. To avoid vaginal birth	-2*	-4*	+2**
15. Time to recovery after birth	0	+2	+1
16. The possibility to stay in the hospital after birth	-1	-2	+2**
17. To have contact with my newborn directly birth	+2	+3	+3
18. The wish to have another pregnancy after this one	+2**	-2	-1
19. To experience natural birth	-1**	+3**	-4**
Perceived barriers			
20. The chance of success of a trial of labor	0**	+3**	-2**
21. The experience of other women with caesarean birth after previous caesarean birth	-1*	-3	-2
22. The experience of other women with trial of labor after previous caesarean birth	0	-2	-3
Cues to action			
23. My doctor's advice in current pregnancy	+3	+2	0*
24. The opinion of my partner	+1**	0*	-3**
25. The opinion of my friends	-4	-4	-4
26. The opinion of my family	-3	-3	-2
27. To prove that I am able to give birth vaginally	-4*	-1	-1
28. To at least try to deliver vaginally	-2	+2**	-1
Self-efficacy			
29. To be in control during whilst giving birth	0	-1	+1*
30. To be able to experience the ideal birth	-2*	-1	0
31. The confidence I have in my own body	0	+1	0

Bold type indicates consensus statement, non-significant at $p > 0.01$.
 Bold italic type indicates consensus statement, non-significant at $p > 0.05$.
 * Distinguishing statement at $p < 0.05$.
 ** Distinguishing statement at $p < 0.01$.

ethnicities were represented. There were no restrictions with regards to gestational age at time of inclusion. Potential participants were recruited by their health care providers, either their midwife or their doctor between May 2017 and January 2018.

They were presented the study information and were included after signing informed consent.

Q methodology studies typically include between 20 and 60 respondents, depending on the purpose of the study or

how long it takes to reach data saturation.¹³ Because the aim of this study is to explore the diversity of views and only a few participants sharing a view are needed to identify it, such a limited number of purposively selected participants is generally sufficient for the analysis.²⁴ Considering the specificity of the study population, topic and context, we aimed to include between 30 and 40 women.

2.3. Data collection

Participants received written instruction for ranking the 31 statements using the sorting grid. Subsequently, each participant filled out a questionnaire containing questions on demographic data and medical history. After ranking the statements and completing the questionnaire, participants were asked to explain the motivation for their ranking of the statements in an interview, with particular attention to the statements ranked at the extreme ends. Interviews were audio-recorded and transcribed verbatim. Transcripts were coded to allow thematic content analysis. Data were processed anonymously.

2.4. Analysis

Individual statement rankings were subject to by-person factor analysis using PQMethod 2.35.²⁵ The assumption underlying this analysis is that participants who rank statements similarly, have similar preferences toward birth after caesarean. For each factor a composite ranking of the statements was calculated; a weighted average ranking of all statements that represents how a participant with 100% correlation with that factor would have ranked the statements. The factors were interpreted as preferences for the upcoming birth, using both this composite statement rankings and the qualitative data of women associated with the factor. The interpretation of the composite rankings focused on the characterizing statements for the factor (i.e., those with a score −4, −3, +3 or +4 in the composite ranking) and the distinguishing statements (i.e., statements whose rankings in one factor differed statistically significantly from those in all other factors at $p < 0.01$ or $p < 0.05$). The remaining statements were included in the interpretation, as well as the explanations that participants who were statistically significant ($p < 0.05$) associated with the factor gave to their ranking of the statements. Finally, the consensus statements (i.e., statements whose rankings did not differ significantly between any of the factors) were inspected and described.

2.5. Ethics approval and consent to participate

The Medical Ethics Review Committee of VU University Medical Centre examined the study protocol (#2017.262) and judged that an official approval of this study was not required.

3. Results

A total of 36 women participated in the study. One participant had to be excluded due to language barriers that became apparent after inclusion. Participant characteristics are shown in Table 2. Inspection of the factor solutions supported by the data resulted in selection of a three-factor solution. Table 1 shows the composite ranking of statements for each preference. The composite rankings were defined by 28 participants (80%) that associated uniquely with one of the factors (Table 3). In the following section, results are illustrated with quotes.

Table 2

Details of purposively sampled participants who completed the study.

Characteristics	Participants (n = 35)
Age, median (IQR)	35 (31.5–36.5)
Nationality ^a	
European	30.5 (87%)
Asian	3 (9%)
African	1 (3%)
South American	0.5 (1%)
Employed	31 (89%)
Religious	14 (40%)
Gestational age, median (IQR)	27 + 0 (22 + 4 – 29 + 5)
Antenatal care in	
Midwife-led practice	5 (14%)
Non-academic hospital	2 (6%)
Academic hospital	28 (80%)
Pregnant after fertility treatment	6 (17%)
Pregnant with twins	2 (6%)
Last caesarean planned during pregnancy	9 (26%)
Experience-score last birth ^b , median (IQR)	16 (12–22)
Family completed after current pregnancy	
Yes	15 (43%)
No	5 (14%)
Not sure	15 (43%)
At time of interview, tendency towards	
Vaginal birth	14 (40%)
Caesarean	11 (31%)
Not sure	10 (29%)

IQR, interquartile range.

^a Participants with two nationalities were counted as 0.5 for every nationality.

^b Self-reported experience score of last birth on a 7-point scale in four domains, 4 = most negative score, 28 = most positive score.

3.1. Patterns of preferences in giving birth after caesarean

3.1.1. Preference A: minimise the risks for me and my child

Women defining this factor emphasised the importance of information about possible complications of both modes of birth (statement 1: +3, statement 2: +2**, statement 4: +3**). “I do not have a tendency of going normal or going caesarean. (. . .) I just try to take any information in.” They expressed a need for doctor’s advice based on their particular situation (statement 23: +3), and trusted their doctor to advise them on the option with the smallest risk of complications. “[The chance of complications is] the assessment of doctors. I do not have a clear idea of it for myself, but if they say: well, there is a chance of complications, then I would rely on that.” These women indicated that they tried to use information to enhance predictability and safety of the upcoming birth. Safety of both mother and baby were considered highly important (statement 7: +4, statement 8: +4), and women expressed the contrast that can be found in these priorities in the case of birth after caesarean. “Yes, it [a caesarean] does [feel more safe] for sure. It is more me that I am thinking of. There is always a risk with the operation, right? But I feel it is more on me than it would be on the baby.” The wish to have another pregnancy after this one is important for women holding this preference and might influence their need for information (statement 18: +2**). Also, an important aspect that contributes to the need for information and doctor’s advice is the wish to avoid uncertainty in general and emergency caesarean specifically (statement 10: +2). “I prefer everything to be absolutely clear and certain, but of course that is impossible.” Women defining preference A were relatively more likely to involve their partners in decision-making, fitting the input-seeking behavior that seems to prevail (statement 24: +1**).

3.1.2. Preference B: seek the benefits of normal birth

Women who loaded on this factor expressed a tendency toward trial of labour, in order to achieve vaginal birth (statement 19: +3**, statement 14: −4*). More than women with the other preferences they would like to avoid a caesarean (statement 9: 0**) for two

Table 3
Characteristics of factors.

Factor		% Variance explained	Participants associated with factor
A	Minimise the risks for me and my child	28	13 (37%)
B	Seek the benefits of natural birth	25	13 (37%)
C	Opt for repeat caesarean	13	2 (6%)
Participants associated with more than one factor			7 (20%)

main reasons: to be able to live the experience of vaginal birth (statement 19: +3**; statement 28: +2**; statement 13: –3), and to have a swift recovery, for practical reasons (statement 15: +2). Women with this preference expressed a deeper, primal feeling associated with giving birth vaginally. *“Sometimes, the body is not cooperating and then, well, you can’t do anything about it. But it’s frustrating, because . . . well, it is basically why we are on earth of course.”* This feeling was among others motivated by the wish to have contact with the baby immediately after birth (statement 17: +3). *“I missed . . . , and I think that’s very important, it’s the dream of every mother to have the baby with you directly. And that doesn’t happen during a caesarean.”* Most women with this preference also valued the faster recovery after vaginal birth, so that they would be able to take care of their other children as well. *“I’ve heard that recovery goes much faster. [. . .] I have another child who’s four years old, he has to go to school.”* Nonetheless, the chance of failure of trial of labour was perceived as a barrier (statement 20: +3). Therefore, some women expressed would rather plan a caesarean in order to avoid emergency repeat caesarean, which they thought would be the least comparable to normal birth.

3.1.3. Preference C: opt for repeat caesarean

Women defining this factor were very clear that they had no wish to experience natural birth (statement 19: –4**; statement 14: +2**) and preferred a caesarean (statement 9: –3). They ascribed great importance to avoiding labour pains (statement 13: +4**), to being able to plan when the baby will be born (statement 12: +3**), to have the least uncertainty (statement 11: +2) and to be in control while giving birth (statement 29: +1*). This resulted in their avoidance of vaginal birth (statement 14: +2**). *“I think there are a lot of women who would enjoy giving birth vaginally. Then I think: I’m part of the minority, I just let the baby be taken out.”* These participants indicated that for them a caesarean feels as something that is safe and comfortable and they appreciate the possibility to stay in hospital after giving birth (statement 16: +2**). *“I love the caesarean. The room, the operation room and everything. It feels you are not alone. When you deliver it’s so much you are all sacrifice [. . .]. But in the operation room you have all this team working and it is so clean and neat and professional that you feel comfortable.”* The women who loaded on preference C tried to deliver vaginally in their first pregnancies. The desire to avoid trial of labour in their current pregnancy was superimposed on a pre-existing idea of not being able to cope with pain, which they felt was corroborated by the experience of failing to deliver vaginally in the past, and their positive experience with caesarean (statement 5: +3**). Of all women, they attached the least importance to the opinion of their partner (statement 24: –3**).

3.2. Consensus statements

All participants emphasised the importance of the safety of their babies as well as safety of themselves. *“What I think is important? Just that we both make it and that it [the baby] is healthy.”* Consensus was also found in statements of least importance to the participants: the opinions of family and friends. *“Friends are just for fun, for a good conversation, but their opinion on me giving birth is not important to me.”*

4. Discussion

This study used Q methodology to map pregnant women’s preferences for giving birth after caesarean. Three preferences were revealed. Preference ‘*Minimise the risks for me and my child*’ is characterized by a great deal of uncertainty, fueled by the fact that no option is without risks. The information-seeking behavior that the women who loaded on this factor described, is in accordance with earlier findings in women deciding on mode of birth after caesarean.^{26–28} For women with this preference, health care professionals need to pay attention to the fact that they might have difficulties with applying health risk information to themselves, possibly either over- or underestimating risks.²⁹ In contrast, women with the other two preferences ‘*Seek the benefits of normal birth*’ and ‘*Opt for repeat caesarean*’ might be less uncertain. These preferences indicate that some women already have a fixed idea on their upcoming births, even before receiving counseling from a health care provider. In light of the worldwide declining uptake of vaginal birth after caesarean, it is conceivable that women increasingly tend toward preference ‘*Opt for repeat caesarean*’ due to the objectified and perceived increasing safety of caesarean birth.³⁰

Our results show discrepancy with current literature on known birth choice influencers. Konheim-Kalkstein et al. described the influential role of being able to control the birth process.³¹ Our participants however, reckoned that giving birth is a process that is not likely to be controlled. They tended to feel neutral about this statement. An earlier article by the same authors described that women actively seek birth narratives of other women on the internet.²⁷ Women in our cohort awarded little importance to the experiences of other women. An explanation for these discrepancies might be the population from which the two study-samples were taken; our cohort mainly consisted of Dutch women who were recruited in-person, whereas Konheim-Kalkstein included American women in an internet-based study. Possibly, American women who want to pursue vaginal birth after caesarean are in search of support by others who plan the same, while Dutch women probably experience this support more often within society and from their health care providers.³² This is in line with Bryant et al. describing that the social context of caesareans influences the decision women make on the desired mode of birth.³³

Research amongst Australian and English women described that a distressing previous birth experience induces the decision for planned repeat caesarean.⁴ Our study did not confirm this. We found that most women indeed reflected on their past birthing experience when evaluating their preferences toward the upcoming birth, but women who qualified their previous birthing experiences as distressing were represented in all preferences. This suggests that a previous birthing experiences does not necessarily lead to a major change in preferences for the next birth. However, to confirm this suggestion, more research is needed.

4.1. Strengths and limitations

The findings need to be interpreted in the light of the study’s limitations. All women who participated in the study where

inhabitants of the same region in the Netherlands. Therefore, the identified preferences are not transferable directly to women in other settings or countries. Although the found preferences may reflect our specific population, our study provides the insight that different preferences for giving birth after caesarean exist within a population. That concept is transferable to other populations and emphasises the need to incorporate women's preferences in antenatal counseling on mode of birth after caesarean. By employing Q methodology we were able to uncover preferences, but we could not establish the frequency of these preferences in the population. Moreover, it is not appropriate to make any claims regarding the relation of these preferences with characteristics of respondents. Information on the prevalence of each preference and their relation with characteristics of women in a wider population can be acquired using surveys.³⁴ Employing such a survey could not only be valuable for scientific purposes, but all the more in clinical practice. It could provide a starting point for health care providers to discuss preferences and concerns with women more effectively. Second, although we used the health belief model to structure the development and warrant the comprehensiveness of the statement set, we conducted a literature review and we sought input of health care practitioners working in the field, we cannot guarantee that all aspects that might be important to pregnant women were included. Upon request, some women indicated to miss a statement on breastfeeding. However, they indicated this topic was covered by statement 17 (*To have contact with my newborn directly after birth*). No other topics were omitted according to the participants. Third, one could question to what extent people are conscious of factors they value or that exert an effect upon them. People might for example be unconsciously influenced by opinions of others, without acknowledging this in the study setting.

The strength of our study is the fact that we included women before they received counseling on mode of birth and that we used a strategic sampling method in order to include women with different backgrounds and viewpoints. In this way, we were able to capture preferences that were unbiased by health care providers and we were able to create knowledge that can be used during the first counseling conversation on the intended mode of birth after caesarean.

5. Conclusion

There is no simple answer to the question “what is the best way to give birth after a caesarean?”³⁵ This study is the first to provide insight in women's decision-making process by revealing preferences on birth after caesarean that already exist before counseling. We found three main preferences: (A) *minimise the risks for me and my child*, (B) *seek the benefits of normal birth* and (C) *opt for repeat caesarean*.

As patient-centeredness is increasingly receiving attention in healthcare and knowing there is no absolute best option for giving birth after a previous caesarean, we suggest that health care professionals in obstetrics should be aware that different preferences for giving birth after caesarean exist.^{36,37} Preferences vary widely amongst pregnant women, already before they are counseled by health care providers. Further research should focus on the question when and how ideas toward mode of birth originate; possibly already before or right after the first caesarean, or during the interval between the two pregnancies. Also, our results highlight the need to investigate whether most women tend to hold one of the preferences throughout the pregnancy, or if they feel sympathy toward several preferences that may change over time. This knowledge is helpful for developing strategies to involve women's preferences in antepartum decision-making, but also to better understand the reasons for the declining tendency

toward vaginal birth after caesarean and the worldwide increase of caesarean rates.

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Conflict of interest statement

None declared.

CRediT authorship contribution statement

Anna L. Rietveld: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing - original draft. **N. Job A. van Exel:** Conceptualization, Data curation, Formal analysis, Methodology, Software, Supervision, Validation, Writing - review & editing. **Merith C. Cohen de Lara:** Conceptualization, Writing - review & editing. **Christianne J. M. de Groot:** Conceptualization, Resources, Supervision, Writing - review & editing. **Pim W. Teunissen:** Conceptualization, Methodology, Supervision, Writing - review & editing.

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