Original Research – Quantitative

Client experiences with perinatal healthcare for high-risk and low-risk women

Cherelle M.V. van Stenus[a,*], Magda M. Boere-Boonekamp[b], Erna F.G.M. Kerkhof[c], Ariana Need[d]

[a] Institute for Innovation and Governance Studies, Departments of Public Administration and Health Technology & Services Research, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands
[b] Institute for Innovation and Governance Studies, Department of Health Technology & Services Research, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands
[c] Het Verloskundig Huys, Overtoom 57, 8043 LZ Zwolle, The Netherlands
[d] Institute for Innovation and Governance Studies, Department of Public Administration, University of Twente, P.O. Box 217, 7500 AE, Enschede, The Netherlands

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ABSTRACT

Problem: It is unknown if client experiences with perinatal healthcare differ between low-risk and high-risk women.
Background: In the Netherlands, risk selection divides pregnant women into low- and high-risk groups. Receiving news that a pregnancy or childbirth has an increased likelihood of complications can cause elevated levels of emotional distress.
Aim: The purpose of this study is to describe client experiences with perinatal healthcare and to determine which, if any, background characteristics, pregnancy circumstances, childbirth or follow-up care characteristics are explaining variables of differences in client experiences between high-risk and low-risk women.
Methods: Client experiences were measured with a validated questionnaire completed by 1388 women within 12 weeks after childbirth.
Findings: Women rated their experiences with perinatal healthcare with a mean score of 3.78 on a scale of 1–4; 5.5% of the women rated their experiences as "notably bad". Client experiences with perinatal healthcare show small variations, with a lower mean score for women who were at high risk (3.75) compared to low-risk women (3.84). This difference is partially due to more unplanned medical interventions and pain relief during childbirth in the high-risk group. Also, single mothers and non-Dutch women were more susceptible to less positive experiences.
Conclusion: Given the potential negative impact of adverse client experiences, this study highlights the need for healthcare professionals to be aware of what women are susceptible for having had negative experiences. It is advised that healthcare provision be altered to tailor to the needs of these women.
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Statement of significance

Problem or issue

It is unknown if client experiences with perinatal healthcare differ between low- and high-risk women. And if there are differences, what factors can explain them.

What is already known

Two-thirds of Dutch women experience a high risk pregnancy and/or childbirth. Many factors are known to influence client experiences.

Abbreviation: WHO, World Health Organization.
* Corresponding author at: University of Twente, Faculty Behavioural Management Services, Department of Public Administration, P.O. Box 217, 7500 AE Enschede, The Netherlands.
E-mail addresses: c.m.v.vanstenus@utwente.nl (C.M.V. van Stenus), m.m.boere-boonekamp@utwente.nl (M.M. Boere-Boonekamp), kerkhof@home.nl (E.F.G.M. Kerkhof), a.need@utwente.nl (A. Need).

What this paper adds

High-risk women had significantly fewer positive experiences than low-risk women. The study provides insight into the factors that contribute to the different experiences between low- and high- risk women. Given the potential negative impact of adverse client experiences, this study highlights the need for healthcare professionals to be aware of what women are susceptible for negative experiences.

1. Introduction

In the Netherlands, risk selection is used to divide pregnant women into low- and high-risk groups. Tailored care is then provided according to the identified risk.[1] This means that the course of pregnancy and childbirth can go three ways: (1) low-risk women are guided by community midwives in a primary care setting; (2) low-risk women are guided by community midwives until they become high-risk and are then referred to clinical midwives and/or obstetricians; (3) high-risk women are guided by clinical midwives and/or obstetricians in a secondary or tertiary care setting throughout the pregnancy and childbirth.[2] Community midwifes are the responsible caregivers for low-risk women during pregnancy and childbirth. They are autonomous practitioners and work from a local midwifery practice. Community midwifes have completed a four-year education program (Bachelor) at the midwifery academy.[3] Clinical midwifes are employed to work in secondary or tertiary hospital setting, where they take care of high-risk women.[4] Additionally, having the same Bachelor education as community midwives, clinical midwives also completed a Master program of 2.5 years.[5] Defined high-risk pregnancy and/or childbirth as "any condition which could increase the likelihood of an adverse outcome for mother and/or foetus".[6] Complications include pre-existing medical disorders, such as diabetes mellitus and hypertension, multiple pregnancies, preeclampsia and preterm labour. If complications occur, women are transferred to an obstetrician or clinical midwife in secondary or tertiary care. The indications for a transfer from primary to secondary or tertiary care have been included in the "Obstetric Indication List".[7] Low-risk pregnancy and/or childbirth refers to women aged 18–39, singleton or term pregnancy and the absence of any other medical or surgical conditions that pose a high risk for poor pregnancy outcome.[8]

In 2015, 87.3% of all pregnant women in the Netherlands started antenatal healthcare with a community midwife, indicating they had a low risk of developing complications. During pregnancy, 35.8% of these women were transferred to a clinical midwife or obstetrician due to an increased likelihood of complications. During labour, 22.4% of all pregnant women who started antenatal healthcare with a community midwife were transferred to the secondary care level. This resulted in 71% of all pregnant women giving birth under the supervision of a clinical midwife or an obstetrician.[9] These numbers show that most women in the Netherlands who gave birth in 2015 experienced an increased risk of complications.

Women who receive news that the pregnancy or childbirth has an increased likelihood of complications for herself and/or the foetus might experience stress and anxiety, depression and lower self-esteem.[6,10,11] An elevated level of emotional distress is often associated with the inability to anticipate pregnancy complications and of knowing what to expect.[10] Receiving timely, relevant and comprehensible information from healthcare professionals can help clients cope with unknown and stressful situations. Failing to recognise the needs of women with an increased likelihood of complications during pregnancy and childbirth can result in a negative client experience.[10]

Negative or unforeseen birth experiences are associated with maternal feelings of failure, grief, loss and problems with mother–infant interaction.[12,13] These negative experiences can have long-term effects for the woman and may influence her reproductive choices.[14] For these reasons, it is important that clients experience perinatal healthcare as positively as possible. This entails that healthcare professionals should meet their clients' needs and provide care that reflects the clients' views and preferences as much as possible.[1]

Many factors influence client experiences with perinatal healthcare, such as their background characteristics, their educational level and their age at labour.[15,16] Studies in the Netherlands have reported that obstetric factors, in particular unplanned interventions and pharmaceutical pain relief, are associated with negative recall of birth experiences when compared to spontaneous vaginal births.[12,14,17] The role of other potentially influencing factors, such as parity, ethnicity, having a partner, pregnancy planning and follow-up care, are still disputed.[18–20]

Several studies have investigated client experiences with perinatal healthcare of either low-risk or high-risk women.[6,10,11,21,22] However, no studies have compared the client experiences and characteristics between these two groups. We therefore aim to answer the following research questions: Do client experiences with perinatal healthcare differ between high-risk and low-risk women who gave birth to a live-born child in an eastern region of the Netherlands? If so, which, if any, background characteristics, pregnancy circumstances, childbirth or follow-up care characteristics explain such differences? Lastly, what are the characteristics of women who had "notably bad" experiences with perinatal healthcare?

A few of the abovementioned risk factors behind negative client experiences are unavoidable and cannot be altered by healthcare providers. However, if healthcare providers are aware of the risk factors that predict negative experiences, they can take the factors into account, pay more attention to these clients and situations, and adapt their expectation management. Improving perinatal healthcare by focusing on the particular needs of pregnant women and individualising care has been said to increase women's satisfaction.[12]

2. Method

The study was conducted in the Netherlands between April 2014 and September 2014. To obtain women's experiences of perinatal care, a questionnaire was distributed among women who recently gave birth. According to the criteria of the Dutch Medical Research Involving Human Subjects Act, this study did not need to be submitted for ethical approval by a Medical Ethical Committee.[23] Therefore, the study was reviewed and approved by the ethical committee of the University of Twente on 18 January 2015 (16011). Executives of the three involved youth healthcare organizations agreed to cooperate by handing out the questionnaires in their well-baby clinics or send the questionnaires to the home addresses of their clients.

2.1. Participants

Women who gave birth to a live-born child in an eastern Dutch region and visited the well-baby clinic between April 2014 and September 2014 for the first time after childbirth, were eligible to be included for this study. Women were recruited through well-baby clinics of three youth healthcare organisations covering three different eastern regions in the Netherlands. Well-baby clinics are

visited by nearly 99% of parents and their children aged 0–1 year.[24] A well-baby clinic is a special child health centre provided by a youth healthcare organization. It offers free basic care and prevention for all children between 0–4 years. The first fixed contact at a well-baby clinic is around four weeks after childbirth.[25] The three participating healthcare organizations together, offer youth healthcare at 61 local well-baby clinics. We asked the clinics to exclude mothers born in the year 1996 or later and those who could not understand the Dutch language sufficiently. Of the 3654 eligible women we assumed to have received the questionnaire, 1696 (46.4%) women responded by filling out the questionnaire. Information about client experiences with perinatal care (dependent variable), background characteristics or explaining factors (independent variables) was missing in 308 (18.2%) cases, therefore these questionnaires were excluded. The final sample for analysis consisted of 1388 women. The questionnaires were filled out on average 6.1 weeks after childbirth.

The risk level of women who gave birth was divided in four categories: (0) low-risk; (1) high-risk from the beginning of the pregnancy; (2) high-risk during the pregnancy; (3) high-risk at the onset of childbirth or during childbirth. Women were considered to be low-risk if they experienced uncomplicated pregnancies (i.e. singleton gestation without maternal or foetal risk factors) and gave birth at a primary care level, under guidance of a community midwife or general practitioner. Women were classified as being in the first high-risk group when they were guided by clinical midwives and/or obstetricians in secondary care from the start of their pregnancy because of predisposing risk factors. The second high-risk group consisted of women who had complications during the pregnancy for which they needed to be transferred from the primary care to the secondary care level. The third high-risk group consisted of women who had (an increased risk of developing) complications during labour (i.e. prolonged labour or preterm birth), an indication for pharmacological pain medication or for continuous monitoring of the mother and child, for which they needed to be transferred from the primary care to the secondary care level.[26] Women in one of the three high-risk groups were all guided by clinical midwives and/or obstetricians during (at least part of) labour and childbirth.

2.2. Data collection procedure

Numbered questionnaire booklets were distributed among women who visited the well-baby clinic about a month after giving birth. In two out of three youth healthcare organisations, the questionnaires were handed out by assistants in the well-baby clinics, either upon the women's arrival at the clinic for the first time or at the end of the first appointment when the women would also receive other paperwork. To avoid adding to the workload of the healthcare providers, the third youth healthcare organisation delivered the questionnaires to the home addresses of all women who were about to have their first routine appointment with their baby at the well-baby clinic.

Questionnaire packages contained a Dutch information sheet and paper questionnaire, which included a link to the questionnaire's online version. All women were gifted a coupon with a discount code to a web shop; the coupon was also included in the questionnaire package.

Participants could complete and return the paper questionnaire using the paid envelope provided or complete the online questionnaire. Declined questionnaire packages were returned to the researchers, who recorded the number of declined packages to enable accurate calculations of the response rate. We considered completion and submission of the questionnaire to imply consent. The answers to the questionnaire were anonymous, because there

were no questions about contact details or birth dates. No reminders were sent to non-responders, due to time and financial constraints.

2.3. Variables

The outcome variable, client experiences with perinatal healthcare (healthcare surrounding the period during labour, childbirth and continuing through the first 28days of life[22]), was measured using a client experience questionnaire (ReproQ), developed and validated by Scheerhagen and colleagues based on the World Health Organization's (WHO) responsiveness model.[27] According to this model, client experiences with healthcare are measured by eight domains: dignity, autonomy, confidentiality, communication, prompt attention, social consideration, quality of basic amenities, and choice and continuity. See Appendix A for the full questionnaire.

The participants were asked to rate the extent to which they had experiences with the topics mentioned in the questions on a 4-point Likert scale (from 1 = never to 4 = always). The total mean score of client experiences with perinatal healthcare was computed as unweighted average scores, treating "never" (1), "sometimes" (2), "most of the time" (3) and "always" (4) numerically across all eight domains. Higher scores on this scale indicated more positive experiences with perinatal healthcare.

We defined 'notably bad experiences (no = 0; yes = 1) with perinatal healthcare, as having a mean score that is two standard deviations below the mean score of the study population (mean score ≤ 3.32).

Four groups of independent variables were constructed to explain potential variations in client experiences for the different risk levels. Firstly, the following background characteristics were measured: the age of the mother at the time of completing the questionnaire (18–29 years = 0; 30–39 years = 1; ≥40 years = 2); the mother's educational level (low = 0 [none, elementary education, preparatory middle-level applied education, vocational education level 1]; middle = 1 [higher general continued education, preparatory scholarly education, vocational education level 2, 3 and 4]; high = 2 [university of applied sciences, university][28]); the mother's ethnicity (Dutch = 0; non-Dutch = 1); and whether the pregnancy was unplanned (no = 0; yes = 1). Secondly, we included variables around pregnancy circumstances: being a mother for the first time (no = 0; yes = 1), being a single mother (no = 0; yes = 1). Thirdly, the following childbirth-related characteristics were measured: medical interventions during childbirth (no medical interventions = 0; unplanned medical interventions = 1 [such as forceps, vacuum extraction or emergency caesarean section]; planned medical interventions = 2 [such as induced labour or planned caesarean section]); familiarity with the caregiver in charge of the birth ("I was familiar with the healthcare provider" = 0; "The healthcare provider was unfamiliar to me" = 1); and receiving pain medication during childbirth (no medication = 0; medication = 1). Lastly, we measured follow-up care by asking if participants visited medical specialists in the hospital for themselves or their baby after childbirth: visit medical specialist (no visit = 0; visit = 1).

2.4. Data analysis

Data were analysed using univariate, bivariate and multiple regression analyses. The analyses showed no variation in outcome and explaining variables for the timing of becoming high-risk: high-risk from beginning of pregnancy, high-risk during pregnancy, high-risk at the onset of childbirth or during childbirth (the results are available on request). Further analyses were performed with two groups: (0) low-risk and (1) high-risk. Descriptive

statistics were employed, firstly to describe the childbirth and background characteristics, pregnancy circumstances, childbirth characteristics and follow-up care of the whole sample, and secondly to explore the association between these variables and the risk level (low-risk and high-risk) (Table 1).

Subsequently, multivariate analyses using linear regression were conducted. Six regression analyses were performed to examine how the different groups of variables influence the association between risk level and client experiences (Tables 2 and 3). To increase our understanding of why women had bad experiences with perinatal healthcare, we performed bivariate analyses on the subgroup of participants with "notably bad experiences" (Table 4). Differences in risk level and other independent variables between women with "notably bad experiences" and women without them were tested by Pearson's chi-square test. The strength of associations between potential explanatory variables and client experiences are expressed as odds ratios (OR) with 95% confidence intervals (CI). All analyses were performed using the SPSS 21.0 software for Windows.[29]

3. Results

3.1. Characteristics of the sample

Participants' mean age was 30.8 years (SD 4.2) and ranged between 19 and 44 years. Almost half of the women were highly educated, while 42.0% had middle education levels and 11.2% had low education levels (Table 1). The majority of women were native Dutch (95.3%) and had a partner (97.4%). About half of the women were primiparous (46.5%) and more than three quarters had a planned pregnancy (86.7%). Almost half of the women had a medical intervention during childbirth (44.6%) and did not know the healthcare professional who supervised labour (49.9%). Pain medication during childbirth was received by 39.0% of the participants. After childbirth, one third of all women visited a specialist in the hospital for themselves or their baby (29.6%).

In comparison to all women who gave birth in the Netherlands in 2015, the respondent sample was largely representative in terms of age (mean 30.8 years in our population vs. 31.1 years nationally),

Table 1
Association between risk level (low-risk and high-risk) during pregnancy and/or childbirth and background characteristics, pregnancy circumstances, childbirth characteristics and follow-up care.

Variables	Total N = 1388		Low risk N = 473 (34.1%)		High risk N = 915 (65.9%)		P value
	N	(%)	N	(%)	N	(%)	
Background characteristics							
Age							0.23
18–29	540	38.9	186	39.3	354	38.7	
30–39	810	58.4	279	59.0	531	58.0	
>40	38	2.7	8	1.7	30	3.3	
Education							0.33
Low	155	11.2	46	9.7	109	11.9	
Middle	583	42.0	195	41.2	388	42.4	
High	650	46.8	232	49.1	418	45.7	
Ethnicity							0.27
Dutch	1323	95.3	455	96.2	868	94.9	
Non-Dutch	65	4.7	18	3.8	47	5.1	
Unplanned current pregnancy							0.91
No	1204	86.7	411	86.9	793	86.7	
Yes	184	13.3	62	13.1	122	13.3	
Pregnancy circumstances							
Single mother							<0.001
No	1352	97.4	470	99.4	882	96.4	
Yes	36	2.6	3	0.6	33	3.6	
Primiparous							<0.001
No	743	53.5	334	70.6	409	44.7	
Yes	645	46.5	139	29.4	506	55.3	
Childbirth characteristics							
Medical intervention during childbirth							<0.001
None	769	55.4	447	94.5	322	35.2	
Planned[a]	345	24.9	20	4.2	325	35.5	
Unplanned[b]	274	19.7	6	1.3	268	29.3	
Pain medication during birth							<0.001
No	847	61.0	469	99.2	378	41.3	
Yes	541	39.0	4	0.8	537	58.7	
Unfamiliar provider who guided childbirth							<0.001
No	696	50.1	433	91.5	263	28.7	
Yes	692	49.9	40	8.5	652	71.3	
Follow-up care							
Visit medical specialist							<0.001
No	977	70.4	395	83.5	582	63.6	
Yes	411	29.6	78	16.5	333	36.4	
"Notably bad" experiences with healthcare[c]							<0.001
No	1312	94.5	462	97.7	850	92.9	
Yes	76	5.5	11	2.3	65	7.1	

[a] Induced labour, planned caesarean section.
[b] Episiotomy, forceps, vacuum extraction, unplanned caesarean section.
[c] "Notably bad" ≤ 3.32 Likert score (scale 1–4).

Table 2
Linear regression results of the association between women's experiences and risk level (see Table 3 for entire multivariate analysis).

	Estimated coefficient of experiences (95% CI)
Constant (mean score 1–4)	3.78
Model 1: Risk[a]	−0.09 (−0.12 to −0.07)
Model 2: Model 1 + background characteristics[b]	−0.09 (−0.12 to −0.07)
Model 3: Model 1 + pregnancy circumstances[c]	−0.09 (−0.11 to −0.06)
Model 4: Model 1 + childbirth characteristics[d]	−0.04 (−0.07 to −0.01)
Model 5: Model 1 + follow-up care[e]	−0.09 (−0.11 to −0.06)
Model 6: Model 1 + background characteristics + pregnancy circumstances, childbirth characteristics and follow-up care[f]	−0.03 (−0.07 to 0.01)

[a] Mean score client experiences; Risk.
[b] Model 1 + Age; Education; Ethnicity; Unplanned pregnancy.
[c] Model 1 + Single mother; Primiparous.
[d] Model 1 + Medical interventions; Pharmacological pain relief; Unfamiliar with healthcare providers.
[e] Model 1 + Visit medical specialist.
[f] Mean score client experiences; Risk; Age; Education; Ethnicity; Unplanned pregnancy; Single mother; Primiparous; Medical interventions; Pharmacological pain relief; Unfamiliar with healthcare providers; Visit medical specialist.

parity (46.5% p0 in our population vs. 44.6% p0 nationally), risk level (65.9% high risk level in our population vs. 71% nationally) and pain medication (39.0% received pain medication in our population vs. 37.9% nationally).[9] Percentages of women with a low educational level (11.2% our in population vs. 25% nationally) and non-Dutch women (4.7% in our population vs. 26% nationally) were below the national average.[9,30]

3.2. Risk level of pregnant women

Of all 1388 respondents, 915 (65.9%) had a high-risk pregnancy and/or childbirth, while 473 (34.1%) had a low-risk pregnancy and/or childbirth (Table 1). Using Pearson's chi-square test, no significant differences were found between the low-risk and high-risk groups for the background variables: age, education, ethnicity and unplanned current pregnancy. In the high-risk group, the percentage of single mothers and first-time mothers was higher than in the low-risk group (resp, $p < 0.001$ and $p < 0.001$). Women with a high-risk level had significantly more medical interventions during childbirth ($p < 0.001$), pain medication during childbirth ($p < 0.001$), were more often unfamiliar with the healthcare provider that guided childbirth ($p < 0.001$), and visited a medical specialist in the hospital more often ($p < 0.001$).

3.3. Explaining variation in client experiences

Examining differences between the two groups, ANOVA yielded significant group differences in the average mean score of client experiences with perinatal healthcare. Women on a high-risk level scored 0.09 lower on client experiences (on a scale of 1–4) than women with a low risk, which is shown in Model 1 (Table 2). Women on a low-risk level had an average mean score of 3.84 (SD 0.18), while the average mean score for those with a high risk was significantly lower at 3.75 (SD 0.24, ($p < 0.001$)). The mean client experiences with perinatal healthcare in our sample was 3.78 (SD 0.23, range 1.75) on a scale of 1–4 (Table 2). The variable risk level in Model 1 explained 4% of the variance of experiences with care ($R^2 = 0.04$, $p < 0.001$) (Table 3).

Model 2 shows that adding background characteristics to Model 1 does not significantly change the differences in client experiences between low-risk and high-risk women (Table 2). The same is seen when pregnancy circumstances in Model 3 are added to Model 1. In Model 4, childbirth characteristics are added to Model 1, and here the difference in client experiences between low risk and high risk reduces from −0.09 to −0.04. In Model 5, follow-up care was added to Model 1, which does not significantly change the differences in client experiences between low-risk and high-risk women. In the final model, background characteristics as well as

pregnancy circumstances, childbirth characteristics and follow-up care are added to Model 1. Taken together, these factors significantly lower the effect of a high-risk level on client experiences from −0.09 to −0.03 (95% confidence intervals do not overlap) (Table 2).

Overall, the variables that partly explained the variation in client experiences between low-risk and high-risk women were middle educational level ($\beta = 0.04$, $p < 0.001$), non-Dutch ethnicity ($\beta = -0.06$, $p = 0.04$), single mother ($\beta = -0.09$, $p = 0.03$), planned medical interventions ($\beta = -0.04$, $p = 0.001$), unplanned medical interventions ($\beta = -0.05$, $p = 0.001$) and pain medication during childbirth ($\beta = -0.03$, $p = 0.05$). The variables included in the final model explained 66.7% of the small difference in client experiences between women who had a high-risk pregnancy and/or childbirth and women who had a low-risk pregnancy and/or childbirth (($(-0.09) - (-0.03)/-0.09 = 66.7\%$) (Table 3).

Finally, the bivariate analyses focused on the factors related to "notably bad experiences" (Table 4). Seventy-six women (5.5%) reported such experiences with perinatal healthcare (≤ 3.32 on a scale from 1 to 4), while 1312 (94.5%) women did not (> 3.32). These two groups did not differ significantly in age, education, parity, having a partner, receiving a medical intervention during childbirth or visiting a medical specialist after childbirth. The odds to experience perinatal healthcare as notably bad were higher for women with a high-risk pregnancy and/or childbirth (OR 3.21, [CI 1.7–6.15]), non-Dutch ethnicity (OR 2.59, [CI 1.19–5.65]), an unplanned pregnancy (OR 1.81, [CI 1.02–3.23]), who had pain medication during childbirth (OR 2.13, [CI 1.34–3.40]) and who were unfamiliar with the healthcare provider who guided childbirth (OR 1.89, [CI 1.17–3.06]).

4. Discussion

We found that women in an eastern part of the Netherlands in general had very positive experiences with the perinatal healthcare they received during their childbirth and neonatal period. They rated their experience with perinatal healthcare with a mean score of 3.78 (on a scale from 1 to 4), with 5.5% of the women rating their experience as "notably bad". A high rating of care is not unusual in studies on birthing experiences.[31] Pregnancies and childbirths tend to have good outcomes, and recalling care experiences is thought to be biased by the happy encounter with the newborn.[12] We wanted to know to what extent the mean scores of client experiences with perinatal healthcare differed between low-risk and high-risk women. We also explored the association of background characteristics, pregnancy circumstances, childbirth characteristics and follow-up care with clients' experiences with perinatal healthcare.

Table 3
Multivariate analyses using linear regression to explore the association between experiences of women with being high-risk or not.

	Model 1[a]			Model 2[b]			Model 3[c]			Model 4[d]			Model 5[e]			Model 6[f]		
	b	95%-CI	P	b	95%-CI	p	b	95%-CI	p	b	95%-CI	P	b	95%-CI	p	b	95%-CI	p
Risk	−0.09	−0.12 to −0.07	0.00**	−0.09	−0.12 to −0.07	0.00**	−0.09	−0.11 to −0.06	0.00	−0.04	−0.07 to −0.01	0.04	−0.09	−0.11 to −0.06	0.00	−0.03	−0.07 to 0.01	0.10
Background characteristics																		
Age																		
18–29				−0.01	−0.03 to 0.02	0.89										0.01	−0.02 to 0.03	0.89
30–39 (reference)				−	−	−										−	−	−
>40				−0.03	−0.10 to 0.05	0.45										−0.03	−0.09 to 0.05	0.50
Education																		
Low				0.01	−0.03 to 0.05	0.56										0.02	−0.02 to 0.06	0.42
Middle				0.04	0.02 to 0.07	0.00**										0.04	0.02 to 0.07	0.00**
High (reference)				−	−	−										−	−	−
Ethnicity				−0.07	−0.12 to −0.01	0.02*										−0.06	−0.11 to −0.01	0.04*
Unplanned pregnancy				−0.02	−0.06 to 0.01	0.18										−0.02	−0.06 to 0.02	0.25
Pregnancy circumstances																		
Single mother							−0.09	−0.17 to −0.02	0.01*							−0.09	−0.16 to −0.01	0.03*
Primiparous							−0.01	−0.04 to 0.01	0.28							−0.01	−0.03 to 0.02	0.60
Childbirth characteristics																		
Medical interventions																		
None (reference)										−	−	−				−	−	−
Planned										−0.04	−0.07 to −0.01	0.03*				−0.04	−0.08 to −0.01	0.01*
Unplanned										−0.05	−0.09 to −0.02	0.00**				−0.05	−0.08 to −0.01	0.01*
Pain relief										−0.03	−0.06 to −0.01	0.03*				−0.03	−0.06 to 0.01	0.05*
Unfamiliar with provider										−0.01	−0.04 to 0.02	0.35				−0.01	−0.04 to 0.02	0.41
Follow up care																		
Visit medical specialist													−0.03	−0.06 to −0.01	0.04*	−0.02	−0.05 to 0.01	0.12
Adj. R²	0.04			0.04			0.04			0.05			0.04			0.06		
Sig.	0.00			0.00			0.00			0.00			0.00			0.00		

* p < 0.05 (two-tailed).
** p < 0.01 (two-tailed).
[a] Mean score; risk.
[b] Model 1 + Age; Education; Ethnicity.
[c] Model 1 + Single mother; Primiparous; Planned pregnancy.
[d] Model 1 + Medical interventions; Pharmacological pain relief; Unfamiliar with healthcare providers.
[e] Model 1 + visit medical specialist.
[f] Mean score, Risk, Age; Education; Ethnicity, Single mother; Primiparous; Medical interventions; Planned pregnancy; Pharmacological pain relief; Unfamiliar with healthcare providers; visit medical specialist.

Client experiences with perinatal healthcare showed small variations, with a lower mean score for women who had a high-risk pregnancy and/or childbirth (3.75) than women with a low-risk pregnancy and/or childbirth (3.84). The multivariate analyses, focusing on relevant background characteristics, pregnancy and childbirth factors and follow-up care, showed that lower

Table 4
Comparison of explaining variables between women with "notably bad" experiences and women without them, using Pearson's chi-square test (n = 1388).

	Total	No "notably bad" experiences	"Notably bad" experiences	Odds ratio (95%CI)
Risk				**3.21** (1.68 to 6.15)
Low risk	473 (34.1)	462 (35.2)	11 (14.5)	
High risk	915 (65.9)	850 (64.8)	65 (85.5)	
Background characteristics				
Age				
18-29	540 (38.9)	510 (38.8)	30 (39.5)	0.78 (0.23 to 2.67)
30–39 (reference)	810 (58.4)	767 (58.5)	43 (56.6)	
≥40	38 (2.7)	35 (2.7)	3 (3.9)	0.82 (0.24 to 2.87)
Education				
Low	155 (11.2)	145 (11.1)	10 (13.2)	1.26 (0.75 to 2.09)
Middle	583 (42.0)	555 (42.3)	28 (36.8)	1.27 (0.60 to 2.69)
High (reference)	650 (46.8)	612 (46.6)	38 (50.0)	
Ethnicity				**2.59** (1.19 to 5.65)
Dutch	1323 (95.3)	1255 (95.7)	68 (89.5)	
Non-Dutch	65 (4.7)	57 (4.3)	8 (10.5)	
Unplanned current pregnancy				**1.81** (1.02 to 3.23)
No	1204 (86.7)	1144 (87.2)	60 (78.9)	
Yes	184 (13.3)	168 (12.8)	16 (21.1)	
Pregnancy circumstances				
Single mother				2.22 (0.77 to 6.45)
No	1352 (97.4)	1280 (97.6)	72 (94.7)	
Yes	36 (2.6)	32 (2.4)	4 (5.3)	
Primiparous				1.45 (0.91 to 2.31)
No	743 (53.5)	709 (54.0)	34 (44.7)	
Yes	645 (46.5)	603 (46.0)	42 (55.3)	
Childbirth characteristics				
Medical intervention during childbirth				
None (reference)	769 (55.4)	743 (56.6)	26 (34.2)	
Planned[a]	345 (24.9)	321 (24.5)	24 (31.6)	0.34 (0.19 to 0.59)
Unplanned[b]	274 (19.7)	248 (18.9)	26 (34.2)	0.72 (0.40 to 1.28)
Pain medication during birth				**2.13** (1.34 to 3.40)
No	847 (61.0)	814 (62.0)	33 (43.4)	
Yes	541 (39.0)	498 (38.0)	43 (56.6)	
Unfamiliar provider who guided childbirth				**1.89** (1.17 to 3.06)
No	696 (50.1)	669 (51.0)	27 (35.5)	
Yes	692 (49.9)	643 (49.0)	49 (64.5)	
Follow-up care				
Visit medical specialist				1.33 (0.82 to 2.16)
No	977 (70.4)	928 (70.7)	49 (64.5)	
Yes	411 (29.6)	384 (29.3)	27 (35.5)	

"Notably bad" ≤ 3.32 Likert score (scale 1–4), Significant outcomes in bold.
[a] Induced labour, planned caesarean section.
[b] Episiotomy, forceps, vacuum extraction, unplanned caesarean section.

mean scores were most prominent among non-Dutch women, single mothers, women who had planned or unplanned interventions during childbirth and had pharmacological pain relief during childbirth. The factors maternal age, parity, unplanned pregnancy, familiarity with the healthcare provider during childbirth and follow-up care after childbirth could not explain the variation in client experiences between low-risk and high-risk women.

We found that women with a high-risk pregnancy and/or childbirth had a less positive experience with perinatal healthcare than women who had a low risk. We can therefore cautiously conclude that women who gave birth in a hospital have a significant – but small – risk for negative experiences with the provided care, compared to women who gave birth at home. These findings match those of Rijnders et al., who state that giving birth in a hospital is a risk factor for a negative experience.[14] This might be related to multiple factors that tend to occur more often in high-risk childbirths, such as planned and unplanned medical interventions and pain relief during childbirth.

Besides occurring more frequently among women with high-risk pregnancies and childbirths, these factors are also related to more negative experiences. As Baas noted, women with unplanned

caesarean sections were more likely to assess their provided care as "less than good". Women with planned or unplanned interventions and pain relief are always transferred to the secondary care level, which means that their risk level increases to high-risk. Transfers during childbirth have been found to have a negative influence on childbirth experiences.[14] Similarly as research performed by Waldenström, we found that medical interventions during childbirth were risk factors for a negative experience with perinatal healthcare. Especially when the intervention was unexpected, such as an emergency caesarean birth. In the study by Waldenström, an emergency caesarean section was even the strongest predictor of a negative overall experience.[32] In another study, Waldenström reported that half of the interviewed women who underwent an emergency caesarean section feared for their own or their baby's life.[33] Also, serious posttraumatic stress reactions were found by Ryding et al., who researched the influence of emergency caesarean sections.[34]

A finding of our study is that administering pharmacological pain relief during childbirth can explain differences in experiences between high-risk and low-risk women. Even though it seems that pain relief helps with giving birth more easily, we found that clients had less positive experiences when they received pain

relief. Previous studies found that women who did not use pain relief medication were the most satisfied.[35] Hodnett reported that childbirths that take longer, are more difficult and more complicated are also likely to have more pharmacological pain relief.[36] The negative client experiences of women using pain relief medication could therefore also be influenced by the problematic childbirth, not just by the medication. Further research should be undertaken to investigate the influence of pharmacological pain relief on client experiences with perinatal healthcare.

Another observation was that we identified several variables – high-risk pregnancy and/or childbirth, a non-Dutch ethnicity, an unplanned pregnancy, an unplanned medical intervention during childbirth, pain medication during childbirth and unfamiliarity with the health care provider who guided childbirth – as risk factors for developing "notably bad" experiences. While we could not find comparable studies for these outcomes, it seems that we have uncovered a typology of women who are extremely sensitive for negative experiences. To develop a full picture of women with "notably bad" experiences, additional studies will be needed that specifically target this subpopulation.

It is important to bear in mind that our results only apply to women with live-born children. We excluded women who gave birth to a stillborn child, as they are known to have very different experiences with healthcare during pregnancy and childbirth.[37]

4.1. Strengths and limitations

Our study has three main strengths. Firstly, it was performed in a large population-based sample. Secondly, we had a relatively high response rate to our questionnaire, increasing the generalisability of our results. Thirdly, the outcome variable was measured with a validated questionnaire — the Repro questionnaire.[27]

Prior to considering the implications of our results, it is important to note the limitations of the study. Firstly, the question of possible bias due to the inclusion method must be kept in mind. Only women who were known by the well-baby clinics were asked to complete the questionnaire. However, it is known that around 1% of women who gave birth do not visit these clinics.[24] Also, women who lost their baby in the first weeks after childbirth did not receive an invitation to participate in the study. Neonatal mortality (until 28 days after childbirth) is however very low — in 2015, the figure was 0.3% for all women who gave birth in the Netherlands.[9] For that reason, we think that we have reached almost all women in our target population, referring to women who gave birth to a live-born child in an eastern region of the Netherlands.

Secondly, it is important to mention that we did not follow up on women who failed to return the questionnaires. For that reason, we do not know if and how the non-responders differ from the responders, which could have resulted in non-response bias.

The third limitation results from using data that were reported by the women themselves. It cannot be excluded that their risk level and/or other medical questions might have been answered incorrectly. However, it has been shown that women can accurately recall birth memories up to 20 years after the event.[38] This is especially true for recalling reproductive history, complications and medical procedures.[39,40]

4.2. Practical implications

The results of this research show that women with a high-risk pregnancy and/or childbirth have less positive experiences with the healthcare they received than women with a low-risk pregnancy and/or childbirth. Given the potential negative impact of negative client experiences, this study highlights the need for healthcare professionals to be aware of what women are susceptible for, having had less positive experiences. This is especially necessary for women who underwent planned and unplanned medical interventions and had pharmacological pain relief during childbirth. Involved healthcare professionals should keep in mind that these events can negatively influence their clients' experience and therefore the professionals should adjust their expectation management. Healthcare professionals should explore the types of medical interventions women expect to have, clarify misconceptions and explain the purpose of medical interventions.

In addition, our results show that women who did not know the healthcare professional who guided childbirth often had "notably bad" experiences (mean score ≤ 3.32). We therefore recommend that healthcare professionals invest more time in introducing themselves to women and their partners until they feel secure. Although background factors such as being a single mother and being non-Dutch are insusceptible, it is valuable information for the healthcare providers that are involved with these women from the beginning of their pregnancy. By informing women that the support from family and friends can be meaningful and offering additional guidance when there is no partner and providing information in the woman's own language, perinatal healthcare can cater to clients' needs.

5. Conclusions

This study showed that women in an eastern part of the Netherlands have very positive experiences with Dutch perinatal healthcare. Significant differences in client experiences were however found between women who had a low-risk pregnancy and/or childbirth and women who had a high-risk pregnancy and/or childbirth, with the latter being less positive. This difference can be partially explained by high-risk women more often having unplanned medical interventions and pain relief during childbirth. Also, single mothers and non-Dutch women were more susceptible to less positive experiences. Given the potential negative impact of negative client experiences, this study highlights the need for healthcare professionals to be aware of what women are susceptible for regarding less positive experiences. Healthcare professionals can tailor their healthcare provision to the needs of these women.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.wombi.2018.01.006.

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