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Client satisfaction and transfers across care levels of women with uncomplicated pregnancies at the onset of labour

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ABSTRACT

Objective: to compare the client satisfaction of women with uncomplicated pregnancies at the onset of labour who were transferred across care levels during childbirth and women who were not transferred across care levels in the Dutch perinatal healthcare system, and–if there are differences–to identify the variables that may explain them.

Methods: the research entailed a population-based study of women with uncomplicated pregnancies at the onset of labour living in the catchment area of a Dutch Neonatal Intensive Care Unit (NICU) in the eastern part of the Netherlands who gave birth between April 2014 and September 2014. Respondents completed a validated questionnaire (n = 842; mean age 30.7 years). Client satisfaction, measured on a 10-point scale, was assessed within 12 weeks after childbirth.

Findings: of the 842 respondents, 277 women experienced a transfer of care during childbirth, and 565 women were not transferred. The client satisfaction of women who were transferred across care levels (mean 8.04; SD 1.4) was significantly lower ($p < 0.001$) than that of women who were not transferred across care levels (mean 8.78; SD 0.9). Seven variables together explained 93.2% of the difference in client satisfaction. Explanatory pregnancy and childbirth variables were perceived health problems for the mother and medical interventions during childbirth. Explanatory clients' experiences with the care process variables were respect, prompt attention, quality of basic amenities, social consideration, and choice and continuity.

Conclusion: women were highly satisfied with the care they received, although transfers across care levels during childbirth were associated with substantially lower client satisfaction. The differences in client satisfaction between transferred and non-transferred women can largely be explained by pregnancy and childbirth characteristics, and by clients' experiences with the care process.

Introduction

The degree to which women are satisfied with the care they received during pregnancy and childbirth is an important indicator of the quality of perinatal healthcare (Rosenthal and Shannon, 1997; Donabedian, 1988; Van der Velden, 2009; Wiegers, 2009). Healthcare managers and policymakers from healthcare organizations can use client satisfaction data for decision-making about choosing alternatives regarding organizing and providing healthcare (Fitzpatrick, 1991). Client satisfaction information can also be used to predict treatment adherence and is related to improvements in health status (Martin et al., 2005). Negative client satisfaction with healthcare during childbirth can induce a depressive state of mind and post-traumatic stress disorder, negatively influencing willingness to have another baby and impacting mental health in the long term (Bernazzani and Bifulco, 2003; Waldenström et al., 2004). Dutch perinatal healthcare professionals therefore keep working towards maintaining high client satisfaction (Van der Velden, 2009).

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In the Netherlands, perinatal healthcare entails all care provided during pregnancy, childbirth, and the postpartum period, including the first month after childbirth. Pregnant women with uncomplicated pregnancies (i.e. singleton gestation without maternal or fetal risk factors) are guided by a primary healthcare provider, which in most cases is a community midwife or a general practitioner (GP). A woman with an uncomplicated pregnancy has the choice to give birth at home, at a birthing centre, or in an outpatient department, from which they are discharged within 24 hours. These births are all performed on a primary care level, guided by a community midwife or a GP. When complications occur during labour (e.g. prolonged labour or preterm birth), the risk of developing a complication increases, the request for pharmacological pain relief is made, or (continuous) monitoring is required during pregnancy or childbirth, a transfer is needed. This can be a transfer to a regional hospital (secondary care) or to a hospital with a Neonatal Intensive Care Unit (NICU; tertiary care) (Amelink-Verburg & Buitendijk, 2010; Van der Kooy, 2013). After a transfer to the secondary of tertiary care level, the woman and her (unborn) child will be attended by secondary or tertiary healthcare providers, such as clinical midwives, obstetricians, and/or pediatricians. Postpartum care is provided by maternity care organizations in collaboration with community midwives or GPs. After the first neonatal week, youth healthcare organizations provide preventive child healthcare to all newborns. In the Netherlands, youth healthcare organizations guide approximately 95% of all newborns (Verbrugge, 1990; Verloove-Vanhorick and Reijneveld, 2007).

Transfers between different care levels during labour are important to many women. As stated in research by Rowe et al. (2012, p11): "Women wondered, worried or were fearful about what was to come." At least three studies have compared the client satisfaction of women who were transferred during childbirth to that of women who were not transferred. These studies show that women who experienced a transfer are less satisfied with the perinatal healthcare than women who were not transferred (Christiaens et al., 2007; Manders et al., 2009; Rowe et al., 2012). This evidence only addressed satisfaction with the transfer journey from one place to another, such as from a home setting to a hospital. There is no evidence that findings for this group also apply to transfers between healthcare providers who work on different care levels. The existing studies addressed generic satisfaction, which was measured using different (mostly not validated) instruments (Christiaens et al., 2007; Manders et al., 2009; Rowe et al., 2012). Our goal is to measure which characteristics contribute to women's satisfaction by using a validated questionnaire.

The Dutch perinatal healthcare system offers an ideal opportunity to examine how and why transfers across care levels affect client satisfaction. In the Netherlands, approximately 50% of women are in primary care at the onset of labour (Netherlands Perinatal Registry, 2014). In 2013, 43.5% of women in the Netherlands who had an uncomplicated pregnancy at the onset of labour had to be transferred across care levels during childbirth because their risk levels increased (Netherlands Perinatal Registry, 2014). Transfer rates seem to differ among women with different background characteristics. In 2008, ethnic minority pregnant women were transferred more often than Dutch women (Amelink-Verburg et al., 2008). It has also been observed that perinatal mortality and morbidity rates are higher among women of non-Western origin and women with lower social economic status (Ravelli et al., 2008, 2010). Previous research has established that clients with a lower educational level are more satisfied with the medical care they receive (Hall and Dornan, 1990). However, the relation between transfers of care and educational level is not yet known.

The aim of this study is to compare the client satisfaction of women with uncomplicated pregnancies at the onset of labour who were transferred across care levels during childbirth to the client satisfaction of women with uncomplicated pregnancies at the onset of labour who were not transferred across care levels. If there is a difference, we aim to examine the extent to which socio-demographic characteristics, pregnancy and childbirth characteristics, and clients' experiences with the care process explain the differences in client satisfaction between transferred and non-transferred women. An extensive portrayal of the satisfaction of transferred and non-transferred women, including influencing characteristics, can aid perinatal healthcare providers to offer tailored patient-centred care and adapt their expectation management accordingly.

Methods

We performed a population-based study in which women who had their first routine visit to a child health clinic with their baby between April 2014 and September 2014 completed a questionnaire that measured their satisfaction with Dutch perinatal healthcare during childbirth.

Population and setting

The research was executed in the catchment area of the Neonatal Intensive Care Unit (NICU) Zwolle, with around 1,300,000 inhabitants, in the eastern part of the Netherlands. This area is characterized by large rural areas, medium-sized cities, and a population of women with a predominantly Dutch ethnic background (85.5%) (Statistics Netherlands, 2015). The perinatal care in the region is provided by the NICU Zwolle, five regional hospitals, 11 maternity care assistance organizations, 44 community midwife practices, three youth healthcare organizations, and two general practitioners (GP). The target population comprised all women with an uncomplicated pregnancy at the onset of labour, living in the catchment area of the NICU Zwolle, above the age of 18, and who visited child health clinics in one of the three youth healthcare organizations for the first time between April 14, 2014 and September 14, 2014. Transfers between care levels during childbirth can only take place when a woman starts labour in a primary care setting and is transferred to a secondary or tertiary care level when complications arise or the risk of complications increases. Therefore, only women with uncomplicated pregnancies who started labour in a primary care setting were included.

Data collection

Youth healthcare organizations reach 95% of all new mothers and newborns, therefore we asked them to help recruit participants. All three youth healthcare organizations in the area agreed to do so. At two organizations, assistants in the child health clinics were instructed to inform the parents about the research and hand out questionnaires to women who had their first routine appointment with their baby (usually four weeks old). Assistants act as 'hostesses,' greet the mothers at the reception desk, measure and weigh the newborns, and register the data in the client files. Having a first appointment with their baby at the child health clinic was the only inclusion criterion for women to be invited to participate in the survey. The third organization preferred to deliver the questionnaires to the home addresses of all women who were about to have their first routine appointment with their baby at the child health clinic (to prevent increasing workloads on the healthcare providers). All women were given the choice to fill in the questionnaire on paper or on the computer. Completion and submission of a questionnaire were considered to be implied consent. The answers to the questionnaire are anonymous, because there were no questions about contact details or birth dates.

A total of 3654 questionnaires were distributed. We received 1696 completed questionnaires (response rate: 46.4%). The distribution method of 40 (2.4%) completed questionnaires could not be retrieved, because the postal code was not filled in. Of the 1856 questionnaires that were sent via the post, 49.4% (n=916) were returned and of the 1798 questionnaires that were handed out, 41.2% (n=740) were

returned. No follow-up was performed on non-responders. Information on the outcome and/or independent variables was missing in 157 cases (9.3%), and these questionnaires were excluded. Of the remaining 1539 respondents (response rate 43.2%), 697 women had an increased risk level before the onset of labour, and therefore were not part of our target population. In the analysis, we only included women with a low risk level, and for this reason these 697 women were excluded from the analysis. The final sample for analysis consisted of 842 respondents who started labour in a primary care setting.

Variables

We used a client experience questionnaire (ReproQ), developed and validated by Scheerhagen and colleagues, to measure perinatal healthcare performance based on the World Health Organization (WHO) responsiveness model (Scheerhagen et al., 2013). The WHO model contains factors that measure how the client experienced handling by healthcare professionals and the environment in which the client received care.

The outcome measure of the study is the client satisfaction score with Dutch perinatal healthcare, as assessed within 12 weeks after childbirth. This was measured with a question that asked the respondent to assess her experiences with perinatal healthcare by choosing a number on a 10-point scale with the anchors verbally defined (1 = I had a very bad experience; 10 = I had a very good experience). We assumed that a good experience was interpreted as satisfactory, while a bad experience was interpreted as dissatisfactory. This measure was used as a continuous outcome variable in the analysis of predictors of overall client satisfaction.

The key variable in our analysis was 'transfer across care levels during childbirth,' which means a respondent had to be transferred from a primary care level to a secondary or tertiary care level during childbirth. Community midwives and general practitioners provide primary care, while clinical midwives and obstetricians provide secondary care. Respondents were asked if they experienced transfers across care levels during childbirth with the following two questions: *(1) Who assisted you at the onset of childbirth? Community midwife / General practitioner/ Clinical midwife / Obstetrician; (2) Who assisted you when your child was born? Community midwife / General practitioner / Clinical midwife / Obstetrician.* A respondent was defined as being transferred across care levels when she self-reported that she was transferred between healthcare providers who work on different care levels.

Socio-demographic characteristics were obtained from the responses to the questionnaire. These characteristics were 'maternal age' (in years), 'education' (1 = low (none, elementary education, preparatory middle-level applied education, vocational education level 1), 2 = medium (higher general continued education, preparatory scholarly education, vocational education level 2, 3, and 4), 3 = high (university of applied sciences, university)), and 'ethnicity' (0 = Dutch, 1 = non-Dutch). 'Ethnicity' was defined by asking the respondents to which ethnic group they belonged. 'Ethnicity' was grouped into Dutch and non-Dutch due to the small numbers of cases in the non-Dutch category. The questionnaire contained items about the respondents' pregnancy and childbirth characteristics. These variables were 'gave birth for the first time' (1 = yes, 0 = no); 'experienced a medical intervention during childbirth' (1 = yes, 0 = no); 'planned pregnancy' (1 = yes, 0 = no); received 'pharmacological pain relief' during childbirth (1 = yes, 0 = no); 'adverse outcome for baby' as defined by the presence (single or combined) of preterm birth (birth < 37 weeks of gestation), and/or low birth weight (< 2500 gm), and/or suboptimal start at birth as defined by an Apgar score ≤ 6 and/or congenital anomalies *(list defined)* (1 = yes, 0 = no); the occurrence of (large) 'problems related to the mother' after childbirth, which were self-reported in the questionnaire (1 = yes, 0 = no); and 'childbirth assistance from a healthcare provider who was unknown to the woman' (1 = yes, 0 = no).

The WHO defined eight domains which cover the different factors that can influence clients' experiences with the care process. These are 'dignity', 'autonomy', 'confidentiality', 'communication', 'prompt attention', 'social consideration', 'quality of basic amenities', and 'choice and continuity' (Valentine et al., 2009). The respondents rated their experiences in all eight domains on a 4-point Likert scale (1 = very negative; 4 = very positive). The Cronbach's alpha ranged from 0.66 to 0.92 for the eight domains (Van der Kooy et al., 2013). The answers to the questions for all eight domains identified in the ReproQ were divided into two categories. The respondents who rated their experiences with a 4 on a 4-point Likert scale were defined as 'positive.' Respondents who rated their experiences with a ≤ 3.9 on a 4-point Likert scale were defined as 'not positive' (0 = 'not positive', 1 = 'positive').

Data analysis

The central aim of the analysis is to examine the extent to which socio-demographic characteristics, pregnancy and childbirth characteristics, and clients' experiences with the care process can explain differences in client satisfaction between transferred and non-transferred women who had an uncomplicated pregnancy until the onset of labour. In order to explain such differences, these variables should show variation with respect to being transferred. The differences in transfers for the variables were explored in Table 1. Subsequently, multivariate analyses using linear regression were conducted. The differences in client satisfaction between transferred and non-transferred women, controlled for different groups of variables, are shown in Table 2. Five regression models were estimated to show how the different types of variables affect the association between transfers across care levels during childbirth and client satisfaction (Table A1). The relation between client satisfaction and transfers across care levels during childbirth is shown in Model 1. Model 1 was compared to Model 2, where socio-demographic characteristics were included. We checked whether the difference in client satisfaction between transferred and non-transferred women became smaller when adding the socio-demographic characteristics to Model 1. This comparison was also made for Model 3 and Model 4, where pregnancy and childbirth characteristics as well as clients' experiences with the care process were added. In the final model, Model 5, all variables were included simultaneously. Statistical analyses were conducted using the SPSS 21.0 software program for Windows (Nie et al., 1975).

Findings

Characteristics of the sample

The age of the participating women ranged between 19 and 44 years, with a mean of 30.7 years (SD 3.9). Women who gave birth to their first baby made up 43.6% of the population, and 29.5% had a medical intervention during childbirth. Adverse pregnancy outcomes were present for 3.9% of the babies, and 3.6% of women indicated that they experienced problems shortly after childbirth (Table 1). A comparison between our respondents and all 167,158 women who gave birth in the Netherlands in 2013 was made. The average age at first childbirth was almost identical –29.3 years for our sample, compared to 29.5 years for the entire population (Statistics Netherlands, 2014). The proportion of women who gave birth for the first time was 45.2% for the entire population, compared to 43.6% for our sample (Netherlands Perinatal Registry, 2014). Women with a low education were underrepresented in our sample: only 10% had a low education (Table 1), while in the entire population of women who gave birth in 2013, 30.7% had a low education (Statistics Netherlands, 2013).

Transfers across care levels during childbirth

Of all 842 respondents with uncomplicated pregnancies until the onset of labour, 277 (32.9%) women were transferred from primary to

Table 1
Association between transfers across care levels during childbirth and socio-demographic characteristics, pregnancy and childbirth characteristics, and care process variables in women with uncomplicated pregnancies until the onset of labour.

	Total N=842		Not transferred across care levels during childbirth N=565		Transferred across care levels during childbirth N=277		
Variable	***N***	**(%)**	***N***	**(%)**	***N***	**(%)**	***P***
Socio-demographic characteristics							
Education,							0.56
Low	84	10.0	52	9.2	32	11.6	
Middle	341	40.5	230	40.7	111	40.1	
High	417	49.5	283	50.1	134	48.4	
Dutch ethnicity	811	96.3	547	96.8	264	95.3	0.28
Pregnancy and childbirth characteristics							
Primiparous	367	43.6	162	28.7	205	74.0	< 0.001
Medical intervention during birth*	248	29.5	84	14.9	164	59.2	< 0.001
Unplanned pregnancy	115	13.7	74	13.1	41	14.8	0.49
Pharmacological pain relief	156	18.5	5	0.9	151	54.5	< 0.001
Adverse pregnancy outcome (baby)†	33	3.9	11	1.9	22	7.9	< 0.01
Perceived health problems (mother)	30	3.6	15	2.7	15	5.4	0.04
Unfamiliar with healthcare providers	220	26.1	43	7.6	177	63.9	< 0.001
Clients' experiences with care process§							
'Not positive' on respect	214	25.4	90	15.9	124	44.8	< 0.001
'Not positive' on autonomy	309	36.7	189	33.5	120	43.3	< 0.001
'Not positive' on confidentiality	191	22.7	108	19.1	83	70.0	< 0.001
'Not positive' on communication	324	38.5	188	33.3	136	49.1	< 0.001
'Not positive' on prompt attention	240	28.5	117	20.7	123	44.4	< 0.001
'Not positive' on social consideration	122	14.5	65	11.5	57	20.6	< 0.001
'Not positive' on quality of basic amenities	98	11.6	60	10.6	38	13.7	0.19
'Not positive' on choice and continuity	255	31.3	126	22.3	129	46.6	< 0.001

* Episiotomy, forceps, vacuum extraction, planned/unplanned Caesarean section.
† < 37.0 weeks gestational age, and/or low birth weight (< 2,500 grams) and/or low Apgar score (< 6) and/or congenital anomalies.
§ 'Not positive' = ≤ 3.9 Likert score (scale 1-4).

secondary/tertiary care, while 565 (67.1%) women were not transferred. Transfers across care levels were more common among women who were younger (mean age 30.1 years for transferred women, and 31 years for non-transferred women). Women who had their first baby, had medical interventions, received pharmacological pain relief, gave birth to a baby with adverse pregnancy outcomes, experienced problems after giving birth, and were unfamiliar with their healthcare professional were more likely to be transferred (Table 1). No significant differences were found between transferred women and non-transferred women with respect to socio-demographic characteristics such as education (p=0.56) and ethnicity (p=0.28). Also, no significant difference was found between transferred women and non-transferred women with respect to the pregnancy and childbirth characteristic: unplanned pregnancy (p=0.49). Positive associations were found between transfers and 'not positive' experiences for seven ReproQ domains, namely respect ($p < 0.001$), autonomy ($p < 0.001$), confidentiality ($p < 0.001$), communication ($p < 0.001$), prompt attention ($p < 0.001$), social consideration ($p < 0.001$), and choice and continuity ($p \leq 0.001$).

Examining differences for the two groups, ANOVA yielded significant group differences in the average mean scores in client satisfaction. Women who were not transferred across care levels had an average mean score of 8.78 (SD 0.94), while the average mean score for those who experienced a transfer was significantly lower at 8.04 (SD 1.41, ($p < 0.001$). The mean client satisfaction with the perinatal healthcare in our sample was 8.53 (SD 1.2, range 9) on a scale of 1 to 10.

Explaining variation in client satisfaction

Women who were transferred scored 0.74 lower on client satisfaction (on a scale of 1 to 10) than women who were not transferred, which is shown in Model 1 (Table 2). Model 2 shows that adding the socio-demographic characteristics to Model 1 does not significantly change the differences in client satisfaction between transferred and non-transferred women. Model 3 shows that adding pregnancy and childbirth characteristics to Model 1 reduces the differences in client satisfaction between transferred and non-transferred women from

Table 2
Linear regression results of the association between client satisfaction of women with uncomplicated pregnancies until the onset of labour and transfers across care levels during childbirth (see Table A1 for entire multivariate analysis).

	Estimated coefficient of transfer (95% CI)
Constant (client satisfaction 1-10)	8.8
Model 1: transfers across care levels during birth*	−0.74 (−0.91 to −0.58)
Model 2: Model 1 + socio-demographic characteristics†	−0.74 (−0.91 to −0.58)
Model 3: Model 1 + pregnancy and childbirth characteristics§	−0.30 (−0.55 to −0.05)
Model 4: Model 1 + care process variables¶	−0.40 (−0.56 to −0.24)
Model 5: Model 1 + socio-demographic characteristics + pregnancy and childbirth characteristics + care process variables**	−0.05 (−0.29 to 0.18)

* Client satisfaction; Transfers across care levels during birth.
† Model 1 + Age; Education; Ethnicity.
§ Model 1 + Parity; Medical interventions; Planned pregnancy; Pharmacological pain relief; Adverse outcome pregnancy (baby); Perceived health problems (mother); Familiarity with healthcare providers.
¶ Model 1 + 8 care process variables (Respect; Autonomy; Confidentiality; Communication; Prompt attention; Social consideration; Quality of basic amenities; Choice and continuity).
** Client satisfaction; Transfers across care levels during birth; Age; Education; Ethnicity; Parity; Medical interventions; Planned pregnancy; Pharmacological pain relief; Adverse outcome pregnancy (baby); Perceived health problems (mother); Familiarity with healthcare providers; 8 care process variables (Respect; Autonomy; Confidentiality; Communication; Prompt attention; Social consideration; Quality of basic amenities; Choice and continuity).

−0.74 to −0.30. In Model 4, clients' experiences with the care process are added to Model 1; here, the difference in client satisfaction between transferred and non-transferred women reduces from −0.74 to −0.40. In the final model, socio-demographic characteristics as well as pregnancy and childbirth characteristics and clients' experiences with the care process are added to Model 1. Taken together, these factors significantly lower the effect of being transferred across care levels on client satisfaction from −0.74 to −0.05 (95% confidence intervals do not overlap).

Overall, the groups of variables that explained the variation in client satisfaction between transferred women and non-transferred women were pregnancy and childbirth characteristics and clients' experiences with the care process. The pregnancy and childbirth characteristics that were associated with variation in client satisfaction were perceived health problems for the mother (b= −0.60, $p < 0.001$) and medical interventions during childbirth (b= −0.31, $p < 0.001$) (Table A1). The clients' experiences with the care process that are strongly associated with variation in client satisfaction were respect, prompt attention, quality of basic amenities, social consideration and choice and continuity (between 0.28 and 0.37). The variables included in the final model together explained 93.2% of the difference in client satisfaction between women who were transferred across care levels and women who were not transferred (0.74-0.05/0.74=93.2%).

Discussion

In this population-based study of 842 women who had an uncomplicated pregnancy until the onset of labour, client satisfaction with the care provided during childbirth was, on average, 8.53 (on a scale of 1 to 10). Transfers across care levels during childbirth were negatively associated with client satisfaction. Transferred women score 0.74 lower on client satisfaction (on a scale of 1 to 10) than non-transferred women. This study found seven variables that largely explained the difference in client satisfaction between women who were transferred across care levels and women who were not – medical interventions during childbirth, the mother perceiving health problems after giving birth, and 'not positive' experiences with the care process variables (respect, prompt attention, quality of basic amenities, social consideration, and choice and continuity). Together, these variables explained 93.2% of the difference in client satisfaction between women who were transferred across care levels during childbirth and women who were not transferred.

Several other studies found relatively high client satisfaction among women who experienced a transfer during childbirth from a primary care professional to a secondary care professional (Lindgren et al., 2008; Wiegers and de Borst, 2013; Scheerhagen et al., 2015). Scheerhagen et al. (2015) suggest that a positive response pattern in self-reported questionnaires about client satisfaction with perinatal healthcare might be explained by the fact that pregnancy and childbirth are not diseases and customarily have a good outcome (Scheerhagen et al., 2015). The lower client satisfaction we found in women who were transferred across care levels is in agreement with results obtained by Rowe et al. (2012), who found that British women were negatively affected by transfers from midwifery units to hospital obstetric units.

Medical interventions partly explained the difference in client satisfaction between transferred and non-transferred women. As expected, medical interventions were more prevalent in the group of women who were transferred across care levels, because most of these interventions have to be performed by healthcare professionals in secondary or tertiary care. Women who experienced medical interventions perceived their childbirth more negatively. These results are in agreement with the findings of Waldenström et al (1996, 1999), which state that medical interventions and surgical procedures such as emergency caesarean sections, vacuum extractions, forceps deliveries, and episiotomies were all associated with a negative birth experience and/or decreased satisfaction (Waldenström et al., 1996; Waldenström, 1999).

Perceived health problems for the mother also partly explained the difference in client satisfaction between transferred and non-transferred women. Mothers who perceived health problems after childbirth had lower client satisfaction. These mothers were also more likely to have been transferred across care levels during childbirth. A possible explanation for this might be that their risk status increased due to, for example, childbirth-related complications for which they needed to be treated in secondary or tertiary care (de Leeuw et al., 2001). Britton (2012) mentioned various health-related factors that could be related to lower client satisfaction, including unexpected medical problems, physical symptoms, and hospitalization of the mother (Britton, 2012).

Similar to previous studies, socio-demographic factors could not explain the differences in client satisfaction between women who were transferred across care levels and women who were not transferred across care levels (Hodnett, 2002; Waldenström et al., 2004). Five care process variables partly explained the differences in client satisfaction between transferred and non-transferred women. This result was not unforeseen, because the ReproQ was created to measure perinatal healthcare performances based on factors which measure how the client experienced handling by healthcare professionals and the environment in which the client received care (Scheerhagen et al., 2015; Valentine et al., 2009).

In the Netherlands, almost every healthcare organization uses its own questionnaire to evaluate its services. In 2016, commissioned by the Dutch government, the Dutch organization College Perinatale Zorg (CPZ) selected a single questionnaire to uniformly measure client experiences. The ReproQ was selected as the most suitable questionnaire and, according to the CPZ, should from now on be used to measure client experiences (College Perinatale Zorg (CPZ), 2016). A strength of this study is that it was, to our knowledge, the first to follow the CPZ's advice and use the ReproQ to measure client experiences with care process domains and overall client satisfaction on a large scale.

This study has limitations that should be noted. The first limitation concerns the inclusion method. Only women who had a first appointment with their baby at a child health clinic were asked to participate. Women who gave birth to a stillborn baby or lost their baby during the neonatal period were not included, because they did not register for the clinic. Second, we used respondents' self-reported data to determine whether they had been transferred across care levels. Respondents could have answered the questions incorrectly, and the possibility of misclassifications cannot be ruled out. A third limitation concerns the item that was used to measure client satisfaction. This item measured women's assessment of whether their experience was good or bad. We assumed that a good experience could be interpreted as satisfactory and a bad experience as dissatisfactory. The findings should therefore be interpreted with caution. Lastly, no follow-up was performed on non-respondents, which means that we do not know how the non-responders differed from responders, and the presence of non-response bias is a possibility.

The transfer rates of our sample and the entire population of women who gave birth in 2013 were compared. In our study, 32.9% of women who started labour in a primary care setting were transferred during childbirth, which is lower than 43.5% of the entire Dutch population of women who had uncomplicated pregnancies at the onset of labour in 2013 (Netherlands Perinatal Registry, 2014). This difference might be explained by regional differences in demographic and pregnancy characteristics. In the eastern part of the Netherlands, compared to other parts of the Netherlands, there are more multiparous women, home births, and spontaneous births (Tromp et al., 2009). These factors are all associated with fewer transfers across care levels during childbirth, which could explain why there are fewer transfers in our sample than in the entire Dutch population. Further research about the satisfaction of women who experienced a high risk at the onset of labour is therefore recommended, preferably with a follow-up study design.

Conclusion

This study showed that women who had an uncomplicated pregnancy at the onset of labour are highly satisfied with Dutch perinatal healthcare. Significant differences in client satisfaction were however found between women who were transferred across care levels and women who were not transferred across care levels, with the latter being more satisfied. This difference is largely explained by the fact that transferred women perceived more health problems after birth, experienced more medical interventions during childbirth, and had 'not positive' experiences with five care process variables. Some transfers are avoidable, but this does not apply to all transfers. Well-executed expectation management during pregnancy and at the onset of labour could help prepare pregnant women and their partners for the impending childbirth and the postnatal period. Improved guidance and future research should preferably be directed at how to improve and implement expectation management into the existing perinatal healthcare.

Disclosure of interests

None of the authors report any conflicts of interest.

Contribution of authorship

CMVS, MMBB, EFGMK and AN set up the study. CMVS was responsible for data collection, performed the analyses, and drafted the article. All authors contributed to the interpretation of the results and took part in revising the article.

Details of ethics approval

The research design was submitted to the Central Committee on Research Involving Human Subjects. On 7th of October 2013 they stated that the study did not meet the criteria of the Central Committee on Research Involving Human Subjects research involving human subjects, so it did not need the approval of a medical ethical committee. The study was reviewed and approved on 18 January 2015 by the institutional ethical committee (reference number 16011).

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Appendix A

See Table A1.

Table A1
Multivariate analyses using linear regression to explore the association between client satisfaction of women with uncomplicated pregnancies until the onset of labour and transfers across care levels during childbirth.

	Model 1[a]			Model 2[b]			Model 3[c]			Model 4[d]			Model 5[e]		
	b	95%-CI	P	b	95%-CI	p	b	95%-CI	p	b	95%-CI	p	b	95%-CI	p
Transfers across care levels during childbirth	-.74	-.91 to -.58	.00**	-.74	-.91 to -.58	.00**	-.30	-.55 to -.05	.01*	-.40	-.56 to -.24	.00**	-.05	-.29 to .18	.66
Socio-demographic characteristics															
Age (years)				-.01	-.02 to .02	.88							-.01	-.03 to .01	.48
Education															
Low				.04	-.23 to .31	.75							-.05	-.30 to .20	.69
Middle				.12	-.05 to .28	.16							.02	-.13 to .17	.82
Ethnicity				-.22	-.63 to .19	.29							-.12	-.49 to .25	.53
Pregnancy and childbirth characteristics															
Parity							.12	-.06 to .30	.17				.09	-.08 to .26	.31
Medical interventions during childbirth							-.36	-.55 to -.16	.00**				-.31	-.49 to -.14	.00**
Planned pregnancy							.13	-.09 to .35	.23				.09	-.11 to .30	.36
Pharmacological pain relief							-.28	-.54 to -.02	.04				-.23	-.47 to .01	.07
Adverse pregnancy outcome (baby)							-.22	-.61 to .18	.28				-.25	-.61 to .11	.18
Perceived health problems (mother)							-.65	-1.1 to -.24	.00**				-.60	-.97 to -.23	.00**
Familiarity with healthcare providers							-.29	-.51 to -.08	.00**				-.20	-.40 to .01	.05
Clients' experiences with the care process* **															
Respect ('positive')										.38	.18 to .58	.00**	.37	.17 to .56	.00**
Autonomy ('positive')										.02	-.13 to .17	.81	.02	-.14 to .17	.85
Confidentiality ('positive')										.13	-.05 to .32	.15	.10	-.08 to .28	.28
Communication ('positive')										.15	-.01 to .32	.07	.14	-.02 to .31	.09
Prompt attention ('positive')										.35	.17 to .53	.00**	.37	.19 to .54	.00**
Social consideration ('positive')										.28	.06 to .50	.01*	.29	.07 to .51	.01*
Quality of basic amenities ('positive')										.34	.12 to .57	.00**	.32	.09 to .55	.00**

(continued on next page)

Table A1 *(continued)*

	Model 1[a]			Model 2[b]			Model 3[c]			Model 4[d]			Model 5[e]		
	b	95%-CI	P	b	95%-CI	p	b	95%-CI	p	b	95%-CI	p	b	95%-CI	p
Choice and continuity ('positive')										.30	.13 to .47	.00**	.28	.11 to .45	.00**
Adj. R^2				.09			.12			.25			.27		
Sig.				.00			.00			.00			.00		

* $p < .05$ (two-tailed),

[a] Client satisfaction; Transfers across care levels during birth.

[b] Model 1 + Age; Education; Ethnicity.

[c] Model 1 + Parity; Medical interventions; Planned pregnancy; Pharmacological pain relief; Adverse outcome pregnancy (baby), Perceived health problems (mother); Familiarity with healthcare providers.

[d] Model 1 + 8 care process variables (Respect; Autonomy; Confidentiality; Communication; Prompt attention; Social consideration; Quality of basic amenities; Choice and continuity).

[e] Client satisfaction; Transfers across care levels during birth; Age; Education; Ethnicity; Parity; Medical interventions; Planned pregnancy; Pharmacological pain relief; Adverse outcome pregnancy (baby); Perceived health problems (mother); Familiarity with healthcare providers; 8 care process variables (Respect; Autonomy; Confidentiality; Communication; Prompt attention; Social consideration; Quality of basic amenities; Choice and continuity).

** $p < .01$ (two-tailed),

*** 'positive' = 4.0 Likert score (scale 1-4).

Appendix B. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.midw.2017.02.007.

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