



A known midwife can make a difference for women with fear of childbirth- birth outcome and women's experiences of intrapartum care

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ABSTRACT

Background: There is evidence that continuity of midwifery care is beneficial to women. Women with fear of childbirth in Sweden are offered counselling, but receiving care from a known midwife during labour is unusual, despite its effects in reducing interventions and increasing birth satisfaction. The aim of this study was to describe and compare birth outcome and experience of intrapartum care among women with fear of childbirth who received intrapartum care from a known midwife, versus those who did not.

Methods: An experimental study of 70 women referred to counselling due to fear of birth during pregnancy wherein the counselling midwife, when possible, also assisted during labour and birth.

Results: Having a known midwife during labour and birth had a positive impact on fearful women's birth experience and their perception of pain, but there was no difference in onset of labour or mode of birth. Women who received care from a known midwife experienced better care with regards to information, participation in decision making and perception of control.

Conclusion: This study indicates that having access to a known midwife might have an impact on women's birth experience. This study was limited by its small sample size and further research would need to randomise fearful women to counselling or continuity of care to determine the contribution of each to reducing fear.

Background

Fear of childbirth is associated with many aspects of women's lives, such as their physical and mental health, intervals between pregnancies, the birth outcome, and quality of life [1].

Women with fear of childbirth more often deliver by caesarean section, compared to women without fear [2–5]. However, findings from previous studies in regard to fear and the prevalence of elective versus emergency caesarean are somewhat inconclusive. In the BIDENS study comprising six countries in Europe [2], mode of birth was reported on 6724 women. The prevalence of intense and extreme fear differed between the countries. An increased proportion of elective caesarean sections was found in women with elevated levels of fear, but the prevalence of emergency caesarean sections was not related to fear. On the contrary, a Swedish study of 932 women [3] found an increased proportion of both elective (29.5%) and emergency (12.2%) caesarean sections in women with severe fear of childbirth. The proportion for the reference group without fear was 3.8% elective and 10.7% emergency

caesarean sections [3]. Results from a population-based regional Swedish survey reported the overall caesarean section rate at 15.6%, which more than doubled among women with fear of childbirth (37.6%) [6,10].

Several treatments have been suggested to help women with fear of childbirth. A recent systematic review of results from 15 research projects on treatment for fear of birth showed that group psycho-education or therapeutic conversions could strengthen women's self-efficacy and decrease the levels of caesarean sections due to fear of birth [7]. A recent trial of women randomised to midwife-led counselling or internet based cognitive therapy (iCBT) showed that 31% of women who received counselling and 17.5% of those who had iCBT had a caesarean section [8]. In the Swedish health care system women receive assistance in managing those fears, and are offered counselling with midwives. These midwives usually have some education in counselling such as motivational interviews, cognitive behavioural therapy or mindfulness. These services are available in all hospitals in Sweden and women are referred to counselling by their antenatal midwife. Usually

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women have 2–3 counselling visits, but the actual number of visits is based on women's needs [9]. Previous studies have reported that women with fear of birth in general are very satisfied with the counselling services [10–12]. In some hospitals women who request a caesarean section due to fear of birth need to go through counselling prior to meeting the obstetrician who makes the final decision. Women cannot choose to have an operative birth themselves when no medical indication is present [13]. The aim of the counselling is to strengthen women's self-confidence in giving birth and to reduce their fear and the number of caesarean sections on maternal request. Furthermore, the counselling ideally makes the birth experience as positive as possible [14]. Few studies have reported success regarding this matter, as only around only 50% of fearful women report a positive birth experience [4–6,15,16]. The vicious cycle between a negative birth experience and childbirth fear is well known and often results in a request for caesarean section in a subsequent pregnancy [4,17]. Some components of intrapartum care provided are associated with a positive birth experience, such as being in control, receiving sufficient information and support, and involvement in decision making [18,19], but women with fear of childbirth often report deficiencies in these areas, especially with regard to perception of control during labour [5,20,21]. In addition, fearful women reported significantly more deficiencies in intrapartum care compared to women without fear, especially regarding support from midwives (31%) and perception of control (40%) [22].

One solution to achieve a reduction in caesarean sections and an increase the levels of birth satisfaction is to introduce midwifery continuity models of care [23,24]. A recent Cochrane review of 15 randomised controlled trials, mainly from Australia, UK, Canada, and Ireland with more than 17,000 women randomized to continuity models or standard care, reported excellent results both in obstetric outcome and women's satisfaction with the continuity models and concluded that such models should be recommended to all women [25].

In Swedish maternity services such models are rare. In general, midwives in Sweden work either in antenatal or in intrapartum care, as antenatal care is community-based and intrapartum care is hospital-based. Pregnant women usually follow the standard visiting schedule for antenatal care, with 6–9 visits to the midwife. There is no scheduled visit to a physician or General Practitioner (GP) in the case of a normal pregnancy [9]. It is not common, however, that the counselling midwife assist these women during labour.

Few studies have focused on the importance of having a known midwife (e.g. continuity thorough pregnancy and birth) for women with fear of birth. One attempt was a pilot study of 14 women with phobic fear who were assigned a named midwife whom they met in the last trimester in order to become familiar with the labour ward and form a relationship. The 14 women also received continuous support from the midwife during labour. These women were compared to 28 women without fear who gave birth the same day. No difference in obstetric outcome or satisfaction was found between the two groups, mainly due to lack of statistical power [26].

Given the overwhelming evidence showing the positive effects of continuity of midwifery care for general populations of women, it seems very likely that receiving care from a known midwife could have effects in reducing interventions and increasing satisfaction in women with fear of childbirth. The aim of this study was to describe and compare birth outcome and experience of intrapartum care among women with fear of birth who received intrapartum care from a known midwife versus those who did not.

Method

Study design

This is an experimental study on birth outcome in women with fear of childbirth.

Sample

Women with fear of birth were recruited in mid pregnancy (20–27 week of gestation). They were offered counselling for their fear of birth, and with subsequently follow up two months after birth. In addition to the counselling, the women were also offered, when possible, to have a known midwife at birth (i.e. the counselling midwife also assisted the women when they went into labour).

Setting

The study took place in three Swedish hospitals, two in the northern part and one south of the capital area. The annual birth rates for the hospitals were 1525, 1329 and 1564, respectively. All hospitals provided midwifery led counselling. Women were referred to the counselling team by the antenatal midwife if they self-reported fear of birth. Around 75–100 referrals were sent to the counselling teams in each hospital each year.

The midwives providing counselling were experienced in intrapartum care and the majority of them had additional education, such as motivational interviewing (MI) or cognitive behaviour therapy. Due to their long working experience (10–30 years), these midwives were often in charge of the shift as team-coordinators, which means that they were not always available to take care of birthing women and to provide continuity of care; instead they had to manage staff and administration in the labour ward. In two of the hospitals there were five midwives providing counselling and in the third hospital three midwives worked with counselling. The midwives spent an average of one day per week working with counselling.

Procedure

Women who were referred to counselling and had an expected due date between 1 September 2016 and 31 May 2017 were eligible to participate. They were informed that if one of the counselling midwives was available in the hospital labour ward when they went into labour, they would do their utmost to provide the intrapartum care. This implied that the midwives would change their working schedule and the placement, as the majority of them worked in the labour ward and also in the postpartum ward.

When women consented to participate in the study, their contact details were sent to the research team who thereafter sent the first questionnaire to each participant's home address. They received the second questionnaire one month before their due date and the third two months after birth. For this report, we used data from the two months' follow-up with background data from the first questionnaire.

Variables

From the first questionnaire we collected information about women's socio-demographics (maternal age, civil status, level of education, country of birth), medical background (previous mental illness) and parity. The level of fear was assessed using the Fear Of Birth Scale (FOBS), with the cut-off point of 60 [27,28]. Two months after birth questions about onset of labour, mode of birth, perceived length of labour (hours), self-reported birth complication, pain intensity (0–7), pain experience (0–7) and pain relief methods used were collected. The birth experience was assessed on a 5-point Likert scale ranging from 1 = Very positive to 5 = Very negative. In the analysis, the scale was dichotomized into 'Positive' (1–2) and 'Less positive' (3–5). The definition of having a known midwife was based on the women's self-assessment of a known midwife, regardless of when, how long or at what stage during labour and birth the known midwife was present.

Women's experiences of intrapartum care were investigated using a previously developed instrument 'Quality from the Patient's Perspective' (QPP), [21] inspired the development of questions in

certain areas of intrapartum care. The participants responded to each question in two ways. The Perceived Reality (PR) refers to how the actual care was delivered and the Subjective Importance (SI) tells how important that specific aspect of care was to the respondent. All items were assessed on Likert scales ranging from 1 to 4 (“Totally disagree” to “Totally agree” and “Unimportant” to “Very important”). The QPP was originally developed for hospital use and covered many aspects of care [29]. For this study, we used QPP-intrapartum which is a modified version more relevant to intrapartum care.

In order to investigate if women received care that was appropriate to their needs an index was thereafter created by combining the answers of the SI and PR. The index was based on a description provided by the creators of the QPP scale [29]. There was also an option to tick ‘not relevant’ and this option was excluded in the index. The idea behind the index is that different combinations of answers to questions on PR and SI should lead to different actions being taken. ‘Balanced care’ occurs when the care given reflects the needs of the respondent, e.g. high or low scores on both SI and PR. ‘Deficient care’ contains aspects that are rated important by the respondent, but the actual care is perceived as less than good. Quality improvement measures in this area should be given high priority. ‘Excessive’ care contains aspects that are not deemed important by the respondent, but the actual delivery of care is perceived as far beyond their expectations (this is also described as ‘too much care’). The creators of the QPP instrument recommend that if at least 20% report deficient care for a specific issue, actions for improvement should be taken. On the other hand, if the subjects are given more care than needed, described as ‘excessive’ or ‘too much’ care (> 20% report excess), the investigators should make note of these areas as places where the hospital can draw from to improve care in other areas.

Statistical analysis

Descriptive statistics were used to present background data. Odds ratios with a 95% confidence interval were calculated between women who had or did not have a known midwife at birth, for the different explanatory variables. The effect size was calculated using Cohen’s *d* for continuous variables and the Phi coefficient for categorical variables [30]. The study was approved by the regional ethics committee, Dnr 2016/0588.

Result

Of the original sample of 77 women who consented to participate, 70 returned the follow up questionnaire. Of those, 24 (34%) had had a known midwife during birth.

Table 1 presents background data. Most women were aged 32 years or more, were living with a partner and were born in Sweden. They had a university level of education and the majority had previous children. Every third woman had previous depressive symptoms, 35.7% a previous history of anxiety and 47% reported previous psychiatric history (depression, anxiety, eating disorders, bipolarity or other). A total of 22 women (34%) preferred to have a caesarean section. There were no differences with regards to socio-demographic or obstetric background or level of fear in the group who had a known midwife (mean FOBS 71.25; 20.41) versus the group who did not (70.83; 21.52). The mean number of visits was 2.4 (3.2 in those who had a known midwife during labour and birth and 2.06 in those not having a known midwife, $p = 0.003$).

Table 2 presents birth outcomes and compares women with and without a known midwife during labour. Most women (52%) had a spontaneous onset of labour, whereas 31% had an induced labour. The most frequently reported reasons for labour induction were fear of birth, expecting a big baby, and post-term pregnancy. In all, 55.7% had a normal vaginal birth and 7% an instrumental vaginal birth. The caesarean section rate was 37% ($n = 26$), and, of those, 38% ($n = 10$)

Table 1
Background characteristics of participants.

	n = 70 n (%)
Age groups	
< 32	29 (41.4)
32 or more	41 (58.6)
Country of birth	
Sweden	63 (90.0)
Other country	7 (10.0)
Civil status	
Living with partner	69 (98.6)
Not living with partner	1 (1.4)
Level of education	
Compulsory school/high school	27 (38.6)
University education	43 (61.4)
Parity	
Primiparous women	18 (25.7)
Multiparous women	52 (74.3)
Previous depressive symptoms	18 (25.7)
Previous anxiety	34 (48.6)
Previous psychiatric history	33 (47.1)
FOBS mean (SD) in mid pregnancy	70.97 (21.52)
FOBS < 60	17 (24.3)
FOBS > 60	53 (75.7)
Caesarean section preference	22 (31.4)

was performed elective and 62% ($n = 16$) was emergent. The most commonly reported reason for elective caesarean section was fear of birth. For the emergency caesarean section, it was prolonged labour. Of the women in mid pregnancy who reported a caesarean section preference ($n = 22$), 14 (64%) actually had one. The corresponding figures for women who preferred a vaginal birth was 37%. There was no difference in onset of labour or mode of birth between the groups.

Nearly 34% of the women reported a birth complication and of those 21/23 women made a comment. The major complications reported by the women were perineal ruptures (9), caesarean section (4) and bleeding (4). There was no difference between the groups regarding augmentation during labour, and the percentage of women needing augmentation was 40%.

While there were no differences between women who had a known midwife or not regarding pain intensity or pain relief methods used, there was a statistically significant difference in the experience of pain, where women who had a known midwife reported a more positive pain experience (OR 1.5, 95% CI 1.09–2.13, Cohen’s $d = 0.72$). In addition, women who had a known midwife during birth were nearly five times more likely to have a positive birth experience (OR 4.8; 95% CI 1.35–15.5, Phi coefficient Phi coefficient 0.306; Table 2).

Table 3 presents the rank order of the 10 items included in the QPP instrument. In all, between 8 and 47% of the items were classified as deficient. Six items had more than 20% deficient care (where action should be taken) and only one item produced excessive care (to be noted). When comparing the items between women who had a known midwife or not, the majority of items showed no statistically significant differences. However, women who had a known midwife experienced less deficient care in the following areas: Involvement in decision-making (OR 0.19; 95% CI 0.39–0.98, $p = 0.048$), Perception of control (OR 0.28; 95% CI 0.80–0.92, $p = 0.036$), and Information during labour and birth (OR 0.10; 95% CI 0.01–0.80, $p = 0.031$). The effect size was low to moderate (-0.256, 0.253, and -0.308) for the respective variables.

Discussion

The main findings of this study were that having a known midwife during labour and birth has a positive impact on fearful women’s birth

Table 2
Birth outcome in women having a known midwife or not.[#]

Data collected two months after birth			
	Had a known midwife n = 24 n (%)	No known midwife n = 46 n (%)	Odds ratio (95% CI)
Onset of labour			
Spontaneous	11 (45.8)	26 (56.5)	1.0 Ref.
Induction	8 (33.3)	14 (30.4)	1.35 (0.44–4.13)
Mode of birth			
Normal vaginal	16 (66.7)	23 (50.0)	1.0 Ref.
Instrumental vaginal	0	5 (10.9)	not calc
Elective caesarean section	4 (16.7)	6 (13.0)	0.95 (0.23–3.95)
Emergency caesarean section	4 (16.7)	12 (26.1)	0.47 (0.13–1.75)
Perceived length of labour (hours)			
Mean (SD)	10.18 (16.53)	9.10 (8.72)	1.00 (0.96–1.05)
Birth complication			
Yes	5 (21.7)	18 (40.0)	
No	18 (78.3)	27 (60.0)	0.41 (0.13–1.32)
Pain intensity (1 = no pain, 7 = worst pain imaginable)			
Mean (SD)	4.73 (1.81)	5.23 (1.90)	0.87 (0.67–1.14)
Pain experience (1 = Very negative, 7 = Very positive)			
Mean (SD)	4.77 (1.63)	3.54 (1.78)	1.52 (1.09–2.13)
Pain relief methods used[*]			
Entonox	19 (79.2)	35 (76.1)	1.19 (0.36–3.94)
Morphine	2 (8.3)	4 (8.7)	0.45 (0.16–5.62)
Bath/shower	7 (29.2)	11 (23.9)	1.31 (0.43–3.97)
Massage	5 (20.8)	10 (21.7)	0.94 (0.28–3.17)
Breathing/relaxation techniques	12 (50.0)	18 (39.1)	1.55 (0.57–4.20)
Epidural	13 (54.2)	27 (58.7)	0.83 (0.30–2.24)
Augmentation			
Yes	9 (45.0)	16 (38.1)	1.12 (0.40–3.1)
No	11 (55.0)	26 (61.9)	1.0 Ref.
Birth experience			
Positive/very positive	20 (83.3)	24 (52.2)	4.2 (1.19–14.99)
Negative/Very negative/mixed feelings	4 (16.7)	22 (47.5)	1.0 Ref.

* Ref. Women not using the method.

[#] Numbers may not sum up to 100% due to internal missing values.

experience and their experience of labour pain. Having a known midwife made no difference to the timing of the onset of labour or to the mode of birth. The reports from women regarding the content of their intrapartum care showed that just over half of the care received was perceived as deficient, however women who received care from a known midwife experienced better care with regards to information, participation in decision making and perception of control.

Background factors

There were no differences in socio-demographic or obstetric background or in the levels of fear between women who had the counseling midwife attending the birth, or not. However, women who had a known midwife (i.e. the counselling midwife attending the birth) had received more counseling visits. This finding could be understood from several views. It might be possible that women who received a higher number of counseling visits had stronger needs for a known midwife and needed more counseling, which in turn could have created a mutual relationship where the midwife arranged to be present to a higher degree for certain women. We do not have any information from the midwives that could confirm this. All counseling midwives are experienced which also means that they sometimes were in charge of the day-by-day management of the labour ward. This fact limits the availability for continuity, as these experienced midwives are difficult to replace.

A positive birth experience

Having access to a known midwife resulted in fearful women being nearly five times more likely to have a positive birth experience than those who did not have a known midwife (83.3% compared with 52.2%). The finding that only half of the women who received counselling but no continuity of care experienced a positive birth is consistent with multiple other studies. A recent RCT where fearful women received counselling or internet based cognitive therapy showed that only 50% of women had a positive birth experience regardless of their treatment [9]. In addition, a national Swedish survey performed in the year 2000 [5] reported that 51% of Swedish speaking women with childbirth fear who had undergone counselling had a positive birth experience. Likewise, in a regional study of 763 women who were approached 1 year after birth and of which 70 women had received counselling for fear of birth, only half (49.2%) of the 70 fearful women presented with a positive birth experience [6]. A negative birth experience is a well-known contributor to fear of birth in a future

Table 3
Rank order of women's perception of intrapartum care based on an index of Perceived reality and Subjective importance[#]

	Deficient-Balanced and Excessive care [*]			Known Midwife %#	Not known Midwife %#	Odds ratio (95% CI) For reporting deficient care when having a known midwife
	All women in the study					
The midwife was present as much as I wanted	8.2%	77.6%	14.3%	5/75/20%	10/80/10	0.56 (0.04–4.73)
I got the best possible support from the midwife	12.9%	71.0%	16.1%	9/67/24%	15/73/12%	0.61 (0.11–3.34)
I received the pain relief method preferred	16.9%	76.3%	6.8%	14/81/5%	18/74/8%	0.73 (0.16–3.21)
I received the best medical care	19.7%	77.0%	3.3%	21/79/0%	19/76/5%	1.13 (0.29–4.35)
I got sufficient information during labour and birth	23.4%	70.3%	6.3%	5/90/5%	33/60/7%	OR 0.10 (0.01–0.80)
I was involved in decision making during labour and birth	23.8%	65.1%	11.1%	9/82/9%	32/56/12%	OR 0.19 (0.39–0.98)
The midwife made my partner involved during labour and birth	25.0%	64.3%	10.7%	26/58/16%	24/68/8%	1.11 (0.31–3.94)
I got the best possible support when I breastfed the first time after birth	26.8%	48.2%	25.0%	33/39/28%	24/52/24%	1.61 (0.47–5.52)
I had the opportunity to talk through the birth with the assisting midwife	42.2%	48.4%	9.4%	50/36/14%	38/55/7%	1.62 (0.57–4.60)
I perceived that I had control over my body during labour and birth	47.4%	49.1%	3.5%	30/70/0%	57/38/5%	OR 0.28 (0.08–0.92)

[#] Numbers may not sum up to 100% due to internal missing values.[#] Percentage refers to Deficient/Balanced/Excessive care.

* Deficient, balanced and excessive care is based on an index combining perceived reality and subjective importance (QPP, Wilde-Larsson et al.)

pregnancy [4], and it seems that the evidence is growing to indicate that counselling alone may improve this for only half of the women who enter the service.

It is important to bear in mind that that women carry the birth experience for a long time [31]. As the birth experience has been found to be associated with many aspects of women's lives, their mental health, and number of children [1] and is often perceived negatively among women with fear of childbirth [4,5,15,16], it is clinically relevant and important to include continuity as best practices in the counselling services. A positive birth experience is also one of the goals of counselling for fear, as suggested by the Swedish Association of Obstetricians and Gynaecologists [14].

However, one must also bear in mind that one of the groups in the current study had their hopes and expectations of continuity met with regard to their counseling midwife and the others might have been disappointed. The link between expectations and fulfilment is somewhat inconclusive. Some researchers argue that women's expectations of care are closely related to what they believe is achievable rather than what might be the best option [32], while others present fulfilment of expectations as being one of the most consistent predictors of satisfaction [33].

Another important aspect is the more positive experience of labour pain found in women who had a known midwife. Pain is a driver for fear, but there was no difference between the groups when it came to the use of epidural anaesthesia. This contradicts results from other studies [25], which showed that women who received continuity models of midwifery care were less likely to need such pain relief.

This current study comprises a rather small sample; nevertheless, the finding that the fearful women who received counselling *and* a known midwife had significantly better odds of experiencing a positive birth raises the question, "Is continuity of care the missing ingredient in treating women with fear of birth in Sweden?" The Swedish maternity system has funnelled considerable resources into counselling for fearful women, but, to date, the opportunity for any woman let alone fearful ones to access best practices such as the continuity of midwifery care model, is rare [25,34].

Birth outcome

Contrary to previous studies reporting the benefits of having a known midwife when it comes to reducing caesarean section rates and instrumental births [23,24], there was no difference between the two groups in the present study. The studies included in the Cochrane review [25] about continuity models of care present data from countries with much higher caesarean section rates than Sweden. Furthermore, it is not possible to know anything about the levels of childbirth fear in the women included in these studies. Nevertheless, women in the present study had quite a high percentage of caesarean section overall (37%), which is more than double the national figure of 18% [35]. It is well known that women with fear of childbirth often request and receive *elective* caesarean section [2,3,6,8], and some previous studies have shown that fear of birth is associated with an increased risk for *emergency* caesarean section, [2,3,36], which was also found in the present study. While the reason for this is not entirely clear, it is known that in some Swedish hospitals, women could make a contract that allows them to have a say in the delivery method and thus convert an attempted vaginal birth to a caesarean section if they feel that they cannot cope with labour or if the labour is prolonged [9]. The main reason for emergency caesarean section in the present study was, however, prolonged labour. While this was a small study, our finding of prolonged labour was in line with a large Norwegian study [37] that explored the association between fear of childbirth and labour duration in more than 2000 pregnant women with intended vaginal birth. This large study reported that labour duration was significantly longer in women with fear of childbirth compared with women with no such fear. One important issue regarding prolonged labour that midwives need to

be aware of is the over-representation of women with a previous history of rape among women referred for fear of childbirth. The partograph showed prolonged labour and an increased risk of caesarean section in these women [38].

Intrapartum care

The results of the present study revealed that the women overall perceived the majority of the aspects of care as deficient. The areas that needed major improvements (> 20% deficient) were mostly about involvement in decision making and in the care itself, information and communication, and feelings of being in control. Similar findings have been reported in a Swedish-Australian cohort study where fearful women also reported deficient care in these areas [22].

For some of these aspects, having a known midwife made a difference. Women who had a known midwife felt more in control, were better informed, and felt more involved in decision-making. This finding is supported by the Cochrane review [25]. These aspects of intrapartum care are basic midwifery skills. However, fragmented care (where a woman is cared for by different people at various stages of her pregnancy, birth, and postnatal period) is well known to reduce satisfaction with care for all women regardless of fear [25,39]. For fearful women in particular, however, continuity could be a means to build meaningful relationships where midwives can listen and act upon women's wishes and offer highly individualised care [40].

Methodological considerations

This study is compromised by the observational design, the fairly small number of participants, and the 'ad hoc' design of the counselling as this naturalistic experiment was incorporated in an already existing provision of care. Nevertheless, the longitudinal design with 90.9% of the original sample remaining in the study makes the result trustworthy and gives opportunities for further development of models of care for women with fear of childbirth. The seven women lost to follow up were comparable to those who completed all questionnaires, in terms of sociodemographic background. However, these 7 women had higher levels of fear in mid pregnancy and were more anxious.

Approximately half of the women referred to counselling chose to participate, and one could speculate that those not interested in the study preferred a caesarean section and therefore chose not to be involved. If so, the results might only be important for women with fear of birth who view a known midwife as important. As we do not have access to the medical records, there is no possibility to control for that.

The design of the study limits the conclusions drawn. Experimental studies, such as the present study, depend on the actual situation on the labour ward and the working shifts and availability of the midwives. There was no opportunity to perform a randomised controlled trial in these clinical settings due to a lack of staff and midwives not wanting to be on call.

The small sample size limits the generalisability as does the restricted time period from September to May. Restricting the time frame to exclude the summer holidays is a system issue, as in some places the counselling clinics are minimised or closed down during the summer period.

Also notable is the use of a single question to assess the birth experience, as the birth experience could have many dimensions. There are other instruments available that we could have used. The choice of the single question was based on the fact that this question has been used in several studies [4–6] focusing on women with fear of childbirth and was therefore a means for comparison.

Another strength is, regardless of a few statistically significant differences, that the effect sizes of the significant variables were moderate and clinically significant when it comes to the experience of pain, the overall birth experience, and amount of information. For the birth experience, the study had 80% power to detect a clinically relevant

difference. To summarise, our pragmatic study design supports the growing body of methods aiming to help women with fear of birth and could have the potential to change the care context in Sweden to include more evidence based practices, such as offering continuity models of care.

Conclusion

This study indicates that having access to a known midwife might have an impact on women's birth experiences. This study was limited by its small sample size and further research would need to randomise fearful women into counselling or continuity of care to determine what the contribution of each is to reducing fear.

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References

- Dencker A, Nilsson C, Begely C, Jangsten E, Mollberg M, Patel H, et al. Causes and outcomes in studies of fear of childbirth: a systematic review. *Women Birth* 2018. [in press].
- Ryding E-L, Lukasse M, Parys A-SV, Wangel AM, Karro H, Kristjansdottir H, et al. Fear of Childbirth and risk of cesarean delivery: a cohort study in six European countries. *Birth* 2015;42:48–55.
- Sydsjö G, Sydsjö A, Gunnervik C, Bladh M, Josefsson A. Obstetric outcome for women who received individualized treatment for fear of childbirth during pregnancy. *Acta Obstet Gynecol Scand* 2012;91:44–9.
- Nilsson C, Lundgren I, Karlström A, Hildingsson I. Self reported fear of childbirth and its association with birth experience and mode of delivery: a longitudinal population based study. *Women Birth* 2012;25:114–21.
- Waldenström U, Hildingsson I, Ryding E-L. Antenatal fear of childbirth and its association with subsequent caesarean section and experience of childbirth. *BJOG* 2006;113:638–46.
- Hildingsson I, Nilsson C, Karlström A, Lundgren I. A longitudinal survey of childbirth-related fear and associated factors. *JOGNN* 2011;40:532–43.
- Striebich S, Mattern E, Ayerle GM. Support for pregnant women identified with fear of childbirth (FOC)/tokophobia – a systematic review of approaches and interventions. *Midwifery* 2018;61:97–115.
- Larsson B, Karlström A, Rubertsson C, Ternström E, Ekdahl J, Segeblad B, et al. Birth preference in women undergoing treatment for childbirth fear: a randomised controlled trial. *Women Birth* 2017;30:460–7.
- Larsson B, Karlström A, Rubertsson C, Hildingsson I. Counseling for childbirth fear – a national survey. *Sex Reprod Healthc* 2016;8:82–821.
- Larsson B, Karlström A, Rubertsson C, Hildingsson I. The effects of counseling on fear of childbirth. *Acta Obstet Gynecol Scand* 2015;94:629–36.
- Larsson B, Hildingsson I, Rubertsson C, Ternström E, Karlström A. Women's experience of midwife-led counselling and its influence on childbirth fear – a qualitative study. *Women Birth* 2019;32:e88–94.
- Ryding E-L, Persson A, Onell C, Kvist L. An evaluation of midwives' counseling of pregnant women in fear of childbirth. *Acta Obstet Gynecol Scand* 2003;82:10–7.
- Health and Medical Service Act 1982:763. Sweden: Ministry of Health and Social Affairs; 1982.
- SFOG. Svensk Förening för Obstetrik och Gynekologi (Swedish Association of Obstetricians and Gynaecologists). *Childbirth Fear, ARG rapport nr 7*, Linköping: Linköping University; 2017.
- Elvander C, Cnattingius S, Kjerrulf KH. Birth experience in women with low, intermediate or high levels of fear. Findings from the First Baby Study. *Birth* 2013;40:289–96.
- Henriksen L, Grimsrud E, Schei B, Lukasse M. Factors related to a negative birth experience – a mixed method study. *Midwifery* 2017;51:33–9.
- Bryanton J, Gagnon A, Johnston C, Hatem M. Predictors of women's perceptions of the childbirth experience. *JOGNN* 2008;37:24–34.
- Hildingsson I, Johansson M, Karlström A, Fenwick J. Factors associated with a positive birth experience. An exploration of Swedish women's experiences. *Int J Childbirth* 2013;3:153–64.
- Haines H, Rubertsson C, Pallant J, Hildingsson I. The influence of women's fear, attitudes and beliefs of childbirth on mode and experience of birth. *BMC Pregnancy Childbirth* 2012;12:55.
- Goodman P, Mackey MC, Tavakoli AS. Issues and innovations in nursing care: factors related to childbirth satisfaction. *J Adv Nurs* 2004;46(46):212–9.
- Wilde-Larsson B, Sandin-Bojör AK, Starrin B, Larsson G. Birthgiving women's feelings and perceptions of quality of intrapartum care: a nationwide Swedish cross-sectional study. *J Clin Nurs* 2011;20(11):1168–77.
- Haines HM, Hildingsson I, Pallant JF, Rubertsson C. The role of women's attitudinal profiles in satisfaction with the quality of their antenatal and intrapartum care. *JOGNN* 2013;42:428–41.
- McLachlan HL, Forster DA, Davey MA, Farrell T, Gold L, Biro MA, et al. Effects of continuity of care by a primary midwife (caseload midwifery) on caesarean section rates in women of low obstetric risk: the COSMOS randomised controlled trial. *BJOG* 2012;119:1483–92.
- Tracy S, Hartz D, Tracy M, Allen J, Forti A, Hall B, et al. Caseload midwifery care versus standard maternity care women of any risk: M@NGO, a randomized controlled trial. *Lancet* 2014;382:1723–32.
- Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. *Cochrane Database Syst Rev* 2016, Issue 4. Art. No.: CD004667. DOI: 10.1002/14651858.CD004667.pub5.
- Sydsjö G, Blomberg M, Palmqvist S, Angerbjörn L, Bladh M, Josefsson A. Effects of continuous midwifery labour support for women with severe fear of childbirth. *BMC Pregnancy Childbirth* 2015;15:115.
- Haines H, Pallant J, Karlström A, Hildingsson I. Cross cultural comparison of levels of child-birth related fear in an Australian and Swedish sample. *Midwifery* 2011;27:560–7.
- Hildingsson I, Haines H, Karlström A, Nystedt A. Presence and Process of Fear of birth during pregnancy-findings from a longitudinal cohort study. *Women Birth* 2017;30:242–7.
- Wilde B, Larsson G, Larsson M, Starrin B. Quality from the Patient's Perspective. [KUPP-boken—Kvalitet ur Patientens Perspektiv]. Vårdförbundet, Stockholm; 2001.
- Pallant J. *SPSS Survival manual*. Brisbane: Open University Press; 2016.
- Simkin P. Just another day in a woman's life? Women's long-term perception of their first birth experience. Part 1. *Birth* 1991;18(4):203–10.
- Van Teijlingen ER, Hundley V, Rennie AM, Graham W, Fitzmaurice A. Maternity satisfaction studies and their limitations: "What is, must still be best". *Birth* 2003;30:75–82.
- Christiaens W, Bracke P. Assessment of social psychological determinants of satisfaction with childbirth in a cross-national perspective. *BMC Pregnancy Childbirth* 2007;7:26–37.
- Hildingsson I, Haines H, Karlström A, Johansson M. Parents prefer continuity of midwifery care – time to change the Swedish system? A prospective longitudinal cohort study. *Sex Reprod Healthc* 2016;7:27–32.
- National Board of Health and Welfare. *Birth statistics Sweden; 2015*. < www.socialstyrelsen.se > [retrieved 2 Dec 2017].
- Handelzalts JE, Becker G, Ahren M-P, Lurie S, Raz N, Tamir Z, et al. Personality, fear of childbirth and birth outcomes in nulliparous women. *Arch Gynecol Obstet* 2015;291:1055–62.
- Adams SS, Eberhard-Gran M, Eskild A. Fear of childbirth and duration of labour: a study of 2206 women with intended vaginal delivery. *BJOG* 2012;119:128–46.
- Nerum H, Halvorsen L, Straume B, Oian P. Different labour outcomes in primiparous women that have been subjected to childhood sexual abuse or rape in adulthood: a case-control study in a clinical cohort. *BJOG* 2013;120:487–95.
- Forster DA, McLachlan HL, Davey MA, Biro MA, Farrell T, Gold L, et al. Continuity of care by a primary midwife (caseload midwifery) increases women's satisfaction with antenatal, intrapartum and postpartum care: results from the COSMOS randomised controlled trial. *BMC Pregnancy Childbirth* 2016;16:28.
- McCourt C, Stevens T, Sandall J, Brodie P. Working with women in developing continuity of care in practice. In: Page L, McCandlish R, editors. *The new midwifery: science and sensitivity in practice*. 2nd ed. Philadelphia: Churchill Livingstone Elsevier; 2006.