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# Important aspects of intrapartum care described by first-time mothers giving birth in specialised obstetric units in Norway: A qualitative analysis of two questions from the Babies Born Better study

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ABSTRACT

*Objective:* To explore aspects of intrapartum care that were importanrt for primiparous women who had given birth in large obstetric units in Norway.
*Methods:* We used data from the Babies Born Better (B3) survey, version 1, which is an international, web-based qualitative survey. We performed a reflexive, thematic analysis of the responses to two questions about descriptions of aspects of positive care and areas of care requiring improvement during the intrapartum period. The responders could give up to three responses to each question and there were no word limits.
*Results:* In all, 677 first time mothers who gave birth at the five largest specialised obstetric units in Norway during 2014–2015 were included in the study. The thematic analysis of the 2 205 responses resulted in three final themes: 'Communication and positive interactions with the caregivers', 'Autonomy and active involvement in the labour process', and 'Safety, competence and quality of labour care'.
*Conclusion:* For women who give birth for the first time in specialised obstetric units both relational aspect such as communication and respect, and environmental aspects such as facilities, are of importance. First-time mothers might be particularly vulnerable to absence of positive interactions with caregivers because they lack the resources former birthing experience can give. It is essential to give unexperienced birthing women special attention during childbirth because the first birth may influence decisions in following pregnancies.



## Introduction

In high-income countries, many women give birth in large specialised obstetric units. Ideally, women should have the opportunity to choose where to give birth (National Institute for Health and Care Excellence, 2014; World Health Organization, 2018). However, this might not be possible for several reasons, such as the distance between the place of living and possible options for place of birth, a lack of midwives or obstetricians, the woman's risk status and/or the need for first-line management of complications (Renfrew et al., 2014).

The WHO recommends providing the same standard of maternity care for all women regardless of place of birth. This comprises respectful care, effective communication, continuity of care and that women can bring a companion of their choice during childbirth (World Health Organization, 2018). Furthermore, the WHO emphasises the importance of all women having a positive birth experience (Oladapo et al., 2018; World Health Organization, 2018). International research studies have found that the aspects of care that women perceive as important during childbirth are: being able to give birth in a safe environment with the support of the birth partner, and competent, friendly health care providers and being actively involved in the various decision-making processes (Downe et al., 2018). National research shows that regardless of place of birth and parity, women in Norway emphasise compassionate and respectful care with a family focus, and having a sense of continuity, consistency and security throughout childbirth (Vedeler et al., 2021).

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Giving birth, particularly for the first time, is one of the most significant events in a woman's life. Therefore going into labour for the first time can be seen as a balancing act in an unknown territory, both in relation to the personal experience of the first labour and encountering the maternity care system (Eri et al., 2015). The experiences of labour and birth may contribute to how first time mothers develop good self-esteem, positive feelings for the baby and adjustment to the motherhood role (Parratt, 2002). During labour and birth, first time mothers in particular appreciate being confirmed and seen as unique individuals (Nilsson et al., 2013). A negative first birth experience might be associated with fear of childbirth in subsequent pregnancies (Størksen et al., 2013) and is also associated with postponing the next pregnancy or deciding not to have more children (Gottvall and Waldenstrom, 2002). A safe environment contributed to a sense of trust and emotional strength, which were positive factors promoting a normal birth and a positive first birth experience in a large specialised obstetric unit (Aune et al., 2015). The optimal approach in maternity care should be to focus on promoting health and well-being. A positive birth experience may have a health-promoting and empowering effect on women's health (Meier Magistretti et al., 2016).

In all labour and birth settings, there is a need to understand prevention of complications, how to promote physiological birth, to strengthen women's own capabilities and enhance positive well-being for mothers and new-borns in the short and long term (Kennedy et al., 2018). Specialised obstetric units have birthing rooms equipped with all necessary medico-technical devices, these setting are shown to influence both the birthing woman, her companion and the health professionals (Shah and Setola, 2018). An over-medicalised environment might be unfamiliar to the first time mother and may distract the women when giving birth (Hanson et al., 2001). On the contrary, a sense of familiarity may have a positive impact on feelings of control, ownership of space and nest building behaviours of birthing women (Mondy et al., 2016). The aim of this analysis of Babies Born Better (B3) data was to explore aspects of intrapartum care that were important for primiparous women who had given birth in large obstetric units.

## Materials and methods

### *Maternity services in Norway*

In 2020, approximately 53,000 births took place in Norway (Norwegian Institute of Public Health, 2021). Intrapartum care is free of charge at point of delivery and is organised at three levels: specialised obstetric units, obstetric units, and midwifery units (alongside or freestanding) (Norwegian Institute of Public Health, 2021). Due to geography and demography, the population is widely scattered, and maternity services are characterised as centralised or decentralised. Therefore, many women do not actually have a real free choice regarding the place of birth. Most areas offer only one unit, so place of birth will depend on residency. However, in the four largest cities, there is one alongside midwifery unit in addition to the specialised obstetric unit. The option to give birth in the midwifery unit is dependant on risk status and capacity on admittance. In the most populated area around the capital women have the opportunity to choose amongst several specialised obstetric units and obstetric units.

During the study period, there were 47 birth units in total in Norway, amongst them 17 specialised obstetric units. This level has obstetric, anaesthetic and paediatric expertise; however, they offer care for women with all risk statuses. The units vary considerably in size, however the five largest specialised obstetric units have more than 3000 births annually and more than 40% of all women in Norway give birth in these five units (Norwegian Institute of Public Health, 2021). In 2021, the national caesarean section rate was 16%, the induction rate 29%, and the epidural rate 37% (Norwegian Institute of Public Health, 2022). Maternal mortality rate 2.9% (Diguisto et al., 2022) and perinatal mortality rates 0,3% (Norwegian Institute of Public Health, 2022) are amongst the lowest in the world.

### *Data collection*

#### *The Babies Born Better (B3) survey*

To describe what women view as important aspects of care, we used data from the B3 Survey, version 1. The B3 Survey is a web-based questionnaire designed to identify factors that underpin women's views and experiences of maternity care across Europe. The B3 Survey is developed based on a salutogenic perspective, which first and foremost explore positive aspects of care and eventually what women suggest being changed in the care. The B3 Survey was developed within the framework of the EU COST Action 'Childbirth Cultures, Concerns and Consequences' (IS0907) and continued in Action 'Building Intrapartum Research Through Health' (IS 1405). Data has been collected in three waves between 2014 and 2022. In the first version, the survey is translated into 22 languages, further on, it has been translated into 25 languages. It was launched through social media, mainly through Facebook, where the link was spread to relevant groups.

The first section of the questionnaire requires fixed responses related to demographic and clinical factors. The main sections invite open responses, designed to elicit women's views of positive aspects and suggestions for change after their experience of care. The answers to the following open-ended questions in the survey provided data for the current study:

- What were the three best things about the care you received there [in the place you gave birth]? (Best Care/BC)
- If you had the power to make three changes in the care you received [in the place you gave birth], what would the changes be? (Care Improvement/CI)

The survey can be found in the supplementary files.

The women were asked to give up to three responses to each of the two questions; accordingly, the number of units of analysis was higher than the number of respondents. There were no word limits in the free text boxes, so the responses varied from only one word to longer accounts.

### *Sampling*

All primiparous respondents who had given birth in Norway from 1.1.2014 - 31.12.2015 in a specialised obstetric unit with more than 3000 births each year, regardless of risk status or complications, and who had given at least one response to one of the two open-ended questions mentioned above were eligible for inclusion in this study. We excluded five women who had answered the survey in a language other than Norwegian, Swedish, Danish or English (see flowchart, Fig. 1).

### *Procedure for analysis*

We formed two datasets in preparation for the analysis corresponding to the two open-ended questions, to prepare for a 'two-sided' analysis. Our assumption was that we could reach a more comprehensive understanding of what women perceive as important aspects of care by analysing the two questions of 'best care' and 'care improvements' independently. We believe that together the two questions could give overall information and insight on what women view as important aspects of care. The two datasets were approached separately by two different teams, facilitated by the first and last author, until we reached the final step of the analysis. We performed reflexive thematic analysis inspired by Clarke and Braun (Braun et al., 2019). Initially, the entire dataset was

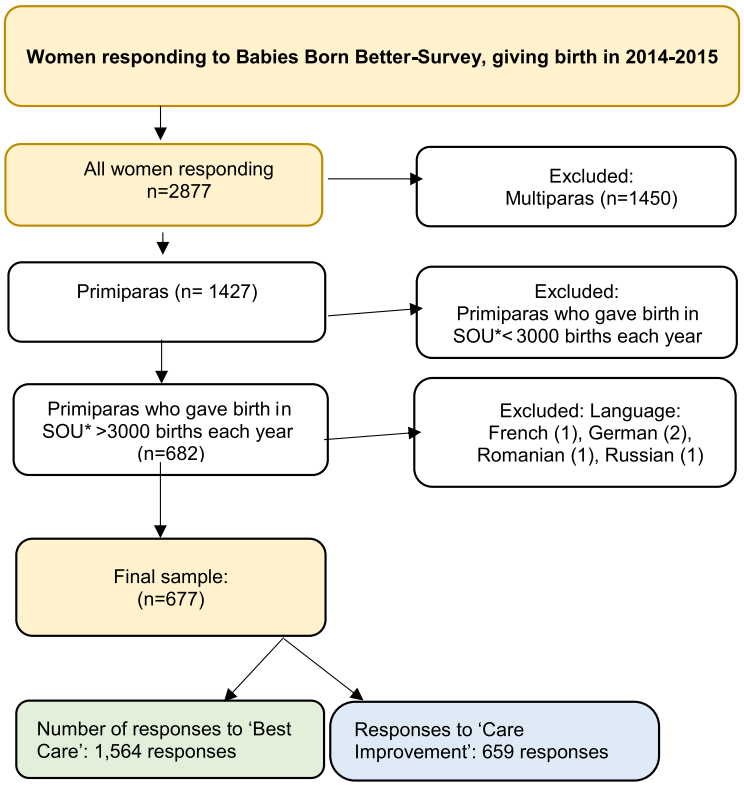


**Fig. 1.** Flowchart of sampling, responders and number of responses.
*SOU=Specialised obstetric unit.

read through several times to develop a good sense of the content. In the next step, meaning units relevant to the research question were identified and coded. The codes were thereafter organised into sub-themes and subsequently into preliminary themes for the two datasets separately. We developed three preliminary themes relating to the question 'What were the three best things about the care you receive', and four preliminary themes relating to the question 'If you had the power to make three changes in the care you received, what would the changes be'. In the final step of the analysis the seven preliminary themes comprising both 'best care' and 'care improvements' formed the three final themes which were organised into a coherent account representing the entire dataset.

## Research ethics

Ethics approval for the B3 survey study was granted by the Ethics Committee of the University of Central Lancashire (UCLAN) in the UK (Ethics Committee BuSH 222). In the present study, we used an anonymised dataset. The study was approved by the Norwegian Data Inspectorate (NSD) (ref: 60,547/3/HJ/RH).

## Results

In all, 677 first-time mothers who gave birth at the five largest specialised obstetric units in Norway during 2014 and 2015 were included in the study, mean age was 29 years. Altogether 2205 responses were analysed; 1564 responses to the question 'What were the three best things about the care you received', and 659 responses from to the question 'If you had the power to make three changes in the care you received, what would the changes be' (Fig. 1). The thematic analysis resulted in seven preliminary themes and three final themes (Table 1). The content of each theme is presented with original quotes from the responding women identified by: a letter (A, B, C, D, E) referring to the five units/BC (best care) or CI (care improvements)/anonymous respondent id.

### *Theme 1: Communication and positive interactions with the caregivers*

Good and person-centred communication and positive interactions with friendly caregivers were very important aspects of care for the women. Communication customised to each individual woman throughout the course of labour seemed to comprise three intertwined elements: information, explanations, and guidance. The information element was related to having knowledge about the different options available during labour and birth—for example, when it came to pain relief. It was important that the midwife informed them extensively about different alternatives from which they could choose, and which option would best suit the individual situation. In particular, the importance of information on first contact with the maternity unit was mentioned. A respondent who lacked information described: '*Upon entry, we received little information and were left to ourselves. I felt stupid and alone, and lost faith that I would be able to carry out the birth*' (B/CI/547).

The respondents also pointed to the need for explanations along the way; they wanted to be constantly told what was going on. First, they wanted explanations all the way regarding what was happening, why things happened to them, what was going to happen next and what to anticipate further along. It was emphasised that they needed to know about the condition of the baby during birth, as this woman wrote: '*I wanted a better explanation of the risk to the baby when the heart rate dropped*' (C/CI/623). Women who had a breech birth, a caesarean section, or other types of complications wanted more clarifications about the process and the procedure along the way. It was evident that guidance and counselling from the midwife was an important part of care during labour

**Table 1**
. Preliminary and final themes.

| Preliminary themes | Final themes |
|---|---|
| Information and positive interactions helped me to manage labour (BC)[a]<br>I needed a good and understandable dialogue (CI)[b] | Communication and positive interactions with the caregivers |
| I wanted to feel informed and receive advice and guidance (CI)<br>I was seen and heard as a special person (BC)<br>A desire to be recognised as an active participant in my own birth (CI) | Autonomy and active involvement in the labour process |
| The health care personnel and the environment provided security in an unknown situation (BC)<br>A wish for personalised facilities in the ward (CI) | Safety, competence, and quality of labour care |

[a] BC: "What were the three best things about the care you received".
[b] CI: "If you had the power to make three changes in the care you received, what would the changes be".

and birth. This included guidance related to, for example, breathing techniques, pushing, and birthing positions. One woman described the following as the best part of care: '*The midwife guided me in relation to positions I could try out throughout the birth. I had no idea what opportunities and what to try*' (D/BC/391). Another woman explained what she would have wanted to change: '*Better guidance from the midwife in how to deal with pain*' (D/CI/442). The need for a present and available midwife was intertwined with the need for information, explanations and guidance throughout the course of labour. Some respondents had experienced a feeling of being left to themselves, and they had wanted the midwife to stop by more often to provide them with the information they needed. One woman noted, '*More help at the start, more guidance to deal with pain, was left to myself*' (A/CI/436).

The manner and attitude of the midwife were important for a good relationship and for building trust with the woman and the couple as a whole. This relates to how the midwives and other professionals appeared in front of the woman and how they approached her and her partner. A perception of an arrogant and insensitive midwife could lead to a poor relationship and a lack of trust from the woman: '*The midwife pulled off my duvet in the middle of a contraction*' (B/CI/533). On the other hand, if the professionals were perceived as having a friendly, helpful, and positive attitude, trust was built, and positive interactions occurred. Many women pointed particularly to a friendly, nice and accommodating midwife as the best part of their care. Because the attendance of the partner was important for the women, they appreciated that the partner was also approached and taken care of in the same manner.

As such, positive interactions with the caregivers were grounded in good dialogue and respectful communication, which was built on mutual trust. One woman stated, '*The midwives were so skilled and built such a good trust that I let go of control. We knew exactly what roles we had and the trust helped create a good collaboration. It was a dream birth*' (A/BC/244). Furthermore, they appreciated that the staff expressed that they believed in the woman's ability to give birth and that they had faith in the woman. Faith was expressed by cheering, encouragement and motivation during the labour and birth process, and a feeling that the midwives were dedicated to this unique moment and this special birth. Positive feelings also came to the fore if the midwife showed compassion through her actions and appearance. A cold cloth in the forehead, comfort or a hug, stimulated trust and positive interactions between the health care personnel and the birthing woman: *'I felt they talked to me and gave encouraging words they gave support so I could manage the birth. There were smiles and kindness'* (D/BC/441).

Furthermore, midwives who were able to create a calm and unhurried environment by virtue of their appearance stimulated positive interactions with the women and their partners. Women described how they appreciated that the professionals appeared calm, were patient and did not rush the progress of labour: *'The midwife was with me almost the whole time and was very motivating, I got time to let my body give birth' (B/BC/431).* They felt that such an environment stimulated a feeling of peace and time for the body to give birth: '*No stress, they didn't have to check everything 100 times*' (D/BC/250). The women also appreciated the feeling that the staff enjoyed their work, which led to a good and relaxing atmosphere and prompted positive interactions. However, if the women felt that there was a hindrance to the relationship, the dialogues were stalled or without trust. This could happen, for example, if the midwife did not speak the same language as the mother and the two did not understand each other fully. This could lead to poor communication, misunderstandings, and a lack of positive interactions.

*Theme 2: Autonomy and active involvement in the labour process*

A very positive element of care during childbirth was whether the woman's wishes and preferences were considered, which included being asked about expectations and hopes for the forthcoming birth. If so, the woman felt respected and taken seriously. This led to a feeling of autonomy and receiving full attention from an engaged midwife. On the contrary, the women reported feelings of vulnerability and sadness if they were not believed or asked about their preferences. The decision and timing of admittance in the early or latent phase of labour were pointed out as an area in which the women wanted to be more involved. They felt that they had very little influence on the situation and no power to change the decision if they were denied admittance. This refers to both telephone contact prior to admittance and women approaching the labour ward directly and wanting to be admitted. The feeling of not being believed made the lack of autonomy even worse. Two women noted the following aspects they would have wanted to change: '*I wished they had confidence in me when I said my water had broken*' (D/CI/281) and '*As a first-time mother, I should have been taken seriously in telephone contact*' (A/CI/176).

Some women brought a birth plan to state their wishes for labour and birth and felt bad if this was ignored by the midwife. On the other hand, when the plan was acknowledged, it led to feelings of being seen as an individual and having influence on and being involved in decisions concerning their own labour process. One woman noted as the best part of the care: *'I was heard regarding my wishes and needs and the midwives went to great lengths to get it the way I wanted*' (B/BC/525).

The feeling of being an active participant during the process of labour and birth was an important aspect of care. This meant, amongst others, being involved in decisions regarding themselves and the baby, especially decisions about interventions and pain relief methods. Some women felt overlooked and ignored and stated that both midwives and doctors spoke in a language that was over their heads and that they were not involved in what was happening. They wanted to be included in the discussions before an intervention and influence the decisions made. Some women reported that they were neither asked nor informed prior to procedures performed by the health care personnel: '*The midwife did not inform me before she performed the episiotomy*' (C/CI/671). To have pain re-

lief when they asked for it was an important aspects of autonomy for the respondents. They felt that they sometimes had to wait too far out in the course of labour and would have wanted pain relief earlier and been respected for their wishes and needs concerning this matter.

*Theme 3: Safety, competence, and quality of labour care*

Both the care providers and the facilities in the women's environment were mediators for providing a sense of security in the new situation when giving birth for the first time. Safety was a very important issue for the women and was expressed in different ways. Amongst others, safety was described as a feeling of '*being in safe hands*'. It seems that the knowledge and expertise of the professionals were crucial for feeling safe in the situation, and the women needed to have confidence that the care providers were skilled. One woman replied: '*The midwife appeared competent, which gave me a sense of security*' (C/BC/583). The competence of the professionals was also described in more concrete terms: the power to act if needed, good routines, foetal monitoring, and the management of emergency situations. One woman wrote: '*Quick decision of midwife and paediatrician when the baby got a low pulse …* (E/BC/19). Another participant describe: '*The midwife and obstetrician were confident and determined in their assessments and decisions*' (D/BC/448). On the other hand, if the midwife was perceived as inexperienced, it could lead to a feeling of not being in safe hands.

The respondents called for continuity of caregivers as part of the quality of care and found it very challenging and demanding to interact with many different midwives and other care providers. For some women, changing the midwife during birth lead to a feeling of being on an 'assembly line'. One woman wrote: '*I got a lot of contradictory messages, probably because of the new shift*' (E/CI/101). Another woman responded, '*I'd have wanted fewer people present during the last part of my birth, many people to deal with*' (B/CI/389). In addition, it was crucial not to have a new midwife at very demanding parts of labour: '*Don't change the midwife at just 15 min left of birth*' (B/CI/389).

The physical birth environments and the facilities offered were connected to both the feeling of safety and how the women perceived the quality of care. For some women, the fact that they were in a hospital with specialised medical staff and all technological equipment available, made them feel safe. They believed that whatever happened during labour and birth, the hospital had the professionals and equipment needed to solve any situation. As one woman pointed out: '[The best part of care] *was the medical equipment and the knowledge and competence to follow the baby's condition*' (E/BC/203).

As part of quality in care, a wide range of facilities were called for. These include access for all women to various options of pain relief: nitrous oxide, epidurals, acupuncture, and different options choices of 'alternative' pain relief: *'I'd have wanted better availability of aids such as* e.g. *highchair, yoga ball and bathtub'* (A/CI/507). Furthermore, a central quality matter was the capacity of the rooms and staff in the maternity ward. The women described the experience of a crowded unit as a shortage. Some women recounted a long waiting period in the hallway despite painful contractions. A nice birthing room equipped with a private bathroom was pointed out as very positive and was likewise missed when not offered. The quality and amount of equipment in the rooms were of importance—for example, the bed, the towels, and available hardware. The women also appreciated a room which offered a tranquil and relaxing atmosphere with less clinical surroundings, which could be achieved with music and softer lighting*: 'I would have changed the lighting, it was so bright it cut into my eyes'* (B/CI/488).

## Discussion

This analysis of Babies Born Better (B3) data yielded three themes which encompass important aspects of intrapartum care for primiparous women who have given birth in large obstetric units in Norway: Communication and positive interactions with the caregivers, autonomy and active involvement in the labour process and safety, competence and quality of labour care.

An experience of good communication during the labour and birth process was important for women who gave birth for the first time in specialised obstetric units in Norway. The women identified three dimensions of communication: information about available options, for example, pain relief; continuous explanations about what was going on; and guidance on how to follow the labour process in the best possible way. Midwives are the main providers of maternity and labour care, and communication is a crucial part of professional support during childbirth. The results show that it is important to be aware of the intertwined dimensions and thus customise them to the needs of individual women. It is likely that nulliparous women have extra needs when it comes to information, explanations, and guidance during the birth process (Dahlberg and Aune, 2013; Dahlen et al., 2010a; Nilsson et al., 2013). Furthermore, the women included in this study gave birth in specialised obstetric units, where the care providers were unknown to them because there was no continuity from pregnancy care to labour care. It is likely that other models of care may better meet women's needs regarding person-centred care, including information, explanations, and guidance during labour. Extensive research has shown that models based on continuity respond better to women's needs and make women more satisfied with their labour and birth experiences (Perriman et al., 2018; Sandall et al., 2016).

The findings show that respectful communication is an integrated part of the experience of positive interactions with friendly caregivers, along with a feeling of mutual trust, a positive and helpful attitude, and an experience of being seen as a unique person. For many women in the study, this was mentioned as the best part of the care they received. These results resonate with the growing body of knowledge about what matters to women during childbirth (Downe et al., 2018; Vedeler et al., 2021) and, specifically, what women perceive as respectful (Shakibazadeh et al., 2018) and compassionate care (Vedeler et al., 2021). The idea that compassion is part of quality midwifery care is relatively new in the literature, but over the last decade, compassion has appeared in maternity care documents (Renfrew et al., 2014; World Health Organization, 2016). It is still not clear what compassionate midwifery care should entail (Ménage et al., 2017); however, emerging evidence suggests the following characteristics: to make meaningful connections with women, to initiate individualised understanding of each woman and to act through care and support (Krausé et al., 2020). In the current study, as in another Norwegian study (Vedeler et al., 2021), women pointed to actions performed by the midwife which led to feelings of receiving compassionate care. Menage et al. (2020) showed that birthing women experience compassionate interactions with midwives as human and professional, entailing, amongst others, an available midwife who is tuned in to the needs of the individual woman and who provides communication and touch. There is a need for more knowledge on how women in labour experience compassionate care.

Autonomy and active involvement throughout the course of labour were important areas of care for nulliparous women in specialised obstetric units. This finding is echoed in other research on what women value during childbirth (Downe et al., 2018) and is pointed out as an important part of respectful maternity care (Shakibazadeh et al., 2018). We might take for granted that women giving birth in high-income countries, such as Norway, are cared

for with respect and that they are involved in decisions related to care during labour and birth. However, women in this study reported feelings of not being believed when presenting their own signs and symptoms of labour and felt that they had little influence over the decision of admittance to the labour ward. We can assume that this is an area of care that it is especially important for first-time mothers to feel they can influence (Eri et al., 2015).

The findings of our study show that for the women, a sense of security to a high degree connected to the skills and competencies of the health care professionals. Karlström et al. (2015) reported that feeling safe and secure was an essential part of women's positive birth experience. Vedeler (2021) showed that although women used the same terms linguistically, they referred to different meanings regarding what made them feel safe: medical, emotional, and relational safety. A sense of security is a basic need in childbirth and is influenced by both internal and external factors. A recent review (Werner-Bierwisch et al., 2018) proposed that a birthing woman's internal factors can be summarized into the following groups: emotional states, knowledge and experiences and the health status of the mother and child, and that the external factors consist of attributes and acts of supporting persons, setting and options of maternity care. The women included in our study were explicit about how midwives and doctors who appeared skilled and competent through their actions and decisions led to feelings of 'being in safe hands'. It seems that women's sense of security in this study was more influenced by external than internal factors—the skills, competencies and actions of the professionals and the availability of all necessary medical equipment. A possible explanation is that the women included in our study gave birth for the first time, which implies that they are 'novices' in the field. Dahlen et al. (2010a; 2010b) showed that women without earlier experience of childbirth have a shared experience of 'reacting to the unknown'. It is reasonable that external factors play a more important role than internal factors for women without any earlier experience, because external factors are not dependant on the self to the same degree. The birth setting could also have influenced the participants' sense of security in our study because the medical environment of specialised obstetric unit is a foreign place for first-time mothers. We assume that known surroundings, or at least an environment with a peaceful and tolerant atmosphere, could have the potential to activate internal factors in first-time mothers to a greater extent (Nilsson et al., 2013). However, the association between the internal and external factors and the sense of security, as well as the impact of the different factors on the birthing experience, remains unclear (Werner-Bierwisch et al., 2018).

Our study shows that factors related to the birth environment and facilities matter to nulliparous women who give birth in specialised obstetric units. These factors include a relaxing atmosphere, comfortable beds and available sanitary equipment in a private room. These wishes may be motivated not only by practical reasons but also by women's physical and emotional needs, expressed by the environment, as shown by Goldkuhl et al. (2021). The authors explored the influence and meaning of the birth environment for nulliparous women at a hospital-based labour ward and pointed to examples of how the space, furniture and equipment facilitated movement, privacy and relaxation during labour and birth (Goldkuhl et al., 2021). Furthermore, factors such as colours, lighting, music, and temperature influence birthing women (Shah and Setola, 2018). These factors may contribute to normal progress in labour, as discussed above, providing balance between the internal and external factors (Olza et al., 2020), a positive birth experience and well-being for the woman and her partner. Environmental factors should contribute to stress reduction and relaxation to increase the release of oxytocin (Olza et al., 2020).

In specialised obstetric units, it is likely that the birth environment and facilities are technocratic, and that medical equipment is available and visible to the women. Some women in this study valued the technocratic environment, which might be understood as one of the external factors leading to a sense of security for first-time mothers (Werner-Bierwisch et al., 2018). According to Shah and Setola (2018), the birthplace expresses the philosophy of childbirth. The relationship and interaction between the birthing woman, her companion and the midwife or other professionals involved in the care may be influenced by the environment and the facilities in the ward, which again may influence the actual care (Goldkuhl et al., 2021; Healy et al., 2017). A technocratic environment may lead to more medicalised labour care (Shah and Setola, 2018). It is probably pertinent to ensure that women who give birth for the first time have an environment that is optimal for meeting their emotional and relational needs, to feel a sense of security and to facilitate the progress of labour. More research is required to evaluate the implications of the birthing room environment for birthing women (Nilsson et al., 2020), to create the optimal environment and atmosphere and to balance the nature of giving birth.

## Strengths and limitations of the study

The B3 survey contains several open-ended questions, of which two questions relating to the best part of care and what women would have liked to change formed the data for this study. The online qualitative survey is a flexible method that provides the potential to capture a diversity of perspectives and experiences (Braun et al., 2021). The fact that the response options were truly open-ended and without word limitations allowed for the participants to provide responses that were important to them and not predetermined by the researchers. We performed a "two-sided" analysis of women's responses, which we believe have contributed to robust and comprehensive results. It is likely that important aspects of care during labour and birth are shaped by highlighting both positive and challenging experiences. Another strength of the study is its sample size, which offered substantial and nuanced data material with the potential for maximum variation (Braun et al., 2021).

On the other hand, online survey studies may have some methodological limitations, such as self-selection bias and response bias (Polit and Beck, 2017), which may have contributed to a sample of women used to express themselves on social media, excluding some aspects of care important for specific and marginalised groups. In this study we restricted by language, however only five responders were excluded.

Another weakness might be the lack of more detailed sociodemographic and obstetric information from the respondents. For example, information about employment status and education, as well as information concerning complications or interventions during labour and birth, could have permitted a more nuanced analysis of the results.

## Conclusions

For women who give birth for the first time in large specialised obstetric units, both relational aspects such as communication and respect and environmental aspects such as facilities are important. Nulliparous women might be particularly vulnerable to the absence of positive interactions with caregivers because they lack the resources former birthing experience can provide. It is essential to give inexperienced birthing women special attention during childbirth because the first birth may influence decisions in following pregnancies.

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## Data availability statement

The data supporting the conclusions of this paper will be made available by the corresponding author on reasonable request.

## Ethical approval

Ethics approval for the B3 survey study was granted by the Ethics Committee of the University of Central Lancashire (UCLAN) in the UK (Ethics Committee BuSH 222). In the present study, we used an anonymised dataset. The study was approved by the Norwegian Data Inspectorate (NSD) (ref: 60,547/3/HJ/RH).

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## Credit author statement

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## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## CRediT authorship contribution statement

**Tine Schauer Eri:** Conceptualization, Methodology, Data curation, Writing – original draft, Supervision, Project administration. **Ingvild Grøtta Røysum:** Methodology, Formal analysis, Writing – review & editing. **Maria Opstad Mellemstrand:** Methodology, Formal analysis, Writing – review & editing. **Rebekka Bø:** Methodology, Formal analysis, Writing – review & editing. **Lillian Sjømæling:** Methodology, Formal analysis, Writing – review & editing. **Anne Britt Vika Nilsen:** Conceptualization, Methodology, Data curation, Writing – review & editing, Supervision, Project administration.

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## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2023.103710.

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