# Experiences of postpartum women with early hospital discharge and extended follow-up at home in Norway: A qualitative exploration of a pilot project

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## ABSTRACT

**INTRODUCTION** In 2021, the Department of Obstetrics and Gynecology at Akershus University Hospital (AHUS), Norway, initiated a pilot project called 'BarselHjem' (Postpartum Home), a midwife/nursing assistant-led home-based care model supporting early discharge after childbirth. The initiative integrated the use of the Dignio application to facilitate communication between postpartum women and healthcare providers. The aim of the study is to explore women's experiences with early discharge and/or extended postpartum follow up at home.

**METHODS** A qualitative study was conducted between February and April 2024, approximately 18-38 months after the pilot project. All 32 women who participated in the pilot were eligible to participate. Twelve semi-structured interviews and three focus group discussions (FGDs) were done. Six women participated in semi-structured interviews only, four in FGDs only, and six in both. The three FGDs included two, five, and three participants, respectively. Reflexive thematic analysis following Braun and Clarke was used, with the themes and subthemes mapped onto the Donabedian domains of structure, process, and outcome.

**RESULTS** Sixteen women participated in the study. The findings reflect women's experiences of the organization and availability of postpartum care, relationships and continuity of care, satisfaction with follow-up and digital accessibility. Women identified coordination between hospital and postpartum follow-up as a key challenge.

**CONCLUSIONS** The midwife/nursing assistant follow-up care at home generally resulted in positive experiences for the mothers. Home visits were perceived as a valuable source of support both by mothers who chose early discharge and by those who remained longer in the postpartum ward before receiving follow-up at home.

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## INTRODUCTION

The postpartum period is an important time for the health and well-being of mothers and newborns, characterized by physical, emotional, and psychological changes[1]. Despite the importance of continuity of care after childbirth, postpartum care is given less attention in many healthcare systems, and as a result, it is often under-represented in both research and clinical practice[2,3]. Globally, a large proportion of women express dissatisfaction with the quality of postpartum care provided, as it frequently fails to address the diverse and complex shift in postpartum care delivery across many high-income countries[4]. This has reduced postpartum hospital admission time for uncomplicated births[5]. This transition is driven by efforts to optimize healthcare resources, enhance maternal satisfaction, and promote early bonding within the family[6].

Early postpartum discharge refers to the discharge of mothers and their newborns from the hospital 4–24 hours after childbirth[7]. However, no universally accepted definition exists. Previous studies raised concerns about the safety of mothers and newborns, especially when hospital stays following birth are cut short without enough follow-up care[8,9]. The studies indicated that women could be at risk of increased maternal anxiety, challenges in initiating breastfeeding, and difficulties in identifying neonatal complications such as jaundice and problems with breastfeeding. A Cochrane review suggests that early

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postpartum discharge may increase the risk of neonatal hospital readmission, although the evidence remains inconclusive regarding rare but serious outcomes, such as maternal and neonatal mortality[5].

Mothers' experiences of early discharge may depend not only on timing of discharge but also on the availability, quality, and type of follow-up care they receive. Previous experience of childbirth, family circumstances, continuity of care, and relationship with midwives can influence women's desire for early hospital discharge[6]. Therefore, the effectiveness of early discharge models should not rely solely on reduced hospital length of stay but also on providing continuous and well-coordinated follow-up care at home.

Norway provides publicly funded, universally accessible maternity care, free of charge, and allows women to choose their birthing place[10]. Postpartum hospital stays can range from one to three days in the postpartum ward or postpartum hotel, depending on the mother's needs. If the birth is uncomplicated, the woman can opt to go home six hours after birth, and a public health nurse will follow up within 7–10 days[10]. Shorter hospital stays may reflect growing recognition that birth is a natural process, along with changes in healthcare service priorities and capacities[11]. Although national guidelines emphasize individualized, timely follow-up through home visits or health-center consultations, variations in service provision and challenges in continuity and coordination between hospital and municipal services remain[10,12]. In 2024, about 63% of women received a midwife home visit within three days after discharge[13]. A 2018 national report on postnatal care in Norway (*Barselomsorgen i Norge*) found problems with the continuity and coordination of services among hospitals, municipal midwives, and general practitioners. The report further highlighted that some women said they did not get enough help with breastfeeding, caring for their newborns, and their own mental health[14]. Overall, postpartum follow-up in Norway has not fully met women's needs or WHO recommendations.

In line with national ambitions to strengthen postpartum care, the Department of Obstetrics and Gynecology at the study center developed the Postpartum Home (BarselHjem) project as an innovative service model in 2021, in collaboration with Nannestad municipality in Norway, in response to the identified gaps. The initiative aimed to shift postpartum care from hospital to home through a midwife/nursing assistant-led home-based care model supported by the telemedicine app Dignio. The Methods section provides a detailed description of the intervention.

Although previous qualitative studies have examined women's experiences of early discharge and midwife-led home visits, less is known about women's experiences of postpartum models that combine home-based follow-up with digital communication. Exploring these experiences may provide insight into how such models can be organized to accommodate women's differing postpartum needs. Therefore, the aim of the study was to explore women's experiences with early discharge and/or extended postpartum follow-up at home.

## METHODS

### Study design and setting

The participants in this qualitative study were residents of Nannestad municipality, located in northwestern Akershus county in Norway. The study center has one of the country's largest maternity wards, with around 5000 births per year[15]. Initially, the pilot project targeted healthy mothers and healthy term newborns who met the hospital's criteria for early discharge. Maternal eligibility criteria included vaginal birth, satisfactory clinical condition following birth, and the availability of a support person at home during the first two days after discharge. Newborn eligibility criteria included a gestational age of ≥37 weeks, birthweight of 2800–4500 g, an Apgar score of ≥6 at 5 minutes, and established feeding. During the pilot project, the eligibility criteria were broadened to include women who had vacuum delivery and cesarean section because relatively few women met all the initial criteria for early discharge, and planned newborn examinations in the home could not be implemented due to delays in obtaining the required equipment.

From March 2021 to August 2022, home-based postpartum follow-up was implemented. The planned follow-up comprised up to 12 hours of home-based care per family, distributed over 3–6 days, with the frequency and duration of visits tailored to mother's needs. Women discharged within 24 hours received their first home visit on day 1, while subsequent visits tailored to the mother's needs were scheduled, and the mothers could contact either their midwife at the health center (daytime) or health personnel at the hospital (evenings) through the Dignio app. Among the 16 mothers who participated in the qualitative study, four were discharged within 24 hours after birth. The home visits were conducted by the municipality midwife and/or nursing assistant from the hospital; the latter had more flexibility to perform home visits outside office hours. The involvement of nursing assistants increased the extent and flexibility of the home visits.

Women were given access to the Dignio app from 32 weeks of pregnancy, and it was activated for postpartum follow-up after birth. The app complemented home visits by facilitating digital communication with healthcare providers through audio, messaging, and video consultations. The Dignio app was designed to provide personalized information aligned with the services available at the Nannestad health center. The app also provided postpartum information and questionnaires intended to support follow-up and identify women who might require additional care. Four questionnaires were scheduled during the postpartum period: at discharge, approximately five days after birth, between days 14 and 21, and at six weeks postpartum.

### Participants and recruitment

All 32 women who participated in the pilot project were invited to participate in the qualitative study. Mothers who agreed to take part in the study were sent detailed information and electronic consent forms to their mobile

phones. Sixteen women consented to participate. Due to work commitments, nine mothers were unavailable, two relocated to another city, and five were unreachable. Participant characteristics (Table 1), including age, parity, and time of discharge, were collected using the Dignio app.

**Data collection**

This qualitative study included three focus group discussions (FGDs) and twelve semi-structured interviews between February and April 2024. The semi-structured approach and guide (Supplementary file) allowed for flexibility in the conversation, enabling interviewers to probe for more detailed responses while maintaining a consistent structure to ensure key topics were covered across all interviews[16] . Of the 16 mothers who participated, six mothers participated in semi-structured interviews only, four participated in FGDs only, and six mothers participated in both data collection methods. Overall, 12 mothers participated in semi-structured interviews and 10 participated in FGDs. Three FGDs were conducted, comprising two, five, and three participants, respectively. Each woman was assigned a unique identification number (Participant 1–16; P1–P16), which was retained throughout data collection, analysis, and reporting, irrespective of the data collection method. Participant numbers accompanying quotations therefore refer to the unique study identification numbers and not to the sequential order of the interviews. Twenty semi-structured interviews were initially planned. However, data collection was concluded after 12 interviews, as the research team considered that the interviews were providing sufficient information to address the study aim, with no substantial new insights being identified. The interviews were carried out by FJ and DJ on Zoom, each lasting between 30–45 minutes. The Zoom recordings were saved on an encrypted laptop and stored in TSD (Services for Sensitive Data). A focus group guide (Supplementary file) was developed and used as a guide for the discussion, ensuring that the participants remained focused on relevant topics while allowing for exploration of rich, meaningful data. A focus group discussion provides in-depth insights into participants' experiences through interactive, group-based conversations that create diverse perspectives and collective understanding[16]. Three FGDs were conducted by FJ, DJ, ASM, and LH with a total of 10 women, lasting for 50–70 minutes and recorded on Nettskjema-Dictaphone. After each interview and the focus group discussions, field notes were made, and data saturation was discussed between the research team, FJ, ASM, and LH. The interview guides can be found in the Supplementary file.

**Data analysis**

This qualitative study was informed by an interpretivist paradigm, recognizing that participants' accounts reflect their experiences and interpretations of postpartum care. Audio recordings from the individual interviews and focus group discussions were transcribed verbatim using Oslo

***Table 1. Characteristics of postpartum women who participated in individual interviews and focus group discussions evaluating the BarselHjem early discharge and home follow-up pilot project, Nannestad municipality, Norway, February–April 2024 (N=16)***

| Participant ID | Age (years) | Parity | Mode of delivery | Discharge time (hours) | Data collection method | Provider type |
|---|---|---|---|---|---|---|
| P1 | 29 | multipara | PN | 48 | SMI | midwife |
| P2 | 34 | primipara | PN | 24 | SMI + FGD | midwife and nursing assistant |
| P3 | 26 | multipara | PN | 48 | SMI | midwife |
| P4 | 36 | primipara | CS | 72 | SMI | midwife |
| P5 | 35 | primipara | CS | 72 | SMI | midwife |
| P6 | 38 | multipara | CS | 72 | SMI + FGD | midwife |
| P7 | 40 | primipara | CS | 5 days | SMI | midwife |
| P8 | 37 | primipara | VD | 4 days | SMI + FGD | midwife and nursing assistant |
| P9 | 32 | multipara | CS | >24 | | midwife |
| P10 | 25 | primipara | PN | <24 | SMI | midwife and nursing assistant |
| P11 | 32 | multipara | PN | 12 | FGD | midwife |
| P12 | 34 | primipara | PN | 48 | SMI + FGD | midwife |
| P13 | 30 | multipara | PN | >24 | FGD | midwife and nursing assistant |
| P14 | 32 | primipara | PN | 48 | FGD | midwife |
| P15 | 27 | multipara | PN | 7 | SMI + FGD | midwife |
| P16 | 32 | multipara | PN | 48 | FGD | midwife |

PN: partus normalis. VD: vacuum delivery. CS: cesarean section. SMI: semi-structured interview. FGD: focus group discussion.

University's Autotekst transcription service. The transcripts were analyzed using reflexive thematic analysis following Braun and Clarke[17]. The analysis followed the six phases of thematic analysis. The first author familiarized herself with the data through repeated reading of the transcripts and generated initial codes inductively from participants' accounts. The codes were developed to capture patterns and meanings relevant to the study aim. Preliminary themes were subsequently generated by grouping conceptually related codes and were iteratively reviewed, refined, defined, and named. The developing codes and themes were discussed among the research team (DJ, ASM, BVL, and LH) to support reflexivity and consideration of alternative interpretations. The final phase involved producing an analytical account of the findings.

The Donabedian framework was used deductively at a later stage of the analysis as an organizing framework rather than as a predetermined coding framework. The themes and subthemes developed through the reflexive thematic analysis were mapped onto the Donabedian domains of structure, process, and outcome to facilitate interpretation of organizational and structural aspects of postpartum care, processes related to care and home-based follow-up, and women's reported experiences and outcomes[18]. After each interview and the focus group discussions, field notes were made, and data adequacy was assessed based on the richness, diversity, and relevance of participants' accounts in relation to the study aim, rather than on data saturation. This study adhered to the Standard for Reporting Qualitative Research (SRQR)[19] (Supplementary file).

### Ethical considerations

The study was approved by the Norwegian Agency for Shared Services in Education and Research (Ref. no. 482335; Approval date: 24 October 2023). All participants received written information about the study and provided informed consent before participation. The consent included participation in the study, audio-recording of the individual interviews and focus group discussions, and anonymizing participant identity in the analysis and publications. Participants were also informed that participation was voluntary and that they could withdraw at any time from the study. There was no prior personal relationship between the interviewers and participants. We directly saved all the individual and FGD data on TSD, a sensitive data storage system.

### Researcher reflexivity

During the data collection, FJ assisted with care provision at the postpartum department, allowing for increased contextual understanding of what hospital-based postpartum care entailed. Through informal conversations with staff and patients, the study also supported further understanding of the dynamics and complexities of care provision in a busy postpartum ward where both high-risk and low-risk women and newborns were admitted together. However, the informal conversations with staff and patients were not used as data in this study.

## RESULTS

Sixteen women consented to participate in this study, eight primiparous and eight multiparous (Table 1). All participants in the study spoke Norwegian; one woman preferred the interview to be conducted in English. The women, aged 25–40 years, were either married or living with a partner, and their education levels ranged from upper secondary to higher education. More than half of the women (ten out of sixteen) had spontaneous vaginal deliveries. The duration of hospital stays varied based on the mode of delivery. Women who had vaginal deliveries stayed in the hospital between 12 and 48 hours, with one woman opting for discharge as early as seven hours after birth. In contrast, women who had a cesarean section (CS) required a longer hospital stay of 72 hours or more. The longest required hospital stay was five days, recorded for a first-time mother who had a CS. One woman had a vacuum delivery and required a four-day hospital stay.

The analysis identified themes and subthemes (Table 2) that were organized within the three Donabedian domains of structure, process, and outcome of care delivery, reflecting the mothers' experiences with early discharge and extended postpartum follow-up at home by a midwife/nursing assistant.

### Structure

Early discharge and home-based care require suitable physical, organizational, and resource infrastructure to facilitate effective care delivery. The themes and subthemes relate to the mother's decisions to return home after delivery. These decisions were influenced by the availability of home-based postpartum care follow-up, overcrowding at the postpartum ward, the desire for early discharge and the comfort of home, and challenges with hospital coordination. These factors influenced the women´s preference to opt for early discharge.

### Availability of home-based postpartum care follow-up by midwife/nursing assistant

The majority of mothers consistently emphasized that they opted for early discharge home because of the availability of home-based postpartum care follow-up. The mothers reported that this follow-up by a midwife/nursing assistant gave them assurance that their physical recovery, emotional well-being, and newborn care would be continued by a health professional. Furthermore, the mothers said that with the midwife/nursing assistant visiting them at home, they felt confident that if there should be any complication either to the mother or baby, it would be detected early:

> *'Since I chose to go home early … I am happy that the midwife/nursing assistant would visit me at home … because even if something should go wrong with me or the baby, she will be able to detect it early.'* (P2)

### Overcrowding at the postpartum ward

Several mothers mentioned overcrowding in the postpartum ward as a reason for early discharge, as it caused discomfort for the woman and her partner as well as limited access to the midwives. Additionally, according to the women,

inadequate accommodation for the partners also made it difficult for the partners to provide emotional and practical support during recovery, leaving new mothers feeling isolated. The mothers said the issue affected the provision of family-centered care and brought attention to the possible benefits of home-based care:

*'The maternity hotel was full, so we were moved to the maternity ward. Since we were in the maternity ward, not the maternity hotel, my husband had to sit in a chair all night.'* (P5)

### The desire for early discharge and the comfort of home

The decision for an early discharge was made voluntarily, based on the mother's own choice. Many mothers who have children preferred to return home to take care of their other children because they did not have anyone to look after them:

*'Knowing my other child is at home waiting for me made it difficult to relax in the hospital. My husband and I are in the hospital … and we don't have anyone to care for the other child at home.'* (P3)

Half of the mothers expressed their wish to return home early after delivery based on their previous experience with childbirth and motherhood. The mothers felt secure in their decision to leave the hospital early, as their delivery went smoothly without complications. According to the mothers, their previous experience with breastfeeding and newborn care gave them confidence, enabling them to trust their abilities and instincts:

*'I was very happy with the opportunity to go home and receive visits from the midwife … My delivery went well, and I have no problem breastfeeding my baby … I had little desire to be in the postpartum hotel.'* (P13)

The mothers expressed a deep connection to the comfort and familiarity of their home. They reported that it facilitated both physical recovery and emotional well-being after childbirth. The important factors mentioned by most mothers were the capacity to take control of their situation independently and sleeping in their own bed. They said that this gave them a sense of comfort, allowing for a deeper relaxation than what was achievable in the hospital:

*'When I came home, it was like now we have our own routine at home, and you sleep better in your own bed.'* (P15)

### Challenges with hospital coordination

The mothers reported a lack of coordination between the

***Table 2. Themes, subthemes and codes mapped to the Donabedian domains among postpartum women participating in individual interviews and focus group discussions evaluating the BarselHjem pilot project, Nannestad municipality, Norway, February–April 2024 (N=16)***

| Donabedian domains | Themes | Subthemes | Codes | Participants contributing |
|---|---|---|---|---|
| **Structure** | Organization and availability of postpartum care | Availability of home-based postpartum follow-up | Home visits available; follow-up at home; midwife/nursing assistant availability | P2 |
| | | Overcrowding at the postpartum ward | Busy ward; limited space; crowded environment | P5 |
| | | Challenges with hospital coordination | Coordination difficulties; communication between services; organization of follow-up | P11 |
| | Transition from hospital to home | Desire for early discharge and comfort of home | Preference for early discharge; comfort at home; preference for home environment | P1, P3, P6, P9, P11, P13, P15, P16 |
| **Process** | Woman-centered postpartum care | Holistic care and mental well-being | Emotional support; attention to mental well-being; being seen as a whole person | P1 |
| | | Flexibility and choice in postpartum care | Individual preferences; choice of care; flexible follow-up | P1, P14 |
| | Relationships and continuity of care | Relationship between midwife, mother and partner | Trust; communication with midwife; partner involvement | P3, P12 |
| | | Continuity of care | Familiar healthcare professional; consistency of care; continuity in follow-up | P4, P10 |
| | Support during transition to motherhood | Uncertainty and need for support among first-time mothers | Insecurity; need for reassurance; questions about newborn care; need for guidance | P2, P4, P5, P7, P8, P10, P12, P14 |
| **Outcome** | Experience and satisfaction with follow-up | Satisfaction with midwife/nursing assistant follow-up | Feeling supported; satisfaction with follow-up; positive care experience | P4, P7, P16 |
| | Digital accessibility and communication | Positive experiences with the Dignio app | Positive app experience; usefulness of digital follow-up; convenience | P5, P12, P15 |
| | | Accessibility and ease of communication | Easy contact; accessible support; communication with healthcare professionals | P6, P9 |

hospital and the project. They expressed frustration at the absence of clear information provided by healthcare professionals, especially staff at the postpartum ward, regarding their discharge and the processes involved in the project:

*'I experienced that the staff at the postpartum ward weren't really well informed. I had a cesarean section and started asking what we do now, and they said they hadn't received information and didn't know anything about the project.'* (P11)

**Process**

The interactions and behaviors of healthcare providers with the mothers during care delivery are of utmost importance for effective early discharge and home-based care. The themes and subthemes highlighted how care was delivered and how mothers experienced it. The subthemes include the importance of holistic care and mental well-being, continuity of care, the midwife's relationship with the mother and partner, uncertainty and the need for support as a first-time mother, as well as flexibility and choice in postpartum care.

**Importance of holistic care and mental well-being**

Most of the mothers emphasized the importance of holistic care in addressing the needs of the mother, newborn, and partner. The mothers expressed appreciation for the midwife's home visits, which provided them with personalized support and guidance during this vulnerable period. They further reported that the home visits not only facilitated physical care for the newborn but also offered essential emotional and psychological support for the mothers, as highlighted in the following:

*'When you have a child ... it's very heavy ... You are physically tired, and you need a lot more help. I was glad to have home visits from the midwife as she put a lot of focus on how I was feeling.'* (P1)

**Midwife's relationship with mother and partner**

The significant role of the midwife in shaping and supporting both the mother's and partner's experience during the postpartum period was highlighted. Mothers emphasized the unique position of the midwife to observe the dynamics of the couple's relationship, providing insightful information about their communication, cooperation, and shared responsibilities. The mothers mentioned that the midwife not only provided medical care but also contributed to family bonding, emotional support and encouragement for paternal engagement in infant care during the home visits:

*'Relationship building between the midwife and the parents is important, and I think she was very good at that ... because of the midwife, my partner became more involved in the care of our baby, and I was able to sleep more.'* (P12)

**Continuity of care**

Mothers highlighted how the midwife's presence and interaction helped them cope better with the new postpartum circumstances, removing their sense of isolation. Furthermore, they reported the significance of developing trust with the midwife. The importance of maintaining continuity with the same midwife throughout the perinatal period was emphasized:

*'I experienced that since I had the same midwife all the way through before and after delivery ... I had good chemistry with her, which made me feel safe to open up to her about my problems.'* (P10)

**Uncertainty and need for support as first-time mother**

All first-time mothers expressed concerns about their lack of experience with infant care and breastfeeding, which affected their sense of security upon returning home early after childbirth. Accordingly, these mothers said they desired extended hospital stays or more frequent postpartum visits to gain confidence in breastfeeding techniques. The desire for increased visits indicates a need for additional guidance and reassurance during this critical period:

*'I didn't feel safe going home right after the birth because I don't have experience with the baby or with breastfeeding ... but the visits from the midwife/nursing assistant made me feel safe.'* (P10)

**Need for flexibility and choice in postpartum care**

Mothers underscored the importance of placing the mother at the center of care decisions, emphasizing that the choice for the timing of hospital discharge should not rest with health providers, partners, or other relatives, but with the mother herself. The mothers express a desire for enhanced flexibility and personalized care, prioritizing the mother's needs, preferences, and circumstances. This idea includes options for both hospital stays and home-based postpartum visits, which are essential in addressing the diverse needs of postpartum mothers and enhancing their overall experience during the postpartum period:

*'It must be the woman herself who decides, not the woman's partner, not the woman's parents ... it must be the person giving birth who decides.'* (P1)

**Outcome**

For early discharge and home-based care to be successful, the effect of care on the mother's well-being and satisfaction plays a significant role. The following subthemes reflect mothers' experiences and perceptions of the support provided through home visits. The subthemes include satisfaction with midwife/nursing assistant follow-up, positive experiences with the Dignio App, accessibility, and ease of communication.

**Satisfaction with midwife/nursing assistant follow-up**

High satisfaction with the midwife/nursing assistant follow-up was expressed by most of the mothers. The mothers said they valued having a midwife /nursing assistant come

to their house, not just because they were easy to get in touch with, but also because they felt the midwife/nursing assistant had enough time for them during the home visits and was not distracted by other responsibilities:

*'I was very pleasantly surprised when I heard about the BarselHjem project. Experienced it as fantastic … I even called the hospital to express how grateful we were for the good and quick follow-up home visit … the visits were very reassuring.'* (P16)

### Positive experiences with the telemedicine tool Dignio App

These quotes from mothers highlighted the positive experiences they had using the telemedicine tool Dignio App, emphasizing its convenience and accessibility:

*'I experienced that the app provided me a sense of security and lowered the threshold for asking ongoing questions and getting the questions out of my system, and especially that you could ask questions in the evening.'* (P15)

Communication with the midwife/nursing assistant through the app made it easier for mothers to ask uncomfortable questions they might otherwise have been reluctant to raise in face-to-face encounters with healthcare providers:

*'I sat with all sorts of questions, for example, about which painkillers were safe to use … such questions I would not have felt there was room to call to ask, because they are such trivial things. But when you can only ask a quick question in the app, the threshold is greatly lowered.'* (P6)

## DISCUSSION

This study reveals findings about the experiences of mothers who participated in the early discharge and extended home-based postpartum care pilot project. The mothers voluntarily chose to return home early, and the care they received at home catered to their preferences. Overall, the mothers expressed positive experiences with the midwife/nursing assistant, highlighting satisfaction with their responsiveness, tailored care, and the convenience of being home during recovery. The satisfaction of postpartum mothers with midwife/nursing assistant follow-up is a crucial factor influencing positive maternal and neonatal health outcomes[20].

### Satisfaction with midwife/nursing assistant follow-up

The mothers particularly valued home visits and the ability to contact a health provider through the Dignio app. This is because the service allowed them to consult a skilled provider about their concerns without needing an extra hospital visit. The mothers in this project reported that they valued the continuity of care offered, viewing this as an important factor for their recovery. These follow-up visits gave the mother's timely help, emotional support, and a chance to discuss issues related to caring for a newborn, breastfeeding, and getting better. Research maintains that midwife-led continuity improves maternal satisfaction and decreases anxiety level[21,22]. The incorporation of follow-up at home enhances trust and empowerment[23]. Nonetheless, inconsistencies in follow-up frequency or accessibility may reduce perceived support[24]. A prominent theme that emerged from this study was the appreciation of the home environment, where mother's felt more comfortable, had better sleep, and established routines with the newborn. This study is in line with research by Schwind et al.[25] which highlights that familiar and comfortable surroundings can enhance maternal recovery and confidence in newborn care.

The follow-up at home allowed for personalized support, contributing to mothers' sense of security and empowerment. Most mothers felt more comfortable and safe when they had an established rapport and chemistry with the midwife, allowing them to express their concerns and receive personalized care. Previous studies have also shown the significance of personalized care, asserting that it effectively reduces physical complaints, increases confidence in healthcare providers, enhances maternal health, and improves overall health, including psychological and emotional well-being[26,27]. Furthermore, the findings from two studies[28,29] demonstrate the importance of positive attitudes and behaviors among healthcare providers, such as respect, attentiveness, and empathy, in effectively addressing postpartum challenges through proper follow-up care. Mothers described early discharge positively when it was offered as a choice rather than as a requirement. They emphasized that preferences for early discharge varied according to individual needs and parity. This aligns with previous research highlighting the importance of person-centered care in postpartum care[30]. Mothers who had given birth previously generally described greater confidence and a lower perceived need for support than first-time mothers. These findings suggest that postpartum support needs may vary according to parity and may help inform more individualized approaches to postpartum care[31].

### Positive experiences with telemedicine tool (Dignio App)

Mothers' experiences suggest that digital tools such as the Dignio app may facilitate access to maternal healthcare and communication with healthcare providers during the postpartum period. The app's ease of use and availability were common themes, as many mothers said that the digital platform gave them a safe and supportive place to talk to healthcare providers. This is in line with existing research indicating that telemedicine tools can enhance patient-provider interactions by reducing perceived communication barriers[32].

One of the key strengths of the telemedicine tool Dignio app, as described by the mothers, was its ability to lower the threshold for seeking help. This enabled them to ask quick questions without taking too much of the health provider›s time. A study found that mothers who used telemedicine tools felt more confident about taking care of their health and found it easier to talk to their doctors than mothers who only went to the doctor

in person[33]. On the other hand, another study[34] presents contrasting perspectives highlighting that some users may perceive telemedicine tools as impersonal or insufficient for addressing complex health concerns. Despite the advantage of accessibility, telemedicine tools may lack the depth of emotional support that in-person interactions can provide[35]. While the mothers in this study predominantly reported favorable experiences, subsequent research should investigate the potential for similar outcomes in different populations, including those from resource-limited countries.

### Challenges with hospital coordination and resource limitations

Despite the benefits of home-based postpartum care and telemedicine, challenges related to hospital coordination and resource availability remain important barriers to effective implementation[36]. Weaknesses in the pilot project with regard to resource limitations, including a lack of portable diagnostic equipment for home visits due to delays in procurement, further exacerbated these challenges. Mothers described resource limitations within the pilot project, including the lack of portable diagnostic equipment for home visits. Some reported having to return to the hospital for newborn screening and pediatric assessment and expressed a preference for these services to be provided at home. Absence of adequate tools for home-based diagnostics undermines the effectiveness of home-based postpartum care[1].

### Strengths and limitations

The main strength of this study is the rich data captured from mothers who recently experienced early discharge and/or extended postpartum follow-up care by a midwife/nursing assistant, enhancing the relevance and accuracy of the findings. The inclusion of both first-time and experienced mothers provides a comprehensive understanding of diverse perspectives. Focus group discussions enabled an organic conversational flow, permitting participants to expand upon one another's insights and reveal unforeseen themes, thereby enhancing the data. Thematic analysis enables the systematic identification and organization of principal themes, thereby augmenting the credibility and trustworthiness of our findings. The rigorous documentation of the research process ensures dependability and promotes transparency and replicability.

The homogeneity of the mothers, all from the same geographical area and similar cultural backgrounds, may restrict the diversity of perspectives represented and the transferability of the findings to women from different socioeconomic and cultural backgrounds. Furthermore, although there was no prior personal relationship between the interviewers and participants, as with all qualitative research, the researchers may have influenced participants' responses and the interpretation of the findings. The intervention limitations and time of the year made early hospital discharge difficult, and as such the pilot project was not tested to its full extent. While this study offers advantageous information about mother's experiences with postpartum care, its strengths and limitations require caution in interpreting its findings, which should be considered when upscaling the project. The relatively long interval between childbirth and data collection may have introduced recall bias. Participants reflected on their maternity care experiences approximately 18–36 months after childbirth, and some details may therefore have been difficult to recall accurately. Although time may affect the recall of certain details of care, research shows that women generally have accurate and enduring memories of their birth experiences.

## CONCLUSIONS

The findings suggest that offering home visits by a midwife/nursing assistant after early discharge and/or extended follow-up at home is a valuable source of support during the early postpartum period and as a complement to standard postpartum care. Mothers' experiences suggest that home visits may be a suitable option for healthy mothers and newborns when early discharge is preferred. Home-based follow-up may also have a role in supporting women following longer postpartum hospital stays. Participants described the Dignio app as facilitating timely and convenient communication with healthcare providers during the postpartum period. Through the telemedicine app, the mothers were able to seek advice about breastfeeding difficulties, newborn feeding patterns, wound healing, and emotional concerns without needing to travel to the hospital or health center. Women described the follow-up as providing advice, support, and reassurance regarding their own and their newborns' well-being during the early postpartum period. However, challenges related to coordination between hospital and municipal services, continuity of care, and the organization of home-based and digital follow-up were identified. Given the small and relatively homogeneous sample and the retrospective nature of the study, the findings should be interpreted with caution. Further studies with larger and more diverse samples are needed to explore women's experiences of home-based postpartum care and to inform further development and implementation of such models.

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The authors have each completed and submitted an ICMJE Form for Disclosure of Potential Conflicts of Interest. The authors declare that they have no competing interests, financial or otherwise, related to the current work. A.S. Miltenburg and B.V. Lindskog report that since the initial planning of the work they received funding by South East Norway Health Region and for the past 36 months they have received funding from the Foundation Dam for continuation of the project. D. Johnson reports that since the initial planning of the work she was awarded a US Fulbright Award to Norway, where she completed work on this project.

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## ETHICAL APPROVAL AND INFORMED CONSENT
Ethical approval was obtained from the Norwegian Agency for Shared Services in Education and Research (Approval number: 482335; Date: 24 October 2023). Participants provided informed consent.

## DATA AVAILABILITY
The data for this study cannot be shared because it includes sensitive and confidential patient information.

## AUTHORS' CONTRIBUTIONS
FJ: conceptualization, methodology, validation, investigation, writing of original draft. ASM and LH: conceptualization, methodology, validation, investigation, supervision. DNJ: methodology, investigation. All authors: formal analysis, data curation. ASM, LH, DNJ and BVL: reviewing and editing of the manuscript. All authors read and approved the final version of the manuscript.

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