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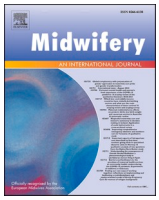

"Health challenges and midwifery support for new mothers after childbirth: A cross-sectional study in Sweden"

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ABSTRACT

Objective: This study aimed to investigate new mothers' self-rated and perceived health problems and complications; their reasons for, and the frequency of, emergency department visits; how emergency department visits were associated with sociodemographic and obstetric factors; and new mothers' experiences of received support from the midwifery clinic.
Design: A cross-sectional survey.
Setting and participants: The study was conducted at 35 of 64 midwifery clinics in Stockholm, Sweden. The study population consisted of 580 new mothers.
Measurement and findings: Descriptive statistics and logistic regression were used. New mothers experience a range of different health problems and complications during the first four weeks after giving birth. Sixteen percent sought emergency care. The odds of seeking emergency care increased for women with higher age and poorer self-rated health. Sixty-three percent of the new mothers received support from a midwife in primary care within the first four weeks after childbirth. Mothers who did not receive the support they wanted, expressed a wish for earlier contact and better accessibility.
Conclusion and implication for practice: It is notable that 16 % of new mothers seek emergency care in the first weeks after childbirth. This study has practical implications for midwifery practice and policy. There is a need for tailored postnatal support strategies so that midwives potentially are able to mitigate emergency department visits. Further studies should look at whether the high number of emergency visits among new mothers varies throughout Sweden, and whether this may be a result of reduced time of hospital stay after childbirth or other factors.

Introduction

The period around childbirth is for most women characterised by feelings of happiness and fulfillment, but at the same time, psychological and physical challenges arise, impacting the health and well-being of women (Alderdice et al., 2020; Richter, Bondü, and Trommsdorff, 2022; Walker, Rossi, and Sander, 2019).

Problems and complications are common in the postpartum period and most mothers describe one or more health problems, such as extreme fatigue, excessive bleeding, infections, constipation, urinary incontinence, breast engorgement and different kinds of pain (Brousseau, Danilack, Cai, and Matteson, 2018; Fahey and Shenassa, 2013). Breastfeeding complications are common (Radke, 2022) as are depressive symptoms and other mental health disorders (Shorey et al., 2018; Yildiz, Ayers, and Phillips, 2017). Factors that can influence a woman's perception of complications include previous childbirth experiences, the duration of labour, and the mode of birth (Falk, Nelson, and Blomberg, 2019). Physical and mental challenges can lead to a significant decrease in the quality of life of new mothers and may require emergency department care, either due to the severity of complications or to their perceived severity (Matenchuk et al., 2022). New mothers consume a lot of care in the period around childbirth and the need for guidance and support is great (Barimani, Oxelmark, Johansson, and Hylander, 2015; Yonemoto, Nagai, and Mori, 2021).

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A systematic review, including data from the United States (49 %), Canada (26 %), Europe (13 %), Australia (6 %), The Middle East (6 %), Asia (5 %) and Africa (1 %) found the incidence of emergency visits during the first year after childbirth varies between 4.8 and 12.2 % (Mitchell et al., 2023). Another study from Canada reported that 5 % of women visited emergency departments within 10 days after childbirth (Hundal et al., 2021) and an study from Ireland reported that 10 % of women visited the emergency department during the first three months after childbirth (Szafrańska, Begley, Carroll, and Daly, 2020). The reasons for emergency department visits included: infections, wound complications, fever, headache, hypertension, breast problems and abdominal pain (Mitchell et al., 2023; Patel et al., 2020; Brousseau et al., 2018). Despite the variety of medical problems, one study shows that most women visiting the emergency department postpartum received the diagnose "normal postnatal examination" indicating that many visits were non-emergent and may have been prevented by better postnatal care (Brousseau et al., 2018).

Factors associated with postnatal emergency department visits include living in remote or rural areas, lower socioeconomic status, major/moderate health conditions, multiparity, birth by cesarean section, intensive prenatal care, and young age (Matenchuk et al., 2022; Mitchell et al., 2023). On the contrary, other studies show that young postpartum women were less likely to visit an emergency department (Sheen et al., 2019). Women with mental health disorders used the emergency department during the postnatal period for psychiatric and obstetrical reasons more frequently than women without mental health disorders (Pluym et al., 2021).

In the Swedish context, 12 % emergency care visits by postpartum women were undertaken between the first two weeks (Barimani, Oxelmark, Johansson, Langius-Eklöf, and Hylander, 2014) and 30 days after childbirth (Vikström, Johansson, and Barimani, 2018), depending on factors related to childbirth per se, such as caesarean section, assisted birth, sphincter injury and breastfeeding problems.

The importance of midwifery care and its contribution to and impact on the quality of care by improving health and wellbeing of mothers, babies and families have been extensively researched and have resulted in a series on midwifery published in The Lancet (Homer et al., 2014; Renfrew et al., 2014; ten Hoope-Bender et al., 2014; Van Lerberghe et al., 2014). By using existing evidence to characterise what would make a difference to women regarding their needs in the period around childbirth, The Quality Maternal and Newborn Care (QMNC) framework was developed (Renfrew et al., 2014). The QMNC framework shows what is essential to optimise the normal care processes in relation to pregnancy, birth, the postnatal period and the first weeks of life by avoiding over-medicated approaches. The positive impact of midwifery care on both short- and long-term psychosocial and clinical outcomes demonstrates its importance in the perinatal care of women and children, showing that midwives have a significant contribution to make to promote health. This applies for all childbearing women but based on the QMNC framework midwives are also supposed to practice first line management for women with complications. (Renfrew et al., 2014).

Research shows that midwifery care and support to new mothers is beneficial, and preferably provided in the home of the new family (Aune, Voldhagen, Welve, and Dahlberg, 2021). Continuity and the possibility to contact a familiar midwife during the early postnatal period helps women to overcome barriers and facilitate the transition to motherhood (Walker et al., 2019). Continuity could enhance women's experiences of childbearing and was also associated with positive outcomes such as lower levels of depression and higher breastfeeding rates (Fox et al., 2023). Additionally, it has been suggested that midwives and other healthcare providers should focus on informing women about the management of common postnatal complications to prevent non-emergent visits at emergency departments (Brousseau et al., 2018).

In Sweden, midwives are the primary caregivers for mothers during pregnancy, birth, and the postpartum period. There are challenges in the shift from primary care during pregnancy to hospital care during birth and to the care offered postnatally from the primary health care again. Most women in Sweden gives birth in a hospital. The length of hospital stay after childbirth is decreasing, in Sweden and internationally (Jones, Stewart, Taylor, Davis, and Brown, 2021). In 2021, the average hospital stay in Sweden was 1.6 days after a vaginal birth and 2.7 days after caesarean section (Swedish National Board of Health and Welfare, 2022b). According to national guidelines, postpartum care for new mothers at a midwifery clinic provided by primary health care is limited to one visit, approximately 6–12 weeks after birth (SFOG, 2016). However, the regional guidelines differ from the national ones within some regions and in recent years it has become common to offer an earlier and more than one postpartum visit to a midwife in primary care. Also, home visits by a midwife and/or telephone support are common in some regions. In the Stockholm region, 80% of women visited the midwifery clinic postpartum in 2020, on average 8.1 weeks after birth. Nationally, most mothers make a postpartum visits 9–10 weeks after birth (Swedish National Board of Health and Welfare, 2022b).

To summarise, despite previous research and knowledge about maternal problems related to childbirth and the use of emergency care, there is a lack of research on new mothers' experiences of support from midwives linked to their perceived problems and the need to seek emergency care for their problems.

The purpose of the present study was to investigate:

1) Women's self-rated health, perceived problems and complications during the first four weeks after childbirth,
2) Women's self-rated reasons for, and the frequency of, emergency department visits during the first four weeks after childbirth,
3) Whether there is any associations between seeking emergency care and sociodemographic and obstetric factors, and finally
4) Women's experiences of received support from the midwifery clinic during the first four weeks after childbirth.

Methods

Design

A study specific survey with a cross-sectional design was used and conducted at midwifery clinics in Stockholm, Sweden.

Setting

Region Stockholm has 64 midwifery clinics, varying in size determined by the number of registered pregnant women and number of employed midwives. According to the annual report for the midwifery clinics in Stockholm, the number of births in the region amounted to 28,788 in 2020. Almost 80 % of new mothers visit their midwifery clinic on at least one occasion within the first three months after childbirth.

Data collection

Managers at the 64 midwifery clinics were contacted via email or phone and offered participation in the study and 35 clinics, employing 268 out of 400 midwives, agreed to take part. The clinics were equally distributed among high- and low-income areas within the region. All mothers who had given birth within the last three months and visited one of these clinics between 12 October and 11 December 2020 (during the Covid-19 pandemic) who were able to read and write Swedish, English, Arabic or Somali were eligible to participate. Those who agreed to take part received written information and an anonymous survey from their midwife and they were asked to complete it at the midwifery clinic after their regular visit. Respondents were informed that it was voluntary to participate and that returning the questionnaire was considered as providing informed consent. Pregnant women under the age of 18 were excluded from participation and not informed about the study. The surveys were translated into the different languages by a translation

agency. Following the translation, the surveys were validated by licensed healthcare professionals proficient in Arabic, Somali, and English.

Measures

The survey contained questions about socio-demographic variables: age (of mother and child), first child (YES/NO), living situation, level of education, employment status and country of birth. The obstetric variables were type of delivery, gestational week at birth, neonatal care, hospital time after birth and breastfeeding status. To assess self-rated health (SRH), the SF-36 instrument was utilized, which, according to The Lancet, is one of the most commonly used validated tools for measuring health (Fayers and Sprangers, 2002). The question: *"In general, How would you say your health is?"* has five fixed response options: Very good, Good, Okay, Poor, Very poor. The question about perceived health problems had 16 fixed answer options: Breast or nipple pain, Backache, Hemorrhoids, Problems related to breastfeeding, Pain from vaginal tear or incision, Constipation, Anxiety, worry or anguish, Bleeding, Stomachache, Flatulence, Urinary incontinence, Pain when urinating, Pain due to caesarean section, Fever, Pain during sex, Bowel incontinence, and the option 'Other' for which participants could write their own answer if perceived problems were not found on the multiple-choice list. The participants could choose more than one answer.

The number of emergency department visits was measured by the question: *"Have you sought any kind of emergency treatment for yourself during the first four weeks after giving birth?"* (YES/NO). Women were able to fill in frequency of emergency visits, what type of emergency treatment they sought and whether they felt that the visit was related to their recent childbirth. The question about reasons for emergency care had the same 16 fixed-answer options as the question about perceived health problems.

The support received from the midwife at the midwifery clinic after childbirth was investigated by a YES/NO question with additional questions. For those who answered NO, the reason for lack of support was explored through a question with four options: I did not want any support, I did not need support, I had wanted support but did not know who to contact, I had wanted support but was not contacted. Those who had answered YES to the question about support were asked to answer the following five additional questions: *"How did you experience the opportunity to get in touch with your midwifery clinic by phone in the first four weeks after giving birth?"* (Very good, good, reasonably, bad, very bad). *"Did you receive sufficient information at your midwifery clinic about how to deal with your problem(s)?"* (Yes completely, partially, no, I did not need any information). *"Did the midwife explain what you should do if the problems or symptoms continued, got worse or came back?"* (Yes completely, partially, no, not applicable). *"Did you get information about where to go if you needed further help or had more questions after the visit to your midwife?"* (Yes completely, partially, no, not applicable). *"Overall, how do you rate the support you received from your midwifery clinic in the first four weeks after childbirth?"* (Very good, good, reasonably, bad, very bad).

Women's experiences of not receiving support from the midwifery clinic during the first four weeks after childbirth was investigated using a open-ended question where the participants were able to write their own thoughts and wishes: *"If you did not receive the support you wanted from your midwifery clinic, what kind of support would you have liked?"*

Analysis

Data processing and analysis were performed using Statistical Package for the Social Sciences (SPSS version 26.0, IBM) and R (R version 4.1.0, RStudio Team). Descriptive statistics were used to describe women's self-rated health and experience of support, and to describe the two groups (women who sought emergency care within the first 4 weeks after childbirth versus those who did not). Data are presented as means (m), standard deviations (sd), medians (md) and interquartile ranges (iqr). P-value was added to show whether the groups differed. To compare groups, *t*-tests were used for continuous variables and for the categorical variables Fisher's exact tests were used. To investigate whether there was a relationship between socio-demographic and/or obstetric factors, comparing women who sought emergency care with those who did not, logistic regression analyses were performed. The variables that had p-values $<= 0.2$ in the unadjusted (crude) models were included in an adjusted multiple logistic regression model. The high significance level was chosen to ensure the model included all relevant variables, as suggested in Hosmer et al. (Hosmer Jr, Lemeshow, and Sturdivant, 2013). The reference categories for the categorical variables included in the models were chosen such that the category with the largest number of women was chosen as the reference. Results are presented as odds ratios with corresponding 95 % confidence intervals and p-values. A p-value of <0.05 was considered to be significant.

The answers to the open-ended question: *"If you did not receive the support you wanted from your midwifery clinic, what kind of support would you have liked?"* is presented descriptively based on the themes that recurred in the women's answers.

Ethical consideration

The study has been approved by the Swedish Ethics Review Authority (2019–06091) and was carried out in accordance with the principles outlined in the Declaration of Helsinki.

Findings

A total of 586 mothers responded. The study population consisted of 580 women after 6 incomplete surveys or duplicates were removed. Responses in languages other than Swedish were distributed as follows: 17 in English, 10 in Arabic, and one in Somali.

The sociodemographic factors, health outcomes and obstetric factors of the participants, described based on those who sought emergency care and those who did not seek emergency care, as well as the total population, are presented in Table 1. Self-rated health status was the only variable where there was a statistical difference between the groups (p-value <0.001) when examining the descriptive data.

Women's self-rated health and perceived problems and complications during the first four weeks after childbirth

Most women stated their status was "Very good" or "Good"; when combined, these groups made up 92.4 % of the sample. Despite this, almost all women stated that they had experienced one or more health problems since giving birth. The fixed-answer options and the percentage (and number) who answered YES to the question: *"Have you had any of the following problems on more than a single occasion since giving birth?"* were distributed according to Table 2.

The option "other" received 51 responses; some were similar, and some could be mapped into the preselected categories. When the answers had been mapped and categorised, 25 "other" responses remained: anal fissures, vaginal problems, pelvic pain, depression, milk engorgement, headache, shoulder pain, high blood pressure, infection of uterus, inflammation (unspecified), carpal tunnel syndrome, general body pain, vaginal discharge, urination problems, nerve damage in leg, pain in leg, pelvic floor pain, pain in wrists, groin pain, neck pain, itchy face, pain when passing stool/flatulence, Post Traumatic Stress Disorder, memory and concentration disorders and urinary tract infection.

Table 1
Sociodemographic background characteristics, health outcomes and obstetric factors related to study participants ($N = 574$) based on those who answered NO ($n = 482$) or YES ($n = 92$) to the question whether they sought emergency care within the first 4 weeks after childbirth.

	Have not sought emergency care ($N = 482$)	Have sought emergency care ($N = 92$)	Overall ($N = 580$)	P -value
Age				
Mean (SD)	32.3 (4.33)	33.3 (4.88)	32.4 (4.44)	0.0669
Median [Min, Max]	32.0 [19.0, 46.0]	33.5 [19.0, 45.0]	32.0 [19.0, 46.0]	
Age category				
18–24 Years of age	14 (2.9 %)	3 (3.3 %)	18 (3.1 %)	
25–29 Years of age	108 (22.4 %)	18 (19.6 %)	127 (21.9 %)	**0.0224**
30–34 Years of age	221 (45.9 %)	30 (32.6 %)	255 (44.0 %)	
35+ Years of age	139 (28.8 %)	41 (44.6 %)	180 (31.0 %)	
First child				
Yes	271 (56.2 %)	45 (48.9 %)	320 (55.2 %)	
No	211 (43.8 %)	46 (50.0 %)	259 (44.7 %)	0.252
Missing	0 (0 %)	1 (1.1 %)	1 (0.2 %)	
Living Situation				
Alone	4 (0.8 %)	4 (4.3 %)	8 (1.4 %)	
Children	7 (1.5 %)	0 (0 %)	7 (1.2 %)	0.11
Other adults	1 (0.2 %)	0 (0 %)	1 (0.2 %)	
Parents/Siblings	2 (0.4 %)	0 (0 %)	2 (0.3 %)	
Partner	464 (96.3 %)	88 (95.7 %)	558 (96.2 %)	
Missing	4 (0.8 %)	0 (0 %)	4 (0.7 %)	
Education				
Secondary School	100 (20.7 %)	19 (20.7 %)	120 (20.7 %)	
Primary school	12 (2.5 %)	4 (4.3 %)	17 (2.9 %)	0.56
University	368 (76.3 %)	69 (75.0 %)	441 (76.0 %)	
Missing	2 (0.4 %)	0 (0 %)	2 (0.3 %)	
Employment				
Employed	426 (88.4 %)	80 (87.0 %)	511 (88.1 %)	
Student	14 (2.9 %)	4 (4.3 %)	18 (3.1 %)	
Unemployed	30 (6.2 %)	4 (4.3 %)	35 (6.0 %)	0.333
Other	9 (1.9 %)	4 (4.3 %)	13 (2.2 %)	
Missing	3 (0.6 %)	0 (0 %)	3 (0.5 %)	
Country Origin				
Europe	25 (5.2 %)	9 (9.8 %)	35 (6.0 %)	
Sweden	396 (82.2 %)	74 (80.4 %)	475 (81.9 %)	0.194
Outside Europe	61 (12.7 %)	9 (9.8 %)	70 (12.1 %)	
Child birth				
Acute caesarean section	41 (8.5 %)	10 (10.9 %)	51 (8.8 %)	
Instrumental childbirth	24 (5.0 %)	9 (9.8 %)	34 (5.9 %)	0.245
Planned Csection	41 (8.5 %)	6 (6.5 %)	47 (8.1 %)	
Vaginal birth	374 (77.6 %)	67 (72.8 %)	446 (76.9 %)	
Missing	2 (0.4 %)	0 (0 %)	2 (0.3 %)	
Gestationalweek				
Mean (SD)	39.6 (1.74)	39.8 (1.60)	39.6 (2.06)	
Median [Min, Max]	40.0 [30.0, 43.0]	40.0 [34.0, 42.0]	40.0 [12.0, 43.0]	0.319
Missing	5 (1.0 %)	0 (0 %)	5 (0.9 %)	
Neonatal care				
Yes	30 (6.2 %)	6 (6.5 %)	36 (6.2 %)	
No	452 (93.8 %)	86 (93.5 %)	543 (93.6 %)	0.818
Missing	0 (0 %)	0 (0 %)	1 (0.2 %)	
Hospital time after birth				
<24 h	112 (23.2 %)	16 (17.4 %)	129 (22.2 %)	
> 5 days	36 (7.5 %)	6 (6.5 %)	42 (7.2 %)	0.622
1–2 days	235 (48.8 %)	50 (54.3 %)	288 (49.7 %)	
3–4 days	98 (20.3 %)	20 (21.7 %)	120 (20.7 %)	
Missing	1 (0.2 %)	0 (0 %)	1 (0.2 %)	
Breastfeeding				
No	21 (4.4 %)	3 (3.3 %)	24 (4.1 %)	
Not anymore	33 (6.8 %)	8 (8.7 %)	43 (7.4 %)	0.848
Yes	346 (71.8 %)	64 (69.6 %)	414 (71.4 %)	
Yes, partly	81 (16.8 %)	17 (18.5 %)	98 (16.9 %)	
Missing	1 (0.2 %)	0 (0 %)	1 (0.2 %)	
Health status				
Very good	229 (47.5 %)	37 (40.2 %)	268 (46.2 %)	
Good	228 (47.3 %)	37 (40.2 %)	268 (46.2 %)	**<0.001**
Fairly good	21 (4.4 %)	12 (13.0 %)	33 (5.7 %)	
Bad	3 (0.6 %)	4 (4.3 %)	7 (1.2 %)	
Missing	1 (0.2 %)	2 (2.2 %)	4 (0.7 %)	
Support BMM				
Yes	307 (63.7 %)	56 (60.9 %)	368 (63.4 %)	0.638
No	175 (36.3 %)	36 (39.1 %)	212 (36.6 %)	

Table 2
Answers to the question: "have you had any of the following problems on more than a single occasion since giving birth?".

Fixed answer options:	Percentage and number:
Breast or nipple pain	52.1 % ($n = 302$)
Backache	39.5 % ($n = 229$)
Hemorrhoids	37.2 % ($n = 216$)
Problems related to breastfeeding	32.6 % ($n = 189$)
Pain from vaginal tear or incision	31.2 % ($n = 181$)
Constipation	30.7 % ($n = 178$)
Anxiety, worry or anguish	30.3 % ($n = 176$)
Bleeding	26.6 % ($n = 154$)
Stomachache	20 % ($n = 116$)
Flatulence	17.6 % ($n = 102$)
Urinary incontinence	16.2 % ($n = 94$)
Pain when urinating	13.8 % ($n = 80$)
Pain due to caesarean section	11 % ($n = 64$)
Fever	9.5 % ($n = 55$)
Pain during sex	5.7 % ($n = 33$)
Bowel incontinence	3.3 % ($n = 19$)
Other	4.3 % ($n = 25$)

The frequency of, and the reason for emergency department visits during the first four weeks after childbirth

A total of 92 women (16 %) stated that they had sought emergency care within the first four weeks after giving birth. On average, they had sought emergency care 1.33 times (SD 0.818). The most common reason was seeking care at the gynecological emergency unit, followed by the general emergency department. Only three mothers had sought care at the local health centre, while one mother had sought emergency psychiatric care. Three mothers responded that their emergency department visit was unrelated to having recently given birth. The answers to the question *"For what reason did you seek emergency medical care?"* were distributed as follows, with the first six being the most frequent responses: Stomachache: 25 % ($n = 23$), Fever: 24 % ($n = 22$), Bleeding: 17.4 % ($n = 16$), Pain from vaginal tear or incision: 13 % ($n = 12$), Breast or nipple pain: 12 % ($n = 11$) and Pain when urinating: 9.8 % ($n = 9$) followed by: Constipation, Hemorrhoids, Problems related to breastfeeding, Backache, Worry or anguish, Urinary incontinence, and Pain due to caesarean section. Several mothers stated more than one reason and the response option "other" generated 25 responses, of which the following 16 remained when categories with similar meanings was merged: general malaise, foul-smelling rejection, hematoma, anal fissure, loosening stitches, headache, high blood pressure, placental residuals, suspected thrombosis, preeclampsia, mental illness, coccygeal pain, body aches, left compress in the vagina, joint pain and various infections (in the uterus, in the caesarean wound, in the rupture, influenza, urinary tract infections and breast infections).

Table 3
Adjusted multiple logistic regression model with emergency medical care as the outcome variable and the explanatory variables: age, self-rated health, and country of birth, first child (yes/no) and time spent in hospital after childbirth ($n = 92$).

Characteristic	OR[1]	95 % CI[1]	p-value
Age category			
30–34 Years of age	—	—	
18–24 Years of age	1.64	0.34, 5.89	0.5
25–29 Years of age	1.22	0.62, 2.34	0.6
35+ Years of age	2.06	1.19, 3.61	**0.011**
Health status			
Very good	—	—	
Good	1.03	0.62, 1.72	0.9
Poor	3.78	1.60, 8.73	**0.002**
Very poor	10.5	1.97, 62.5	**0.006**
First child			
Yes	—	—	
No	1.13	0.66, 1.95	0.7
Country of Origin			
Sweden	—	—	
Europe	2.06	0.81, 4.74	0.10
Outside Europe	0.67	0.28, 1.41	0.3
Time spent at hospital after childbirth			
1–2 days	—	—	
< 24 h	0.58	0.29, 1.11	0.11
> 5 days	0.51	0.16, 1.35	0.2
3–4 days	0.84	0.44, 1.53	0.6

[1] OR = Odds Ratio, CI = Confidence Interval.

Association between use of emergency department care and sociodemographic and obstetric factors

When analysing potential associations between use of emergency care (versus not having sought emergency care) and various socio- demographic and obstetric background variables in the unadjusted logistic regression models, we found p-values below or equal to 0.2 for the variables age, self-rated health, country of birth, first child (yes/no) and time spent in hospital after childbirth. These variables were then used in an adjusted multiple logistic regression model to investigate whether a relationship could be seen between these variables and the risk of seeking emergency care. In the adjusted model, there was a significant higher odds ratio for the oldest age group (age $\geq$ 35, OR= 2.06) for seeking emergency care compared to women aged 30–34 years. Further, poorer self-rated health increased the odds of having sought emergency care (for *poor* OR=3.78 or *very poor* OR=10.5) Table 3.

Experiences of received support

The women's answers to the question: *"Have you received support from your midwife during the first four weeks after giving birth?"* were distributed as follows: YES 63.4 % ($n = 368$) and NO 36.6 % ($n = 212$). For those who answered NO to whether or not they received the support they needed, the reasons were distributed as follows: I did not want any support*:* $n = 29$*,* I did not need support*:* $n = 153$*,* I wanted support but

Table 4
Women's experiences of received support from the midwifery clinic during the first four weeks after childbirth ($n = 368$).

"How did you experience the opportunity to get in touch with your midwifery clinic by phone in the first four weeks after giving birth?"				
Very good	Good	Reasonably	Bad – or very bad	No contact by phone
56.6 % ($n = 209$)	**24.9 % ($n = 92$)**	**5.4 % ($n = 20$)**	**0.8 % ($n = 3$)**	**12.2 % ($n = 45$)**
"Did you receive sufficient information at your midwifery clinic about how to deal with your problem(s)?"				
Yes, completely	Partially	No	I didn't need any information	
59.1 % ($n = 207$)	**18.9 % ($n = 66$)**	**1.7 % ($n = 6$)**	**20.3 % ($n = 71$)**	
"Did the midwife explain what you should do if the problems or symptoms continued, got worse or came back?"				
Yes, completely	Partially	No	Not applicable	
62.4 % ($n = 216$)	**12.1 % ($n = 42$)**	**2.3 % ($n = 8$)**	**23.1 % ($n = 80$)**	
"Did you get information about where to go if you needed further help or had more questions after the visit to your midwife?"				
Yes, completely	Partially	No	Not applicable	
65.7 % ($n = 226$)	**8.4 % ($n = 29$)**	**5.8 % ($n = 20$)**	**20.1 % ($n = 69$)**	
"Overall, how do you rate the support you received from your midwifery clinic in the first four weeks after childbirth?"				
Very good	Good	Reasonably	Bad	Very ***bad*** **None**
59.8 % ($n = 201$)	**34.8 % ($n = 117$)**	**4.5 % ($n = 15$)**	**0.9 % ($n = 3$)**	

did not know whom to contact: $n = 17$ and, I wanted support but was not contacted: $n = 29$.

The mothers who had received support from their midwifery clinic were mostly satisfied and rated their experiences by answering questions according to Table 4.

The gathering of the answers from 49 women who have responded to the open question: "*If you did not receive the support you wanted, what kind of support would you have liked?*" showed that more than half of the comments ($n = 25$) included requests for earlier support or earlier contact in various ways. This is illustrated by the following quote:

- *"I think that a visit to the midwifery clinic should be booked one week after childbirth to capture the mother's well-being"* (new mother, 38 years of age, third child).

The answers about earlier contact also included wishes for better accessibility:

- *" In general, there must be better follow-up care for mothers, more than just one follow-up visit after eight weeks must be offered, you must be allowed to come earlier, and the midwife must be more accessible"* (new mother, 33 years of age, third child)
- *"The best would have been a home visit but otherwise a conversation or a call"* (new mother, 31 years of age, first child).

The remaining answers to the open-ended responses were distributed between wishes for better continuity, better support at the maternity ward, advice about breastfeeding and the wish for a follow-up plan to have been made during pregnancy:

- *"I would have liked practical help with breastfeeding but also a calming reassurance that everything would be fine"* (new mother, 32 years of age, first child)
- *"More information and support the first week - everyone should be allowed to stay at the maternity ward for 5 days"* (new mother, 28 years of age, first child)
- *"That someone called me and made an appointment and asked how I was doing"* (new mother, 31 years of age, second child).

Nine comments were excluded from the analysis. Six comments confirmed actual satisfaction with the support or not wanting any support, and three comments were excluded because they were not possible to read.

Discussion

In the present cross-sectional study, we investigated new mothers' perceived problems after childbirth and sociodemographic and obstetric characteristics in relation to their health and emergency care-seeking behavior. We also studied the support, and perception of support, received from midwives.

We found that a majority of new mothers experienced a range of different mental and physical symptoms and complications during the first four weeks after giving birth. The majority of complaints were related to various types of pain, consistent with other studies showing that persistent pain after childbirth is common and could be associated with the mode of delivery, as well as with a history of pain during pregnancy (Komatsu, Ando, and Flood, 2020; Tan and Sng, 2022). However, in this study, we found no explanation linked to the mode of delivery, as the proportion of cesarean sections and instrumental deliveries does not differ from the average frequency in the region, nor was the mode of delivery linked to frequency of emergency medical care. Despite the range of reported complaints, most women in this study described their health as good or very good. We know from previous studies that there are several factors associated with positive outcomes and mothers' wellbeing after childbirth, such as perceived health as well as access to midwife care postnatally and receiving timely information (Henderson and Redshaw, 2013).

Many of the symptoms that women describe were conditions that could be considered to be normal after childbirth. However, in our study, 16 % of new mothers sought emergency care within the first four weeks after giving birth, majority stating that their visit was related to having recently given birth. Previous research shows that many of the conditions experienced after childbirth are significant enough for women to seek advice and support, as well as emergency department care for their discomfort and complications (Matenchuk et al., 2022; Yonemoto et al., 2021). The reasons for emergency department visits corresponded to problems commonly reported postpartum, the most common reasons for emergency care being abdominal pain, fever, bleeding, and pain from vaginal tear or cesarean section. In addition, care was also sought for mental conditions such as anguish or worry. All these reasons are consistent with previous studies (Mitchell et al., 2023; Patel et al., 2020). Previous studies have shown different results regarding association between age and the risk of seeking emergency care. One study from the US indicated that it was more common for young women to seek emergency healthcare after childbirth (Patel et al., 2020), whereas another study found this to be less likely among young women (Sheen et al., 2019). In this study, we found that older mothers ($\geq$35 years) had an increased risk of seeking emergency, as did those who assessed their health as poor/very poor. To ensure connections related to age and risk of seeking emergency medical care, more comprehensive studies are required.

Emergency department visits by 16 % of new mothers is a high number compared to other studies, both nationally (Hundal et al., 2021; Mitchell et al., 2023) as well as in the Swedish context (Barimani et al., 2014; Vikström et al., 2018). Of note, this study was conducted during the Covid-19 pandemic where existing healthcare systems were put under immense pressure, posing significant challenges worldwide also disrupting perinatal care (Vazquez-Vazquez, Dib, Rougeaux, Wells, and Fewtrell, 2021) which may have affected both new mothers' perceptions of support and their care-seeking behavior (Abdollahpour and Khadivzadeh, 2022). Sweden did not implement national lockdowns to reduce the spread of Covid-19. Instead, authorities issued stringent recommendations, including practicing social distancing, and staying home when experiencing Covid-19. Pregnant women were expected to make their pregnancy-related visits alone and partners were not allowed to stay at the maternity ward after childbirth (Claeson and Hanson, 2021). A Swedish study shows that half of new mothers experienced a shortcoming in the quality of maternal care in connection with covid-19 (Zaigham et al., 2022).

The implemented changes and restrictions according to Covid-19 pandemic and the potential influence of the results of this study is unknown as we did not collected information specifically related to Covid-19. Other studies have shown that women were affected by the Covid-19 restrictions surrounding childbirth, impacting both their mental and physical well-being. They experienced significant frustration and were afraid of being left alone (Irvine, Chisnall, and Vindrola-Padros, 2022). It is known from other studies, conducted before the pandemic, that the short duration of postpartum care in hospital and the lack of follow-up and support, on the maternity ward and after hospital discharge, could impact women's health and well-being, as well as the transition to motherhood (Thorstensson, Andersson, Israelsson, Ekström, and Hertfelt Wahn, 2016; Walker et al., 2019). We have not investigated whether postpartum hospital stays were affected by the pandemic, nor have we explored whether shorter hospital stays influenced women's likelihood to seek emergency care. In a retrospective cohort study from the US including 1358 births, it was found that expedited postpartum discharge was more common in 2020 than in 2019 but it was not associated with increased risk for postpartum readmission or acute postpartum care utilization during the Covid-19 pandemic compared to the previous year (Panzer, Reed-Weston, Friedman, Goffman, and Wen, 2022). In this study, we did not specifically focus on the potential effects of the

pandemic on women's responses regarding their health and care-seeking behaviour. However, we can state that none of the free text responses addressed Covid-19 as a reason for seeking care, on the other side, the reason "infection" could potentially mean infection caused by Covid-19.

In Sweden, nearly all pregnant women visit a midwife on multiple occasions during pregnancy. However, the postpartum care that new mothers are offered varies depending on place of residence. Attention has been drawn to shortcomings in postpartum care and national recommendations state that all new mothers should be offered early primary care support based on individual needs (Swedish National Board of Health and Welfare, 2022a). Results from this study show that women wish and appreciate early support from their midwifery clinic. During their childbearing period, women undergo the greatest psychological and physiological change of their lives. Therefore, the gap between the immediate postpartum care at the hospital and the variable follow-up offered in primary health care, will likely affect both women's need for support and their need for emergency health care (Patel et al., 2020).

A majority of those women who had not received the support they wanted expressed a wish for earlier contact (by phone or visits at the midwifery clinic or at home) and a follow-up plan made already during pregnancy. There were also requests for better availability and continuity, as well as better support regarding breastfeeding. These findings are consistent with previous research showing that potential gaps in access and quality of care need to be addressed through appropriate transitions to maternal health services in primary care during the postpartum period to ensure equitable care for all (Matenchuk et al., 2022). New mothers experience reduced stress, increased resilience, improved mothering skills and have more capability when having a trusting relationship with the midwife (Schwind et al., 2023). The findings of the current study are also coherent with the intentions of the previously described QMNC-framework from The Lancets series on midwifery, describing that the midwife plays a crucial role in enhancing women's health and wellbeing (Renfrew et al., 2014). The importance of ensuring that services are readily available, easily accessible, and of high quality is emphasised as well as the need for continuity of care and sufficient resources, in line with the intentions in the QMNC-framework, describing that midwives are supposed to provide care for all childbearing women and practice first line management for women with complications (Renfrew et al., 2014).

Breastfeeding and general well-being among new mothers are enhanced by the support, regardless whether the support is provided at the midwifery clinic or a home visit or by phone, and may be associated with fewer preventable readmissions and emergency room visits (Saldanha et al., 2023). During the covid-19 pandemic, digital care meetings were implemented frequently in maternity care as an important supplement to supporting new mothers (Hertle, Wende, Schumacher, and Bauer, 2022). Digital care was not highlighted in this study but should be born in mind as an important complement to physical visits. A systematic review that included 16 randomised trials with data from 12, 080 women evaluated the impact of home-visiting schedules by health professionals in the early postpartum period, concluded that with more home visits, healthcare consumption may be decreased, and exclusive breastfeeding at six weeks may increase (Cibralic et al., 2023). Another systematic review of interventions aimed at preventing depression postpartum found that some interventions appeared to be more beneficial than others, including midwifery-led interventions of postnatal care, person-centered approaches, and parenting preparation education (Morrell et al., 2016). Women who have a history of frequent emergency department visits before pregnancy are more likely to persist accessing the emergency department during the postpartum period (Williams, De La Guerra, and Borgida, 2019).

Conclusion

Understanding the complexity of women's perceived health problems and well-being in the period around childbirth as well as risk factors for maternal emergency department visits, is critical because interventions and care plans aimed at preparing pregnant women for the postpartum period are an important part of the midwife's preventive work during pregnancy. It is noteworthy that 16 % of mothers seek emergency care in the first weeks after birth, and that perceived support from the midwifery clinic does not differ significantly between those who seek care and those who do not. Midwives can be a resource for new mothers in the early postpartum period by identifying problems and complications, providing support and educating new mothers on how to care for themselves and manage problems in the early postpartum period. This study has practical implications for midwifery practice and policy. There is a need for tailored postnatal support strategies so that midwives potentially are able to mitigate emergency department visits. It cannot be excluded that the relatively high frequency of emergency visits was related to the ongoing covid-19 pandemic when the current study was conducted. Further studies should look at whether the high number of emergency visits among new mothers varies throughout Sweden, and whether this may be a result of reduced length of hospital stay after childbirth or related to the degree of midwifery support postpartum.

Strengths and limitations

A strength of the study lies in the versatile data collection method. Surveys were conducted at both smaller and larger midwifery clinics located across different socio-demographic areas in the region. We made the surveys available in multiple languages, which facilitated participation of women who do not usually participate in surveys. The choice of midwifery clinics was strategic because women usually have a good relationship with their midwife and midwifery clinics are generally perceived to be safe environments. A majority of new mothers visit the clinic on at least one occasion in the first months after their pregnancy.

However, there are limitations to consider. We lack information regarding potential impact of the Covid-19 virus on maternal and infant health and health seeking behaviour, which can be considered a limitation. A significant limitation is the absence of a dropout analysis, which we were unable to conduct due to our chosen cross-sectional design. Consequently, we lack information on how many eligible mothers chose not to respond, which may affect the generalisability of our findings. The survey distribution method, relying on midwives without tracking the exact number of questionnaires distributed, was selected to minimise disruption to the clinical work of midwives. Despite this limitation, we believe we have successfully reached an adequate number of women based on our data collection efforts.

Another factor affecting generalisability is the educational and demographic composition of our study participants. Our sample had a higher proportion of highly educated women compared with the general female population in Region Stockholm. Additionally, the percentage of foreign-born women responding to our survey (18 %) was slightly lower than the regional average (26 %). The high proportion of well-educated women in the study is unsurprising, given that nearly all post-secondary education programs are located at universities and colleges in Sweden. Moreover, educational attainment is generally high in the Stockholm region, particularly among women. The lower participation of foreign-born women in the study compared to their representation in the region can only be speculated upon; however, we believe that we reached more foreign-born women than is typical in survey research. This may be attributed to the availability of the survey in multiple languages and the conduct of the study in midwifery clinics, which are commonly perceived as safe environments by women. To further include more foreign-born or lower-educated women in future studies, researchers could consider controlling more rigorously for socioeconomic status and employing alternative data collection methods such as interviews or focus groups.

CRediT authorship contribution statement

Ragnhild Eikemo: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Mia Barimani:** Conceptualization, Formal analysis, Project administration, Supervision, Writing – review & editing. **Viola Nyman:** Formal analysis, Writing – review & editing. **Wibke Jonas:** Formal analysis, Methodology, Writing – review & editing. **Anna Vikström:** Conceptualization, Formal analysis, Methodology, Supervision, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no conflicts of interest regarding competing financial interests or personal relationships that could have influenced the work reported in this paper.

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