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# Care provided by midwives and the unmet needs of pregnant and postpartum women: A qualitative study of Japanese mothers

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ABSTRACT

*Objectives:* We aimed to clarify the content of care provided by midwives working in hospitals and clinics in Japan and the unmet needs in midwifery care from mothers' perspectives.
*Design:* This study employed a qualitative approach through semi-structured interviews.
*Setting:* Fifteen Japanese women, whose youngest singleton children were aged 12–18 months, were asked to recall their experiences with midwives, from pregnancy through the first postpartum year. Verbatim records were analyzed using thematic analysis.
*Results:* Seven themes regarding the care provided by midwives were generated: confirmation of physical condition, maintenance and promotion of perinatal physiological process, support for better preparation for childbirth, assistance in labour and childbirth, support for a new life with a baby at home, support for the family, and care for comfort and confidence as a mother. Unmet needs were identified in all themes, except for 'confirmation of physical condition' and 'support for the family'. Ten subthemes, under the five themes of unmet needs, were integrated into three categories: midwives' responses to potential concerns, lack of continuity of care, and lack of personalised care.
*Key conclusions and implications for practice:* Midwives in hospitals and clinics in Japan mainly provided care from pregnancy to one-month postpartum, in line with global core competencies. However, they could respond more effectively to the potential concerns of women, and provide continuous, personalised care more sufficiently. Improving working environments for midwives and collaborating with postpartum public health services are key to addressing these unmet needs of women, leading to women-centred care.

## 1. Introduction

Perinatal outcomes in Japan are among the best worldwide, with a maternal mortality ratio of five deaths per 100,000 live births in 2017, and one neonatal and two infant deaths per 1000 live births in 2020 [1]. However, some data imply that reproductive-aged women in Japan may be unhappy with their childbirth-related experiences. Approximately 11% of mothers experience postpartum depression within the first postnatal year [2], and the suicide rate among women from pregnancy to one year postpartum, for example

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in the Tokyo metropolitan area for 10 years between 2005 and 2014, was 8.7 per 100,000 live births [3]. Moreover, the total fertility rate has remained below 1.5 for 25 years since 1995 (1.33 in 2020), and the number of live births has declined steadily, reaching below 1 million (840,835 in 2020) [4]. Japanese married couples tended not to have their ideal number of children for many years. The prospective physical and mental burden of child-rearing was among the reasons why couples had fewer children than they wanted [5], implying a lack of support for parents in various aspects. Women's experiences from pregnancy to postpartum could strongly impact their subsequent well-being [6–8]. Globally, midwives are recognized for supporting women, new-borns, infants, and their families [9]. Therefore, the care provided by midwives could impact women's childbirth-related experiences. However, Doering et al. pointed out that women's experiences with midwives in institutionalised and fragmented maternity care settings in Japan were often negative [10], and some women's voices were unheard or lost [11]. These studies focused on the relationship between women and midwives; however, the actual content of midwifery care was not analyzed in detail.

Although midwives are part of the global healthcare system, influential factors such as education and regulation vary by nation [12, 13]. Thus, understanding midwives' actual practices in each country is indispensable. In 1975, in Japan, 91.6% of live births were handled in hospitals ($\geq$20 beds) and clinics ($\leq$19 beds), and this rate is above 99% at present [14]. Hence, the practice of midwives in hospitals and clinics, consisting of 85.4% of all midwives in practice [15], creates the common perception of the scope of midwives working in Japan. Antenatal and postnatal check-ups are usually obstetrician-led, and all childbirths should be attended by them regardless of medical intervention. Midwives are more likely to assist obstetricians in consultation and treatment, conduct physical assessments for the normal process of labour, and support mothers with health education, breastfeeding, childcare, and mental care. They have no authority over medical interventions such as prescribing, episiotomy, and suturing.

Japanese midwives are required to be nurses because midwifery education is an advanced nursing programme. Because of the closure or scaling-down of maternity services in many facilities owing to the shortage and maldistribution of obstetricians, and declining birth rates [16], midwives can be allocated to other wards. A survey by the Japanese Nursing Association (JNA) in 2020 reported that 67.8% of maternity wards receive a mixture of patients [17] to increase the turnover rate by filling empty beds. Moreover, midwives comprise only 2.9% of registered nursing professionals in practice (among public health nurses, midwives, and nurses) [15]. This small number of midwives means nurses are also assigned to maternity services, particularly in larger hospitals. Both nurses and midwives belong to the nursing department, work in shifts, wear the same uniform, and are relocated. Given the operational burden on obstetricians, midwives seek professional autonomy by setting up 'in-hospital midwife-led care (at labour and childbirth) [*innai-josan*]' and an 'in-hospital midwifery clinic (for antenatal and postnatal consultation) [*josanshi-gairai*]' for low-risk women [18]. The sample survey in 2020 indicated that 12% of the facilities introduced 'in-hospital midwife-led care' and 37.5% 'in-hospital midwifery clinic' [17].

Under these circumstances, it might be difficult for women to understand the specific nature of midwifery. While standard practices that midwives perform from pregnancy to postpartum are shared in competency guides and textbooks, it is uncertain whether midwives in hospitals and clinics can demonstrate their full expertise. The actual care women receive from midwives can only be extracted from their experiences. Studies regarding maternity care needs through mothers' experiences have been conducted in other countries. According to the meta-syntheses of qualitative studies of women's views and experiences on maternal and new-born services by Renfrew et al. [19], women wanted to receive information and education as essential practice, understand the organization of care, be treated well and respected, by skilled professionals. Based on these findings, a framework for quality maternal and new-born care from the women's perspective and experience was developed with five components: practice categories, organisation of care, values, philosophy and care providers. Previous studies that have evaluated midwifery care in Japan, via women's levels of satisfaction or their perceptions, were based on care lists that were presented by midwifery researchers, not by mothers themselves [20,21]. Therefore, this study aimed to clarify the content of care provided by midwives working in hospitals and clinics from pregnancy throughout first postpartum year from the mothers' perspective. We also aimed to identify the content of care that mothers hoped to receive but were not provided by midwives (hereafter referred to as '*unmet needs in midwifery care*') in the same period. Based on the study findings, particularly the unmet needs in midwifery care, we explored the challenges faced by Japanese midwives and the maternity care system to facilitate women-centred care with reference to Renfrew et al.'s framework [19].

## 2. Methods

### 2.1. Approach and rationale

This study adopted a narrative approach to capture the content of care provided by midwives, along with the unmet needs in midwifery care from the mothers' perspectives, using oral testimonies. Narratives, as interpretive accounts of past experiences, are suitable for expressing rarely visible details [22].

### 2.2. Researcher characteristics

All four researchers were female registered midwives certified in Japan and working in a research institution full-time or on a part-time basis, with several years of clinical experience, at least a master's degree, and some training and experience in qualitative research.

### 2.3. Participants

Participants were Japanese mothers aged ≥20 years, living in Kyoto or neighbouring prefectures, who had term childbirths (between 37 and 41 weeks of gestation) in hospitals or clinics, and whose last-born singleton children were 12–18 months of age, with no congenital abnormalities. Babies with temporary observation and/or treatment with a good prognosis in the neonatal intensive care unit (NICU) were included. Mothers with mental illnesses, babies with apparent growth and developmental problems, and those who were acquainted with the researchers were excluded.

We decided to listen to mothers' experiences with care provided by midwives up to one year postpartum due to midwives' significant role in breastfeeding care and support in Japan. A literature review showed that the average lactation period of Japanese mothers was 9.9 to 16.5 months [23], and a survey of mothers 18 months after childbirth indicated that midwives were the most reliable health professionals (42.4%) in terms of information about breastfeeding continuation/termination [24]. Since some hospitals and clinics receive mothers who seek breast care and breastfeeding support as a non-routine outpatient service, mothers' experiences and unmet needs in midwifery care might arise even after one-month check-up. Furthermore, we did not exclude mothers with complications because midwives provided care for all women, although obstetricians were involved in high-risk cases more frequently.

### 2.4. Sampling

We used purposeful sampling. To avoid potential selection bias, participants were not recruited through birth facilities where midwives were working, but through five childcare support facilities and one community group where midwives were not stationed, but the programs for mothers with infants were offered. The study's purpose was explained face-to-face by researchers to the representatives of these facilities and group, and mothers whose babies were 12–18 months old were introduced. Additional inclusion criteria such as mothers' age and babies' condition at birth were asked by a researcher to maintain their privacy. To avoid recruiting more than two participants who gave birth at the same hospitals or clinics and evenly distribute the birth facilities of the participants among general hospitals, obstetric hospitals, and obstetric clinics, the place of childbirth was confirmed for each candidate prior to their participation, and the researchers adjusted the number of participants by facility. After selecting the first few participants, snowball sampling was used to recruit additional people because mothers usually knew the place of birth and basic information about their friends' babies. The researcher clarified the specific type of birth facility at which a mother gave birth to a baby so that only those who gave birth at this facility type could be recruited. Recruitment was performed until the data reached theoretical saturation, the point at which no new insights emerged from the data. Finally, the number of participants of this study became 15; none of the invited mothers declined study participation, and no one dropped out of the study.

### 2.5. Ethical considerations

All interested participants received a detailed explanation of the study from one of the researchers and decided to participate at their own will by submitting written informed consent. All participants could be with their children during the interview. The date, time, and place where the interviews took place were coordinated according to participants' requests, and their right to withdraw from the study at any point was guaranteed.

### 2.6. Data collection

Of the four researchers, all personal in-depth interviews were conducted by RH to maintain consistency. The participants were asked to designate their preferred place for an interview. Specifically, they should chose a location they can access easily, and where they can relax, talk freely, and their privacy is ensured. As a result, interviews took place at the home of participants, a meeting room of the childcare support facilities, or the college to which the first author belonged. Some of the participants brought their child/ren to the interview. All participants were informed that the interviewer was a registered midwife with clinical experience, currently getting involved in research in the domain of midwifery care.

After collecting participants' background information, including age, birth history, employment status, place, and mode of birth, semi-structured interviews were conducted from February to June 2017 according to a tested interview guide. Participants were asked to recall their experiences with midwives from pregnancy through the first postnatal year. Questions were open to elicit '*the contents of care you received from midwives'* and *'the contents of care you desired but were not provided by midwives*'. These were asked along the following time frame: 1) during pregnancy, 2) during hospital stay (from the admission at the onset of labour to discharge, about five days after vaginal birth, or about seven days after caesarean section), 3) from hospital discharge to the one-month check-up, 4) from the first month to the end of the first postnatal year, and 5) the entire period.

Interviews were recorded on an audio recorder and the interviewers took notes during the interview, with participant consent. Audio data were anonymously transcribed verbatim to avoid revealing the identity of participants or birthing facilities. The identification code and number were given by the place and history of birth. None of the interviews were repeated.

### 2.7. Data processing

Data were analyzed using thematic analysis by Braun and Clarke [25]. This method identifies, analyses, and reports patterns (themes) in data, and allows flexibility in data analysis following a six-step process: 1) familiarising oneself with data, 2) generating

initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report. This data-driven approach is suitable for generating new themes and codes in the absence of prior research.

After the transcripts were repeatedly reviewed to interpret the content, sentences reflecting the two main questions were extracted verbatim, and arranged in order from gestation to one year after childbirth. The sentences were also arranged by birth history, birth place, and mode of birth of the mothers. Each sentence was carefully coded and categorised into subthemes, after which themes were generated and defined according to the shared meaning of each component. This process was mainly conducted by YK and MT, and all four researchers held a meeting several times to discuss the themes and subthemes until data saturation. Results were presented in one table so that two rows of subthemes ('the care provided by midwives' and 'unmet needs in midwifery care') could be compared under each theme. Then, the subthemes of 'unmet needs in midwifery care' were integrated based on each meaning and nature, regardless of theme, through a discussion among all researchers. The extracted data were managed using Microsoft Excel, stored in a dedicated USB flash drive with a password, and were only accessible to the researchers.

### 2.8. Trustworthiness

To ensure the rigour of this study, member checking was conducted. Each participant was asked to confirm if what they described in the transcripts was accurate. Moreover, triangulation was conducted to balance the subjective effects of individual researchers and to confirm the meaning of each statement and its position in the perinatal care system in Japan. Researchers did not request feedback on the findings from the participants. The Consolidated Criteria for Reporting Qualitative Research (COREQ) [26] were followed to report the results.

All authors read the final manuscript, to ensure that the translated version retained its original meaning from Japanese.

## 3. Results

### 3.1. Participants

Fifteen mothers (mean age = 34 years; range = 28–42 years) participated (Table 1). Eight were primiparous and seven were multiparous. The age range of their last-born children was 12–14 months. Eleven participants were employed, and four were not. All participants gave birth at one of three types of facilities where obstetricians were present: general hospitals with obstetric departments, smaller-scale hospitals with obstetrics, and obstetric clinics. Four women gave birth via caesarean section. All participants, except two, had some complications from pregnancy to postpartum, but every mother was physically and mentally fine at the time of the interview. The mothers had no particular concern about the growth and development of their baby. The interview duration was 33–84 min with an average of 49.5 min.

**Table 1**
Characteristics of participants.

| # | Age | Birth history | Employment | Birth place | Mode of birth | Remarks | Interview duration | ID code |
|---|---|---|---|---|---|---|---|---|
| 1 | 34 | P | Employed | General Hospital | VB | Postpartum hemmorrhage (1850 ml) | 41 | GP1 |
| 2 | 29 | P | Employed | General Hospital | VB | Intrapartum hemmorrhage (780 ml) | 45 | GP2 |
| 3 | 36 | M | Employed | General Hospital | VB | N.P. | 40 | GM1 |
| 4 | 40 | M | – | General Hospital | CS | Hypertensive disorder of pregnancy | 44 | GM2 |
| 5 | 42 | P | – | Hospital | CS | Obstructed labour | 51 | HP1 |
| 6 | 30 | P | Employed | Hospital | VB | Intrapartum hemmorrhage (877 ml) | 53 | HP2 |
| 7 | 41 | P | Employed | Hospital | VB | Epidural analgesia, vacuum extraction, intrapartum hemmorrhage (644 ml) | 84 | HP3 |
| 8 | 39 | M | – | Hospital | CS | Placental abruption | 50 | HM1 |
| 9 | 33 | M | Employed | Hospital | VB | Acceleration of labour due to hypotonic uterin contractions | 42 | HM2 |
| 10 | 29 | P | Employed | Clinic | VB | Fetal malrotation, vacuum extraction, blood transfution due to postpartum hemmorrhage | 41 | CP1 |
| 11 | 29 | P | Employed | Clinic | CS | Non-assuring fetal status | 33 | CP2 |
| 12 | 28 | P | Employed | Clinic | VB | N.P. | 61 | CP3 |
| 13 | 35 | M | – | Clinic | VB | Induction of labour | 41 | CM1 |
| 14 | 39 | M | Employed | Clinic | VB | Intrapartum hemmorrhage (1,010 ml) | 58 | CM2 |
| 15 | 33 | M | Employed | Clinic | VB | Anemia in pregnancy | 59 | CM3 |

P: Primipara, M: Multipara, G: General hospital, H: Hospital, C: Clinic, VB: Vaginal birth, CS: Caesarean section, N.P.: Nothing in particular. Interview duration: minutes, ID code: birth place/birth history/number.

### 3.2. Generated themes

Seven themes were generated from 27 subthemes (17 in the care provided by midwives and 10 in unmet needs in midwifery care): confirmation of physical condition, maintenance and promotion of perinatal physiological process, support to better prepare for childbirth, assistance in labour and childbirth, support for a new life with a baby at home, support for the family, and care for comfort and confidence as a mother (Fig. 1). 'Confirmation of physical condition' and 'support for the family' did not have unmet needs in midwifery care, but the remaining five themes were generated from both 'care provided by midwives' and 'unmet needs in midwifery care'. Although there were some varying experiences reported by participants with different birth histories, birth places, and modes of birth at the code level, no independent subthemes or themes specific to a certain parity, facility, or mode of birth were identified.

#### 3.2.1. Confirmation of physical condition

This theme consisted of two subthemes of care provided by midwives. They pertained to the experiences of participants who underwent maternal and infant physical checks. We did not identify any unmet needs related to this care.

**To confirm the physical condition of myself and my baby from pregnancy to one month after birth:** Midwives confirmed the general physical condition of mothers and babies during pregnancy, childbirth, and one month after childbirth.

> '(At antenatal consultation) my midwife touched my belly to confirm a baby's position and explained to me how it was lying in my womb'. (HM2)

> '(After caesarean section) my midwife checked for bleeding and changed my sanitary napkin. She also managed my urination because a tube was attached to my bladder. She did everything for me'. (HM1)

**To confirm the condition of my breasts and breastmilk production:** Mothers recognized that midwives also paid attention to their breast conditions and milk production.

> '(After leaving the hospital,) my midwife checked my breast condition every time at two-week and one-month check-ups. She also checked if I am producing enough milk'. (HP3)

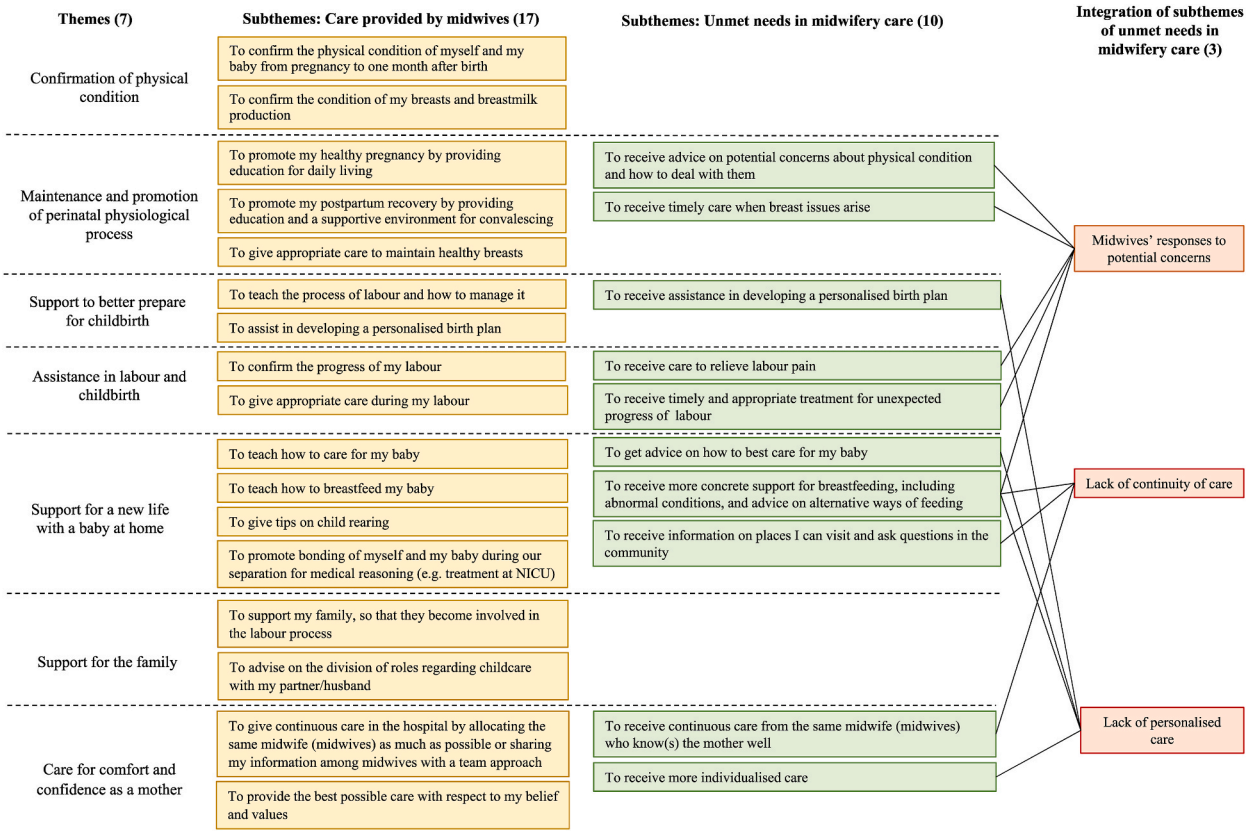



**Fig. 1.** Generated themes, subthemes, and integration of the subthemes of unmet needs in midwifery care.

*3.2.2. Maintenance and promotion of perinatal physiological process*

This theme consisted of five subthemes; three in care provided by midwives and two in unmet needs in midwifery care. It relates to care in maintaining and promoting the physiological process of mothers during pregnancy and postpartum, including breast issues, by providing education, a healthy environment, and appropriate care.

**To promote my healthy pregnancy by providing education for daily living:** According to the findings at the antenatal consultation, midwives educated women on the precautions and improvements in their daily lives to ensure that their progress of pregnancy was within normal limits.

> '(At antenatal consultation) I talked a lot to my midwife mainly regarding my daily diet during the last trimester of my pregnancy. Since I gained quite a lot of weight because of new year's events, she asked me what and how much I ate and advised me to reduce the amount of carbohydrates'. (HM2)

**To promote my postpartum recovery by providing education and a supportive environment for convalescing:** During hospital admission after birth, midwives also educated mothers and offered a supportive environment to ensure and promote their postpartum recovery.

> 'A few days before leaving the hospital, postpartum mothers met together for a group education. Midwives gave us some advice, such as mother's diet, baby care at home, and abnormal signs of myself and a baby that we should consult at the hospital'. (GP2)

> 'I was happy to stay in the same room with my baby after the operation. However, I was not feeling well because of anaemia, getting nervous, and I could not sleep well … So, my midwife took care of my baby for one day and a half so that I could take enough rest'. (HM1)

**To give appropriate care to maintain healthy breasts:** Through observation, advice, and direct care, midwives helped mothers' breasts change without any problem and produce milk.

> 'This is my third baby, and milk production this time was not enough compared to previous pregnancies. My midwives checked and massaged my breasts several times to stimulate my milk production'. (CM3)

> 'The midwives checked my breasts and feeding way at every feeding time. When the breasts were getting hard and hot, they suggested cooling them'. (HM1)

**To receive advice on potential concerns about physical condition and how to deal with them:** Mothers wished to receive midwives' advice on potential concerns about their physical condition in advance so that they could deal with any physical issues that might arise later. Potential concerns included possible complications during pregnancy and side effects of anaesthesia.

> 'It would have been nicer if the midwives had informed me in advance that this was something I should expect later, and that there were things I could do to deal with it … I would have appreciated it during my pregnancy'. (CM2)

**To receive timely care when breast issues arise:** Some mothers felt that they did not receive sufficient breast care from midwives. They wished to have received breast massages in a timely manner to stimulate lactation, or to have dealt with breast issues such as mastitis and vitiligo earlier before they worsened.

> 'My midwife told me that I wouldn't produce any more breast milk after the one-month check-up. I wished she had given me a breast massage earlier to stimulate secretion'. (HP1)

> 'When I had some problems with my breasts at home, I immediately wanted to ask for help from midwives in the hospital. But I even did not call the hospital because I knew they were too busy to talk with me'. (GM2)

*3.2.3. Support to better prepare for childbirth*

This theme, consisting of three subthemes, relates to participants' experiences of better preparing themselves for childbirth. There were two subthemes as care provided by midwives, but one subtheme was identified as an unmet need.

**To teach the process of labour and how to manage it:** Midwives helped participants understand the labour process and a way to deal with it at the antenatal consultation and/or birth preparation class.

> 'At the in-hospital midwifery clinic, my midwife explained signs for the onset of labour and the process after that concretely, by showing me some pictures'. (GM2)

> 'I played a game to learn the flow of labour and childbirth in the maternity class. Participants discussed and arranged the order of cards in which each step of the process was written, from the onset of labour to birth. In the end, our midwife, a facilitator, explained every process in detail'. (HP3)

**To assist in developing a personalised birth plan:** Birth facilities usually ask women to submit a birth plan to clarify their preference. Midwives assisted women in developing it.

> 'Based on my birth plan, I talked to a midwife a lot about my labour and childbirth to clarify what I wrote. I was feeling more comfortable talking to my midwife than a doctor'. (CM1)

**To receive assistance in developing a personalised birth plan:** Some women felt at a loss as they did not know what to write in

the birth plan. They wished that their midwives would offer more assistance in making their birth plans more concrete and personal.

> 'I had to write my birth plan, but I did not know how to write. What kinds of things should be written down? Since I did not know actual childbirth, (I had) no desire for it. So, I asked for help from an independent midwife in my community, not a midwife in my hospital'. (HP2)

#### *3.2.4. Assistance in labour and childbirth*

This theme, consisting of four subthemes, relates to midwifery care during labour and childbirth. Two subthemes were identified as care provided by midwives, whereas another two subthemes were recognized as unmet needs in midwifery care.

**To confirm the progress of my labour:** Women perceived midwives as someone who would stand beside them, confirming the progress of labour.

> 'My midwife examined my cervix and told me a baby would be born before dawn, which was very reassuring for me. Actually, my baby was born exactly at this time!' (CP3)

**To give appropriate care during my labour:** Women also remembered that midwives provided care according to their progress of labour.

> 'She was holding my hand and guided me on how to push and relax at the right time. She was always beside me and so reliable'. (CP1)

**To receive care to relieve labour pain:** Not all participants were satisfied with the pain relief care provided by midwives. Some were left alone with pain during labour; for example,

> 'Until my husband came, I was crying and screaming alone, so I wanted (my midwife) to stay longer, but she was busy. She was unable to stay (with me) all the time. Well, until the cervix fully opened, I had to endure (the pain) all by myself!' (CM1)

**To receive timely and appropriate treatment for unexpected progress of labour:** Participants who had unexpected progress in labour wished they had received more timely and appropriate care from midwives. For example, one was surprised at the rapid progress in labour, whereas another was discouraged by the very slow progress.

> 'I wanted my midwife to hold my baby's head securely so that it didn't come out before I reached a birthing table!' (GP1)

> 'I just assumed that the intense pain would come only before pushing out a baby. However, unexpectedly, my labour did not progress easily, and my pain lasted for a long time. During the process, my midwife did not encourage me but just said to me, "Your pain will be more and more intense later!" It was really disappointing!' (HP3)

#### *3.2.5. Support for a new life with a baby at home*

This theme, consisting of seven subthemes, is about some education and tips on childcare by midwives, including skills training such as changing diapers and bathing babies so that mothers can take care of their babies at home. Midwives also promoted the bonding of mother and baby, with special separation in the NICU for medical reasons. Four subthemes were identified as care provided by midwives, but the rest three were categorised as unmet needs in midwifery care.

**To teach how to care for my baby:** Midwives taught and gave advice to the mothers about how to take care of the baby in daily settings.

> 'This was my third baby, but the second one was born eight years ago. So, I practiced bathing my baby once at the hospital, just for re-checking the flow with a midwife'. (GM1)

**To teach how to breastfeed my baby:** Midwives were also care providers for breastfeeding.

> 'Midwives supported me in everything during breastfeeding, starting from how to hold a baby. Since it was so difficult for me to hold my baby vertically, my midwife was assisting me frequently until just before I left the clinic'. (CP3)

**To give tips on child rearing:** Midwives also provided some tips on how to make childcare smoother and easier.

> 'Midwives taught me regarding the ways to soothe a crying baby, such as holding, swinging, and wrapping her'. (GP2)

**To promote bonding of myself and my baby during our separation for medical reasoning:** Some mothers were not able to stay with their babies for medical reasons. Midwives tried to promote the bonding of the mother and baby in various ways.

> '(Because I was transferred to another hospital after childbirth because of blood loss,) I was not with my baby during my postpartum admission. So, a midwife at a previous hospital took some pictures of my baby during my absence and gave them to me later. I was very thankful to her'. (CP1)

**To get advice on how to best care for my baby:** Mothers wished that their midwives had taught them parenting skills that better suited their needs. Below is one participant's experience during the postpartum hospital stay.

> 'It would have been grateful if my midwife could have shown me a more suitable way to take care of my baby based on her observation of my baby's and my own characteristics'. (CM2)

**To receive more concrete support for breastfeeding, including abnormal conditions, and advice on alternative ways of feeding:** This subtheme reflected the mothers' wish to receive more concrete breastfeeding support from the midwives, including how to address abnormal conditions, along with routine support. They also wished that midwives had provided them with more information on formula milk rather than just encouraging breastfeeding.

> 'I did not know how to take care of my breasts, and how to open the milk ducts or anything like that. I did not even know that the milk ducts would be clogged and how to deal with breast lumps. I did not really know what to do until it occurred. I really wished my midwife had given me such information in advance'. (CM1)

> 'Hospital midwives encouraged us all to breastfeed. So, I thought I could breastfeed. However, after giving birth, I was unable to produce enough milk … I was bothered by the fact that my midwife did not tell me the merits of bottle feeding'. (HP1)

**To receive information on places I can visit and ask questions in the community:** This subtheme relates to mothers' requests to their hospital midwives to provide more information on the places they could visit, to interact with other mothers, and ask questions to midwives in the community.

> '(After leaving the hospital) I cannot visit a hospital just to ask a midwife something trivial. It would be nice if there was anyone I could easily ask anything, and it would be much better if this "someone" were a midwife in my community'. (GP1)

#### *3.2.6. Support for the family*

This theme, consisting of two subthemes of care provided by midwives, relates to family support. No unmet needs related to this topic were identified.

**To support my family, so that they become involved in the labour process:** Participants indicated that midwives encouraged their family members, especially husbands/partners, to get involved in the labour process.

> 'During the labour, my midwife gave instructions not only to me but to my husband, for example, on how to breathe to relax'. (GP2)

**To advise on the division of roles regarding childcare with my partner/husband:** Midwives also promoted husbands' involvement in childcare by mentioning its significance and suggesting what they can do.

> 'My midwife clearly talked to my husband that his support for me was very important. She showed what he can do, for example, watching a baby while I was busy, bathing a baby … Actually, he did a lot at home as advised by the midwife'. (HP3)

#### *3.2.7. Care for comfort and confidence as a mother*

This theme, having four subthemes, relates to the care provided by midwives to make mothers feel comfortable and confident. It consisted of two subthemes as care provided by midwives, whereas another two were recognized as unmet needs.

**To give continuous care in the hospital by allocating the same midwife (midwives) as much as possible or sharing my information among midwives with a team approach:** Participants were satisfied with the efforts by midwives and institutions to offer continuity of care.

> 'A midwife who had attended my labour came to the operating room with me for a c-section. I was so relieved because she was always beside me during the operation'. (CP2)

> 'I asked something to one midwife, and the next day, another midwife already knew my concern. It was great that they shared my little concerns in a very timely manner'. (CP1)

**To provide the best possible care with respect to my belief and values:** Women also appreciated when their own beliefs and values were respected by midwives.

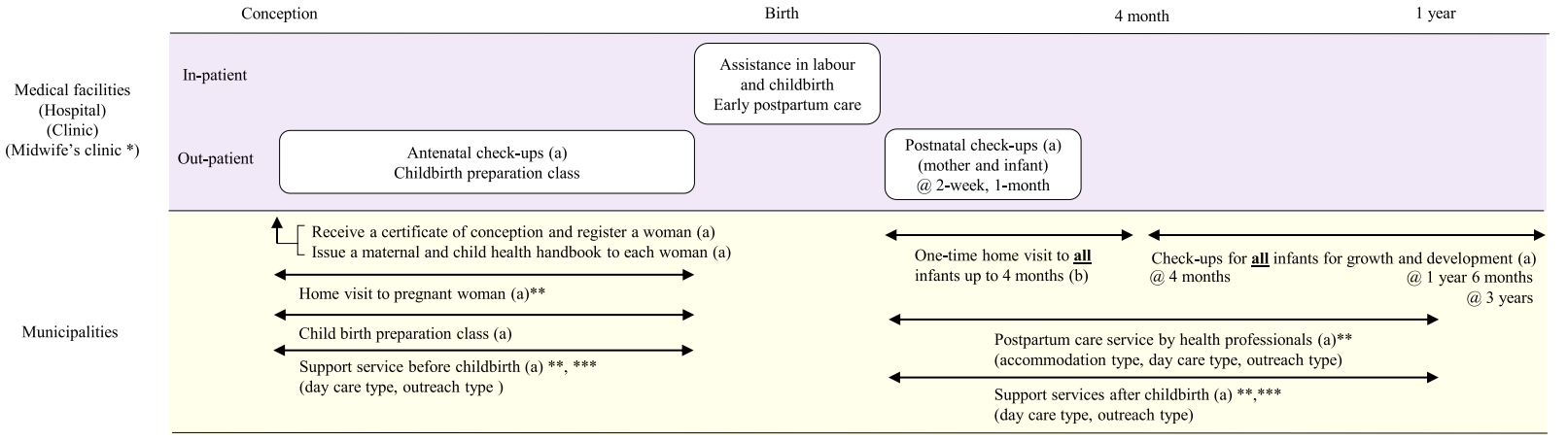
> 'My midwife brought a baby to my breasts immediately after birth, as I mentioned in my birth plan'. (HP2)

> '(Although staying in the same room with a mother and a baby was recommended,) I stayed in a separate room from my baby because I wanted to take a rest. I could decide what I wanted to do. It was good'. (CM1)

**To receive continuous care from the same midwife (midwives) who know(s) the mother well:** Owing to their work shifts, midwives were not always able to attend to the same woman. The following is an example from one participant:

> 'I felt that it would be better to have the same midwife because she knows the process of my pregnancy—that is what I thought when I was pregnant. But, in fact, (the midwives in charge) changed one after another, maybe because it was a big hospital'. (GM2)

**To receive more individualised care:** Midwives tried to provide the best possible care to each woman. However, some participants wanted more individualised support from their midwives, such as respecting their conflicting feelings and providing care based on their characteristics.




(a) Maternal and Child Health Act
(b) Child Welfare Act
* Home birth option is also available. Woman is required to receive a consultation by a contract doctor for designated times.
** Service or care is provided on request of each woman or on extraction by municipality for high-risk cases. Availability for use of the service or care depends on each municipality.
*** Support should be non-medical such as listening to women's concerns, giving advice on childcare, and providing information necessary for women.

Figure was made by authors based on the following sources. Public services mainly for mothers and infants within normal conditions were mainly extracted.
- Mothers' and Children's Health and Welfare Association, Wagakuni no boshi hoken (Maternal and child health in Japan) [in Japanese]. Mothers' and Children's Health and Welfare Association (2021).

**Fig. 2.** Perinatal care system in Japan.

> 'There were times when I wanted to be alone, but I (also) sometimes wanted to spend more time with my midwife and talk about various things. It is a conflicting feeling, but I would be happy if my midwife could have understood that. It is a bit complicated, isn't it?' (HM1)

> 'I would have appreciated it very much if my midwife had observed my characteristics well and taught me the most suitable way for me'. (CM2)

### 3.3. Integration of subthemes of unmet needs in midwifery care

Ten subthemes of the unmet needs in midwifery care were integrated into three categories, based on meaning and nature (Fig. 1). 'Midwives' responses to potential concerns' included women's needs to receive advice and care for their physical conditions in advance, in a timely, concrete manner, or with more options. 'Lack of continuity of care' was integrated from women's concerns about the support by midwives for successful breastfeeding and childcare, from a long-term perspective. This was also shared with women's need for involvement of the same midwives, who knew the mothers. In addition to concerns about more individualised care, the unmet needs for midwives in breastfeeding, birth plan writing, and advice on childcare were also connected with 'lack of personalised care'.

## 4. Discussion

This study aimed to clarify the contents of care provided by midwives in hospitals and clinics in Japan, and the discrepancy between what was desired by mothers. Seven themes were identified: confirmation of physical conditions, maintenance and promotion of perinatal physiological process, support to better prepare for childbirth, assistance in labour and childbirth, support for a new life with a baby at home, support for the family, and care for comfort and confidence as a mother. Of these, unmet needs were identified in five themes, except for 'confirmation of physical condition' and 'support for the family'. All subthemes in the unmet needs in midwifery care were integrated into three categories: midwives' responses to potential concerns, lack of continuity of care, and lack of personalised care.

### 4.1. Care provided by midwives

In the perinatal care system in Japan (Fig. 2), women receive outpatient check-ups and inpatient care from pregnancy to one month postpartum. The transcripts revealed that midwives mainly provided care during this period, in line with the core competencies of the International Confederation of Midwives (ICM) [27]: care during pregnancy (category 2), delivery and immediate postnatal care (category 3), and ongoing care for women and new-borns (category 4). Transversal concepts of midwifery care interpreted by the transcripts, such as facilitating normal pregnancy process, childbirth, and breastfeeding, and promoting health and well-being by concerning daily living and relations with a baby and families, were also included as general competencies in all categories.

### 4.2. Unmet needs in midwifery care

#### 4.2.1. Midwives' responses to potential concerns

Some participants wanted to receive appropriate assistance regarding the potential concerns of their bodies in a timely or advanced manner. Competency in physical assessment is indispensable, and skills such as inspection, palpation, and auscultation are important, although they are becoming marginalised by the increased reliance on technology [28,29]. A state of uncertainty is typical of perinatal events, particularly the intrapartum period, and midwives should constantly provide information as accurately and realistically as possible, so women can maintain control over the process [30]. Owing to the obstetrician-led environment, midwives may not be fully autonomous in physical assessment and care provision. The limitation of competencies and autonomy is a challenge for midwives in Japan and other countries [31,32]. Moreover, to engage with women in labour, midwives should be physically present, or at least immediately available [33].

Improving work environment for midwives is crucial to strengthening assessment skills and guaranteeing their physical availability to women. Several midwives should be allocated to every shift, and individual and institutional efforts should be made to develop competency. Midwives' appropriate response is vital, because it could be the first detection of complications, and a key to stopping conditions from worsening, all of which would provide additional safety and security to women.

#### 4.2.2. Lack of continuity of care

Continuity of care by providers can build trust between women and providers [34]. Two aspects of continuity exist in the perinatal care system in Japan: *in-hospital* and *with-community*. As mentioned before, efforts to introduce in-hospital midwife-led care/clinic systems are ongoing in some institutions, although the implementation rate is still insufficient [17]. According to Iida et al.'s study at a birth clinic in Japan, team-midwifery is an avenue of hope for women to have a positive experience with continuity of care; however, this kind of care setting is still fairly rare [35]. The shift work of midwives is a barrier to providing care by the same midwife (midwives). Furthermore, several skilled midwives should be available, because autonomy is required in midwife-led systems.

The continuity of care between birthing facilities and the community is also an issue. Midwives in hospitals and clinics provide care mainly during pregnancy to one month postpartum. After that, official support is provided by municipal health centres with public health nurses. A population approach is adopted for all infants, through one-time home visits and check-up programs to extract high-

risk cases to focus on. In contrast, the participants' narratives revealed that they wanted to interact with midwives in birthing facilities, to obtain more concrete support for childcare and breastfeeding from a long-term perspective. The significance of midwives in assisting mothers in the first postpartum year is supported by a survey, where about 78% of mothers who had children aged ≤2 years had concerns about breastfeeding, and midwives were the most reliable health professionals (42.4%) in terms of information sources about breastfeeding continuation/termination [24]. The need to improve post-discharge community care and improve inconsistent breastfeeding support was also raised by mothers in Australia [36]. Independent midwives who could work with outreach comprised only 5.6% of all midwives in practice in Japan, indicating problems of availability, whereas the percentage of midwives in hospitals and clinics was 88.4% [15]. The uneven distribution of midwives could negatively contribute to the lack of continuity of care within the community.

#### *4.2.3. Lack of personalised care*

Personalised care cannot be provided without continuity. This unmet need was mainly extracted from the subthemes of birth plan development, childcare, and breastfeeding, in which women's values, preferences, and concerns were reflected. This is consistent with previous research showing that women want midwives to know them deeply, and understand what they want from pregnancy and childbirth, through ongoing care [37]. However, their work shift only allowed them to be involved with their clients intermittently, by sharing information on the records. Support for birth plan development, childcare, and breastfeeding could be provided as midwife-led care, and enhanced involvement by midwives would result in a better understanding of clients, providing more tailored care. Improving their working environment is indispensable to midwives for sufficient involvement with their clients, and finally, a better quality of care would satisfy women and strengthen midwives' motivation.

### *4.3. Challenges*

The care provided by midwives identified in this study corresponded with the contents in 'care categories' in the framework for the quality maternal and new-born care from the women's viewpoints and experiences developed by Renfrew et al. [19]. They were inter-related with other components of the framework, such as 'philosophy (optimising biological, psychological, and social processes)', 'values (respect and tailored care)', and 'organisation of care (competent workforce and care continuity)', and 'care providers (midwives with competencies)'.

In particular, skilled midwives are required to respond to the unmet needs raised by the participants. As a continuous education system to develop the competency of each midwife, JNA developed 'Clinical Ladder of Competencies for Midwifery Practice (CLoC-MiP) [38]', and the Japan Institute of Midwifery Evaluation has started to certify midwives who reach Level 3 on the ladder as advanced midwives, since 2015 [39]. These midwives can work autonomously at in-hospital midwife-led care/clinics. This is a clear objective for individual midwives in their professional development. In addition to the individual efforts to be certified, management in hospitals and clinics is also required to encourage staff midwives to be certified at an appropriate ladder level, according to their clinical experience.

In terms of 'organisation of care', bridging medical facilities and public health services is crucial for better continuity of care. The need for community-based post-discharge support for mothers is evident from previous studies in Japan [35] and other countries [36], and is consistent with our study findings. With concerns about physical and mental stress for childcaring mothers, postpartum care services for women up to one year after childbirth by nursing professionals became obligated by the municipal government, through a partial revision of the Maternal and Child Health Act in 2019, which was enforced on April 1, 2021 [40]. This service has three different ways of delivery: 1) home visits, 2) care at a facility during the day, or 3) care at a facility throughout the day with a night stay. Since the latter two can be offered at either medical or non-medical facilities, some hospitals and clinics are already entrusted to provide this service by the local government. Thus, midwives might have more opportunities to take care of postpartum mothers and babies, even after a one-month check-up. The JNA also suggested that the maternity ward of the hospital could establish 'a community comprehensive care ward for mothers and babies', to collaborate with the community and more actively provide postpartum care services [41]. Midwives at the senior and management levels are expected to reform their obstetric wards, which are more open to the community.

### *4.4. Strengths and limitations*

We invited mothers who were 12–18 months postpartum for an interview, and actual participants were 12–14 months postpartum at the time of the interview. Because midwives were primary breastfeeding supporters for mothers until the weaning period in Japan, we expected mothers to recall all experiences with midwives from pregnancy throughout the first postnatal year. However, midwives in hospitals and clinics mainly provided care from pregnancy to one-month postpartum according to Japan's perinatal care system, and the mothers' experience during this period was a distant past for them at the interview. This might have caused retrospective recall bias. Thus, it is important to consider the timing of interviews in the future study. Second, the care that women received from midwives may have been different from facility to facility, and the experience of each participant might have been facility-specific. Therefore, it is necessary to increase the number of future research participants to obtain more reliable data. Third, this study only provided data from women's perspectives, not from midwives'. Thus, women's descriptions may have been more negatively represented or misinterpreted.

However, this is the first study to investigate the actual care women receive from midwives in hospitals and clinics, and the midwife care needs from the women's perspective in Japan. The interview one year after childbirth also revealed care challenges after the one-

month check-up for mothers and babies. These included insufficient cooperation between medical institutions and the community and lack of care continuity from a long-term perspective. Verbatim transcripts were confirmed by study participants and then reviewed repeatedly by multiple researchers until the data reached theoretical saturation, to ensure the credibility and rigour of the qualitative research. This allows the results to be applied to women with backgrounds similar to our study participants. Considering these, the three integrated points of unmet needs in midwifery care noted by this study could provide suggestions for Japan's perinatal care system to be more women-centred and highlight the roles that midwives are expected to play.

## 5. Conclusion

This study examined the care women received from midwives in hospitals and clinics between pregnancy and one year after childbirth and identified seven themes. The care provided coincided with the core competencies of midwives worldwide. Unmet needs in midwifery care indicated that they were required to strengthen their ability to assess the potential concerns of women and provide continuous and personalised care more sufficiently. The study noted the significance of considering the working environment of midwives, and the individual and institutional efforts for competency development to strengthen midwife-led continuity of care. Collaboration with the community is also a challenge so that they can continuously provide personalised care up to one year post-partum. Our findings support future directions for midwifery in Japan and provide suggestions for countries where the autonomy of midwives is limited.

## Ethics statement

Ethical approval was obtained from the Research Ethics Committee of Kyoto College of Nursing, Japan (reference number of 201603, on January 19, 2017).

## Author contribution statement

Yoko Chiba: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

Risako Hayashi: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Yuri Kita; Mai Takeshita: Analyzed and interpreted the data; Wrote the paper

## Data availability statement

Data will be made available on request.

## 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.

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