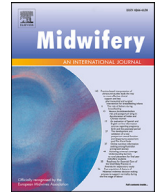




Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



A qualitative study of Turkish midwives' experience of providing care to pregnant women infected with COVID-19

Büşra Küçüktürkmen^{a,*}, Yasemin Baskaya^a, Kevser Özdemir^b

^a Sakarya University, Faculty of Health Sciences, Department of Midwifery, Sakarya, Turkey

^b Sakarya University, Faculty of Health Sciences, Department of Nursing, Sakarya, Turkey

ARTICLE INFO

Article history:

Received 23 March 2021

Revised 3 November 2021

Accepted 12 November 2021

Keywords:

Midwife

Covid-19

Pregnant women

Qualitative study

ABSTRACT

Objective: To determine the experiences of Turkish midwives who provided care to pregnant women diagnosed with COVID-19 or suspected of having it, during labour and delivery.

Methods: A phenomenological approach was used. In-depth individual interviews were conducted with 15 midwives from 15 different hospitals in various Turkish cities through video-conferencing. Data analysis was based on Graneheim and Lundman's techniques for extracting themes from qualitative data.

Findings: Four themes emerged: "Measures against pandemic uncertainty," "Impairment in postpartum care," "Emotional burden of the pandemic," and "Adaptation to the results of the pandemic." Midwives stated that they tried to reduce the risk of contamination by taking self-protection measures and creating isolated areas. They carried out practices such as separating the mother and baby postpartum and not allowing breastfeeding. They experienced emotional confusion with the difficulties faced in this process, and they became professional in the management of the process.

Implications for practice: The results of this study reveal the challenges faced by Turkish midwives during the COVID-19 pandemic and the importance of the publication of evidence-based guidelines. Provision of emotional support for midwives is essential in order to sustain the continuity of the quality maintenance of midwifery care.

© 2021 Elsevier Ltd. All rights reserved.

Introduction

The COVID-19 pandemic, which has become one of the greatest threats to the modern world has experienced, has affected health care professionals serving the public in a spirit like soldiers in war. The new coronavirus disease, called COVID-19, causes serious acute respiratory infections upon contact with droplets or surfaces contaminated with respiratory secretions (Jones, 2020). Due to COVID-19, which began in China in December 2019, the World Health Organization (WHO) declared a global pandemic on March 11, 2020 (Mizrak Sahin and Kabakci, 2020; Qiao et al., 2012). With fast rates of spreading, COVID-19 has affected 2485,182 people in Turkey and 26,117 people have died so far due to this disease (Republic of Turkey Ministry of Health., 2020a).

During the first trimester of pregnancy, the proinflammatory phase develops due to the inflammatory response for blastocyst implantation and trophoblast invasion to enter the uterus successfully. Due to the proinflammatory phase, the pregnant system

weakens, and complaints such as morning sickness, fatigue, and headache are seen. In the second trimester, the foetus develops rapidly, grows, and the pregnant woman transitions into the anti-inflammatory phase. Due to the transition to the anti-inflammatory phase, the complaints seen in early pregnancy disappear. In the third trimester, the development of the foetus is completed, and the birth process begins in the pregnant woman's body. To initiate labour, the immune response is reactivated, immune cells envelop the myometrium, thereby creating a proinflammatory phase in the uterus that activates contractions. COVID-19 is a proinflammatory disease, and the risk of contracting the disease is very high during the proinflammatory phase of pregnancy (Mor and Cardenas, 2010; Phoswa and Khaliq, 2020; Romero et al., 2006). The ACE2 receptor, the specific receptor of COVID-19, is present in the cytotrophoblast, syncytiotrophoblast cells, and decidua during the first trimester of pregnancy (Turco and Moffett, 2019). Since the ACE2 receptors in the syncytiotrophoblast cells, which are responsible for gas exchange between the mother and the foetus and nutritional support to the foetus, are the COVID-19 receptors, it is thought that this task may be disrupted in pregnant women with COVID-19. In addition, thrombophilia are seen at a high rate in patients with

* Corresponding author.

E-mail address: kucukturkmenb@sakarya.edu.tr (B. Küçüktürkmen).

COVID-19 (Knight et al., 2020; Phoswa and Khaliq, 2020). Obstetric complications of thrombophilia, which have an increased incidence in COVID-19 patients, include abortion, foetal growth retardation, preeclampsia, and ablatio placenta (Kujovich, 2004). In addition, complications such as preeclampsia, nausea and vomiting, premature birth, low birth weight and low APGAR score develop due to the anxiety and stress caused by Covid-19 in pregnant women (Bayrampour et al., 2015; Qiao et al., 2012). This supports that the effect of Covid-19 infection on pregnancy is indirect. In order to guide all health professionals, and especially midwives, who care for pregnant women in the COVID-19 pandemic, new guidelines have been developed containing evidence examples, good practices, and expert opinions (RCOG, 2021; Stephens et al., 2020). However, factors such as the duration of the pandemic and the mutation of the causative virus reduce the quality of the evidence instructing these guidelines.

During the pandemic, women continue to conceive and give birth as a part of a life. Therefore, women and their families still need midwifery support during the pandemic (Bick, 2020). Since the start of COVID-19, midwives have been able to provide this support with personal protective equipment (Murphy, 2020). The pandemic is causing changes in the perinatal care process and midwives are trying to overcome the changing care process (Barrero-Castillero et al., 2021; Flannery and Puopolo, 2021). In some countries, face-to-face meetings in perinatal follow-up have been limited, and telemedicine-based interviews have been introduced. However, in addition to the advantages of telemedicine interviews applied in perinatal follow-up, tests and examinations still need to be done face-to-face, the presence of pregnant women without internet access, and the lack of complete privacy pose an obstacle to healthcare personnel in practice (Afshar et al., 2020). The International Confederation of Midwives (ICM) drew attention to the increased caesarean birth rates during the pandemic, the inability of the mother to receive spousal support during the birth, the immediate isolation of the newborn baby from the mother after the birth, and the inability to start early breastfeeding. Accordingly, the ICM emphasised that there is a violation of the human rights of women, newborn babies, and midwives (ICM, 2020). The care of pregnant women diagnosed with COVID-19 should include quality and evidence-based midwifery care and a multidisciplinary team approach, as well as maintaining isolation, reducing transmission, and providing psychosocial support to the family (Favre et al., 2020). It is the duty of all midwives to protect the physical and mental health of the mother and baby by giving respectful and individualised midwifery care. More monitoring and interventions are needed for pregnant women with COVID-19 or suspected of having COVID-19 (Vivilaki and Asimaki, 2020). Due to working conditions and fear of contamination, providing woman-centred care, maintaining communication, and providing emotional support to pregnant women with COVID-19 infection complicates the job of midwives (Aksoy and Koçak, 2020). In addition to all of this, on October 27, 2020 a ban was issued to health care workers in Turkey that prohibited personal leave, retirement, re-appointment, and the resignation of health care workers, and thus midwives were not allowed to leave their positions (Republic of Turkey Ministry of Health., 2020b). This ban continued until 19 January 2021. The effects of these restrictions on health care professionals and the effects of the COVID-19 pandemic on midwives, the quality of midwifery care, and practices and process management have not yet been revealed. In the literature, there are not enough studies to determine the problems, difficulties, and feelings experienced by midwives who provide care in labour and delivery for pregnant women with COVID-19 infection. Therefore, the aim of our study was to determine the experiences of midwives caring for pregnant women with COVID-19 infection.

Method

Study design

A multi-centre study, a phenomenological approach based on Heidegger's hermeneutic phenomenology, was used. In hermeneutic phenomenology, we have to be self-restrained in the way we approach a phenomenon to allow the phenomenon to come forward as it is and then a it in a sensitive and interpretive way (Van Manen, 2014). Both Gadamer and Van Manen recognised that our prejudices or biases influence our interpretation and understanding and our ability to see the thing in itself (Gadamer, 2004; Van Manen, 2014). Hermeneutic phenomenology has been used successfully in midwifery research (Jepsen et al., 2016; Martínez-Serrano et al., 2018; Van kelst et al., 2013). It has been found to be an appropriate approach to experiences of midwives who provide care to pregnant women diagnosed with COVID-19 or suspected. In this study, the lived experiences of the midwives were investigated to gain insightful descriptions of how midwifery is experienced during the pandemic. To understand the concept of the lived experience in its full extent, Van Manen's theoretical framework of the 'life world existentials' was applied (Van Manen, 2014). The study was conducted and results were reported in accordance with the consolidated criteria guide (COREQ) for qualitative research reporting.

Participants and settings

The total number of COVID-19 cases in Turkey had surpassed two and a half million as of February 2021. Especially in metropolitan cities with populations over one million, such as Istanbul, Ankara, Izmir, Kocaeli, and Sakarya, the number of cases is higher than in other provinces. In order to determine what midwives from different cities and different hospitals in Turkey have experienced during the pandemic, research was conducted with participants who were all from different hospitals. The study sample consisted of midwives working in the delivery rooms of public hospitals under the Ministry of Health of the Republic of Turkey and who provided care to pregnant women diagnosed with or suspected of having COVID-19. Pregnant women who had a positive PCR test before hospitalisation and started the delivery process while positive were considered "Covid positive", and pregnant women who had a PCR test at the hospital due to COVID-19 symptoms, but did not yet have a result were considered "Covid suspected pregnant". In order to obtain richer information about the case being studied, efforts were made to ensure diversity in terms of some socio-demographic characteristics, the province and the hospital of employment, and professional experiences when the participants were included in the study.

Sampling strategy

With the aim of determining the experiences of midwives working in delivery rooms in different cities in Turkey and considering the fact that extended face-to-face interviews with midwives would be inappropriate due to social distancing rules, it was planned to interview the midwives via the Internet (Google Meet). The midwives to be interviewed were reached using the snowball sampling method. The first interview started with a midwife from the researchers' community, but someone who the researchers did not know personally. We then asked this first midwife to be interviewed the simple question of "Would you suggest a midwife working in a different hospital that we can talk to about this issue?" in order to reach out to other midwives and thus form a study group. "Saturation" is an important guide in deciding the sample size in qualitative research. It was decided that the sample

size was sufficient when the information provided by the participants was repeated and the same expressions were used again. The study was completed with 15 midwives. In order to determine different practices and to avoid reaching saturation in a short time, attention was paid to selecting participants from different hospitals. The data collection and analysis phase of the research was completed between January 15 and February 15, 2021.

Data collection

Data were collected with a semi-structured questionnaire. The semi-structured questionnaire consisted of open-ended questions in accordance with the structure of the research. There were two parts in the questionnaire. The introduction part consisted of socio-demographic questions that would initiate communication with the midwife and questions that would facilitate the transition to the main topic. The introductory question for the second part was: "What is your experience with the delivery process of a pregnant woman with a diagnosed or suspected COVID-19 infection?" Then, allowing the interview to be guided by the participants, questions such as "Are there any special measures you have taken? How has this process affected you? Has there been any change in your care?" were asked. In addition, in order to determine the effect of the implemented limitation on resignation, retirement, and personal leave requests of health care workers on the midwives, the question of "Have you ever thought of resigning during the pandemic process?" was asked just before the end of the interview. The understandability of the prepared questionnaire was tested before starting the study with two participants who showed similar characteristics to the sample group. Other participants were reached after the first participant was found by the researchers. The telephone numbers, e-mail addresses, and names of the other participants suggested by prior participants were sent to the researchers via text message. All participants interviewed were informed in advance by the participant who had suggested them. The participants were informed about the study again by the researchers, the link for Google Meet was sent both by e-mail and as a message to the phone, and they were reminded that the interviews would be recorded. Participants were asked to choose an appropriate environment for the interviews, where they would be able to talk quietly and comfortably and not be affected by their environments. The interviews were conducted in the Turkish language via videoconferencing over the Internet. The participant and a researcher took part and interviews lasted for about 30–35 min. The data were collected between January 15 to February 6. After the data were analysed, the quotations to be used to illustrate the Findings were translated from Turkish to English and back translated from English to Turkish to ensure nuances of meaning.

Data analysis

The data analysis of the transcripts was based on Graneheim and Lundman's techniques of extracting themes from qualitative data (Graneheim and Lundman, 2004). Analysis started after data collection was concluded. The analysis of each interview was done within a week from the date it took place. First, the entire interviews were read several times by the researchers to get an idea of the general content of the text. Secondly, the text within each content was divided into units of meaning. Each semantic unit consisted of many words, sentences or paragraphs, containing factors linked to each other with its content and context. Thirdly, the codes were created by abstracting the condensed meaning units. All encodings were double-checked by the researchers against the original transcripts. Fourthly, the codes were interpreted and compared with their differences and similarities, and 10 categories were formed. Finally, four main themes were determined that

combined the contents of the categories. The inability to obtain new themes was an important factor in determining data saturation. In order to increase the reliability of the data, the participants were not addressed by their names during the interviews, thus encouraging them to express their opinions without any worry or fear. In direct quotations, for participant confidentiality in the study, codes such as "P1, P2, ... P15" are used.

Ethical considerations

In order to conduct the study, study approval was obtained from the Ministry of Health's COVID-19 Scientific Research Evaluation Commission and the Sakarya University Faculty of Medicine's Non-Invasive Research Ethics Committee (E-71522473-050.01.04-14849) Participants were informed about the purpose of the research and that the interviews conducted in the research would be recorded. Since written consent could not be obtained, the informed consent form was verbally read to the participant at the beginning of the interview and the participants were asked to approve the form verbally. All raw data were stored in password-protected computer files, along with duplicated interview data.

Findings

The socio-demographic characteristics of the participants are presented in Table 1. The average age was 28.27 years. Six of the midwives working in the delivery rooms were married, nine were single, and all had studied at undergraduate level. According to the capacity and density of the hospital in Turkey, some units were converted into pandemic services in the waves of an increase in the number of COVID-19 cases. When the number of cases decreased and the inpatients were discharged, the service returned to its old routine operation. The units in which seven of the midwives worked were changed for a while due to the pandemic and then they returned to work in the delivery room again. There were some differences between hospitals regarding maternity care in Turkey, which are also reflected in the expressions of the midwives. For example, since most delivery units in Turkey do not have single rooms for labour, the women were taken to a different room with a delivery table for the second stage of labour. In newly built hospitals, single rooms are available for labour, delivery and postpartum. However, the number of these hospitals is not yet adequate for need. In addition, some hospitals have a "neonatal nurse" to take care of the baby from birth and in the postpartum period. The neonatal nurse does not take care of the mother but only the baby.

In this section, the experiences of midwives working in the delivery room are presented within four themes of "Measures against pandemic uncertainty," "Impairment in postpartum care," "Emotional burden of the pandemic," and "Adaptation to what the pandemic brings" and examples of the responses of the participants regarding these categories are presented. Table 2.

Theme 1. Measures against pandemic uncertainty

The topics discussed by the midwives regarding measures against the uncertainty of the pandemic were categorised as "Isolated areas," "Self-protection measures," and "Admission rules for labour."

Isolated areas

After the incidence of COVID-19 in Turkey started to increase, hospital administrators first took precautions by establishing specific service and delivery rooms for pregnant women diagnosed with or suspected of having COVID-19:

Table 1
Socio-demographic characteristics of the participants.

Participant number	Age	Marriage status	Province of employment	Duration of work in general (year)	Duration of work in the delivery room (year)	Current monthly working hours	Previously infected by Covid 19
1	23	Single	Kocaeli	1	1	184	No
2	24	Single	İstanbul	2	2	160	No
3	50	Married	İstanbul	32	10	190	No
4	23	Single	Sakarya	1	1	160	No
5	26	Single	Şanlıurfa	2	2	232	No
6	24	Single	İstanbul	2	2	220	No
7	43	Married	İstanbul	25	14	200	Yes
8	25	Single	İstanbul	4	4	180	Yes
9	23	Single	Ankara	2	2	192	No
10	25	Single	Sakarya	3	1	192	No
11	31	Married	İzmir	10	5	192	No
12	29	Married	Gaziantep	4	3	168	No
13	23	Single	Tekirdağ	1	1	212	No
14	26	Married	Ankara	5	3	184	No
15	29	Married	İstanbul	7	7	160	Yes

Table 2
Defined themes and categories.

Themes	Categories
Measures against pandemic uncertainty	Isolated areas Self-protection measures Admission rules for labour
Impairment in postpartum care	Separation of the mother and the baby Washing the baby postpartum Allowing breastfeeding
Emotional burden of the pandemic	Hardships Emotional confusion
Adaption to what the pandemic brings	Professionalisation in process management Test routines

When a COVID-positive pregnant woman came, an isolation room was established to avoid risk for the healthy pregnant women. Positive pregnant women were monitored in this room in an isolated place away from other pregnant women (P1).

...the hospital where I work is new and very big. We have a corridor of more than one obstetrics clinic, we have allocated one corridor as an isolated area for COVID-positive pregnant women (P15).

Actually, all of our rooms are in the form of labour-birth-postpartum rooms. Our pregnant women with coronavirus are monitored in the covid-gynaecology service after giving birth in isolation and being monitored a little after birth (P10).

Self-protection measures

Midwives caring for pregnant women with coronavirus or suspected of having COVID-19 took measures such as using personal protective equipment, reducing the number of people in contact with pregnant women, and monitoring the birth spontaneously and without intervention. In addition, measures such as immediate caesarean delivery were taken in some hospitals:

We dress completely and enter [in personal protective equipment] because we are in a place with a high risk of contamination... we wear our overalls, glasses, surgical masque over an N95 masque, double-layer gloves, our visor (P9).

One person in turn is assigned to care for the COVID-positive pregnant women. These selected midwives are not providing care to healthy pregnant women. In this way, we both prevent contamination and contact amongst ourselves and we protect healthy pregnant women (P2).

We do not enter as a crowded team; only a neonatal nurse, a midwife and the doctor in charge goes in. In this way, there is usually a maximum of 3 people (P4).

For example, we do not do any intervention such as induction or amniotomy, we let the birth progress spontaneously. ... We take the patient to the delivery room after the active first phase... (P6).

...Staying in the same environment for hours is a huge risk for us despite the [personal protective] equipment. Therefore, physicians make decisions for caesarean section when the cervix of the pregnant woman is not almost or fully open (P1).

Admission rules for labour

All of the midwives obtained PCR tests from the pregnant women while taking them to the labour room and did not allow any of the women to have a companion:

At first, we take all the routine blood work that we call the COVID panel, then we do it with the PCR test if there is a suspicious situation. The PCR result is available within 3 h at the latest (P14).

We are not taking any companions in this room. They are alone. There is such a system in the hospital where I work, we can connect the pregnant woman to the NST [i.e., continuous electronic foetal monitor] and follow it on our own computer screen ... we monitor the NST without constantly entering the room (P6).

Theme 2. Impairment in postpartum care

In the COVID-19 pandemic, recommendations vary, especially in terms of postnatal mother-infant health. For this reason, there were different practices amongst the institutions for “separation of the mother and the baby,” “washing the baby postpartum,” and “allowing breastfeeding.”

Separation of the mother and the baby

In some institutions, practices such as delaying mother-baby contact were practised to prevent the risk of transmission from a COVID-positive mother to the baby:

The baby is taken immediately and isolated, they are separated from each other until the test of both the mother and the baby is negative. The babies are generally sent to intensive care (P8).

Our pediatricians say that a mother may breastfeed the baby while wearing a masque. We do not separate the mother and baby, we provide skin-to-skin contact (P1).

Washing the baby postpartum

Looking at the practices of baby care after birth, it was noted that the babies were usually washed to prevent vaginal transmission:

Under normal conditions, babies are not washed after birth, but babies of mothers with COVID-19 or suspected of having COVID-19 are washed (P12).

As soon as the baby is born, a swab sample is taken; we do not wash the babies, and we did not have any COVID-positive babies (P9).

Allowing breastfeeding

In all the institutions, a woman with suspected COVID-19 infection or with a definite diagnosis was not allowed to breastfeed immediately. However, her baby received the breast milk that the mother expressed and it was given to the baby by bottle:

We are trying to make contact and start the breastfeeding process as soon as possible (P9).

Every obstetrician and paediatrician does it differently. Some allow breastfeeding. Some do not...(P2).

Mothers express their milk after birth and deliver it to us in storage bags. It is given to babies like that, they do not breastfeed directly (P8).

Theme 3. Emotional burden of the pandemic

Working conditions and difficulties experienced in the process played a crucial role in the level of burnout amongst midwives, their psychological state, and their communication with pregnant women. Midwives who cared for COVID-19-positive pregnant women stated that they experienced “hardships” in their working conditions and that they felt “emotional confusion” during the pandemic.

Hardships

The midwives stated that they have had great difficulty in communicating with pregnant women, being effective in midwifery care, and working with protective equipment:

You are having a hard time wearing the equipment because there are overalls in the protective equipment and the overalls make people sweat a lot. In addition, it is also difficult during the birth process, you cannot move yourself, or when I say to the pregnant woman ‘push, do this,’ my voice is not heard through the masque. I have difficulty communicating with the masque (P13).

There is someone who cannot make eye contact and cannot keep her hand very warm, so it is really sad for the patient (P3).

We could not have much contact with a pregnant woman with COVID-19 or suspected of having it... Or we could not walk the woman in the corridor. We could not go to her often. While we should have taken care of her more often, we couldn’t (P2).

Emotional confusion

Midwives providing care for COVID-19-positive or suspected pregnant women often faced emotional confusion owing to the increased workload, long working hours, and working in a high-risk environment. This confusion was expressed as “desire to leave the profession,” “mutual empathy with the pregnant woman,” “overcoming fear,” and “burnout.”

Statements from midwives regarding their desire to leave the profession during the pandemic period were as follows:

Yes, I am thinking of retiring. The pandemic had an impact on me and it has tired me a lot (P3).

I thought about resigning and then resignations were cancelled. As if I received a message from somewhere saying ‘no, you will continue in do this profession (P9).

Some of the statements of midwives about mutual empathy with pregnant women were as follows:

I started to have more empathy. Managing a labour alone is difficult, even for a normal pregnant woman, and it is very bad and difficult for employees under lots of clothes to come and take care of you, leave you alone in the room, and keep close people away (P2).

At first, I was really biased against the patients. Because while we struggle so much here, they are constantly wandering the streets, paying no attention [to COVID-19 transmission]. Then I started to ask

patients, I said, ‘How did you get infected?’ ‘I came for a antenatal visit, I had nothing in the polyclinic, then I started to show symptoms, I got it from the hospital’ or ‘My spouse was infected with COVID-19 from the workplace where he had to work..’ Then I empathised and started to feel sad, my thoughts were changed by communicating with them (P6).

Pregnant women were also thinking about us, it’s very strange. I have never seen a pregnant woman who came at a normal time (in non-pandemic times) ever thinking about a health-care provider. However, the pregnant women who were COVID-positive paid great attention, saying ‘Don’t let it infect you.’ (P3).

As soon as you enter the door, she shouts ‘don’t enter, I don’t want anyone.’ ‘I don’t want to infect anyone,’ she says (P4).

Midwives’ statements about overcoming fear were as follows:

At first there was anxiety and fear, but now we are used to the process (P11).

... We all got used to it afterwards. Since normalisation began in our lives, our fears have diminished a little more. So we are not the same as before (P14).

Some of the midwives’ statements about burnout syndrome were as follows:

Everyone is tired, everyone is worn out in the same way, that is, they do not get the reward for their effort in return, and when they do not get it, we have even more burnout syndrome (P8).

We got into burnout syndrome. This includes my friends, the cleaning staff, the doctors, and myself. Because there were times when we worked really hard; constantly working with masks is irritating and definitely causes hatred of life (P7).

Theme 4. Adaption to what the pandemic brings

The last theme emphasises “professionalisation in process management” and “test routines” for midwives to adapt to the new normal.

Professionalization in process management

Some of the statements of midwives about professionalisation in managing the COVID-19 process were as follows:

We are more confident of ourselves now. We know how to manage the process or how to intervene if there is a sign of danger, or we are a little more aware of the reason (P9).

At first, we didn’t know what to do if a patient was positive or suspected of being positive. We were looking for a pandemic doctor to consult. But now everything is fine, we know what to do if such a patient comes (P5).

COVID-19 test routines

COVID testing was one of the routine practices when admitting pregnant women diagnosed with or suspected of having COVID-19 to the delivery room. Statements regarding routine testing for COVID-19 included the following:

Towards the middle of the second wave, PCR was done for all our pregnant women who have been hospitalised, for about 1 month or so. It was never done before (P2).

Discussion

In this study, which was conducted to determine the experiences of Turkish midwives caring for pregnant women with COVID-19 infection, 15 midwives were interviewed. The experiences of these midwives were categorised within 4 main themes and 10 categories. The results are important in terms of reporting the difficulties and experiences of midwives who cared for pregnant women with COVID-19 infection during the pandemic period.

In our study, measures against the uncertainty of the pandemic were aimed at preserving isolated areas, using self-protection measures, and maintaining admission rules for labour. Ensuring isolation in the pandemic and separating healthy and infected pregnant women are very important for preventing transmission. Miller et al. (2020) compared isolation in negative pressure with isolation on COVID-19 transmission and demonstrated that isolation was less costly and a good method to prevent COVID-19 transmission in the air. Not allowing a companion to join the pregnant woman with COVID-19 is another precaution. Based on their experiences and feedback from the field Capanna et al., (2020) stated that companions should not be allowed with women diagnosed with or suspected of COVID-19.

WHO recommends the use of protective equipment, such as overalls, visors, N95 masks, and gloves during the pandemic, for health care workers to protect themselves and their patients from infection and transmission to others (WHO, 2020a). The midwives in our study seem to have adapted to the use of personal protective equipment, which is universally accepted and recommended to reduce the risk of cross infection. In their guidelines Boeling et al. (2020) recommend keeping the number of people in the delivery room to a minimum to prevent the risk of COVID-19 transmission. In addition, it is stated in the same guidelines that COVID-19 infection alone is not an indication for caesarean delivery and that the actual obstetric indications for the delivery method should be determined. In a systematic review-meta-analysis study by Dubey et al. (2020) in which they investigated maternal and newborn characteristics and outcomes in women infected with COVID-19, it was shown that the rate of caesarean section is relatively higher in COVID-19 positive pregnant women. In a systematic review meta-analysis study conducted to evaluate which mode of delivery is better for preventing possible vertical transmission from a pregnant mother confirmed with COVID-19 to a newborn baby, Cai et al. (2021) found that there is no sufficient evidence that caesarean section is better than vaginal delivery in preventing possible vertical transmission from a pregnant mother confirmed with COVID-19 to a newborn baby. In our study, we found that attention was paid to the number of people on the delivery team. However, it is alarming that in some hospitals pregnant women who were positive for COVID-19 were immediately taken for a caesarean section. One of the measures for detecting COVID-19 is the PCR test. When a pregnant woman is suspected of having COVID-19 at admission, it is recommended that a deep nose and/or throat swab is taken for PCR testing. In addition, it is recommended that a pregnant woman diagnosed with or suspected of having COVID-19 is admitted to an isolation room prepared in the obstetric service with negative pressure, if any, and away from other healthy pregnant women (Donders et al., 2020). Where deliveries occurred in an isolation room, with babies immediately separated from their mothers, and isolated for at least 14 days, no vertical transmission of SARS-CoV-2 and no perinatal complications during the third trimester were found (Liu et al., 2020). In our study, the recommendations in the literature were being followed, and this situation resulted in pregnant women being alone in a room without the support of any family members.

In our study, it is noteworthy that there was a difference between institutions in practices such as ensuring that the mother and baby were separated, washing the baby, and not allowing breastfeeding. When the literature is reviewed, there are different suggestions regarding these issues. Mascarenhas et al. (2020) stated that mother-baby skin contact should not be provided after birth. The American Academy of Pediatrics draws attention to the temporal separation of the mother and the baby or ensuring that the baby is cared for by non-infected caregivers in the mother's room, that babies are kept 6 m away from the mother, and that masks are used during breastfeeding and hand and breast

hygiene is maintained (Puopolo et al., 2020). The WHO stated that mothers with suspected or confirmed COVID-19 should not be separated from their infants (WHO, 2020b). Fumagalli et al. (2021) reported concerns about COVID-19-positive mothers contaminating the baby during breastfeeding, but they took precautions and the babies were still breastfed. The WHO stated that there is no harm in mothers with COVID-19 breastfeeding their babies, and the numerous benefits of skin contact and breastfeeding significantly outweigh the potential transmission and disease risks associated with COVID-19 (WHO, 2020c). In their case series study of 22 mothers, Periera et al. (2020) found that breastfeeding by mothers with COVID-19 is safe with adequate infection control measures to avoid mother-baby contagion. Despite these examples and recommendations in the literature, it is still worrisome that breast milk is expressed and breastfeeding is not allowed in some institutions. Although few studies have been reported on immediate washing of babies after birth, some published guidelines recommend that newborn babies be washed immediately to reduce the risk of transmission (Puopolo et al., 2020). Besides these recommendations, some studies indicate that delaying newborn washing has important benefits such as increasing breastfeeding rates, and immediate washing of the newborn has significant risks such as hypothermia and hypoglycemia (Chamberlain et al., 2019; Dumitriu et al., 2021; Warren et al., 2020). In a retrospective cohort study the benefits of starting breastfeeding immediately and delaying washing the baby on baby outcomes were supported (Dumitriu et al., 2021). It is also suggested that separating mothers positive for SARSCoV-2 and their babies and avoiding direct breastfeeding may not be warranted to prevent SARS-CoV-2 transmission (Dumitriu et al., 2021). In our study, the differences between institutions in postnatal care are thought to be due to the lack of consensus on these issues in the literature to date.

Midwives working in an area such as the delivery room, where pregnancy-midwife communication and contact is very high, are present in environments with high contamination risk and they tried to prevent the spread of the infection while meeting the needs of the pregnant women. While caring for pregnant women, there was an increase in working hours and workload due to the absence of other coworkers who had been infected. All of these points raise difficulties and emotional confusion in midwives caused by the emotional burden of the pandemic. In addition, the midwives stated that they had physical difficulties with protective equipment and they were not effective enough in providing care to pregnant women. In a systematic review of 143,246 professionals from 138 studies Sirois and Owens (2021) showed that being a woman, being a nurse, experiencing stigma, contacting or risking contact with infected patients are risk factors for psychological distress amongst healthcare professionals. May (2020) conducted a study in Turkey in the first wave of the pandemic with 204 midwives and 173 nurses and found that the prevalence of depression in midwives and nurses was 31.8%, and the risk of depression in midwives was 1.92 times higher than that of nurses (Yörük and Güler, 2021). In their meta-analysis where they analysed data from 65 studies with 97,333 health care professionals from 21 countries Li et al. (2021) found that the prevalence of moderate depression, anxiety, and post-traumatic stress disorder was high in healthcare professionals. In our study, emotional states of burnout, uneasiness, fear, and anxiety emerged (Li et al., 2021). Due to the conditions brought about by the pandemic, midwives may think of leaving the profession and experience burnout. Lai et al. (2020) found conditions such as depression, anxiety, insomnia, and distress in health care workers struggling with coronavirus. Emotional states of burnout, anxiety, and fear also emerged in our study. Nurses experienced burnout during the pandemic period and tried different methods to cope with it (Chor et al., 2020). With the accompanying burnout and complex emotions, midwives may consider leav-

ing the profession (Tayyib and Alsolami, 2020). In our study, some midwives stated that they were thinking of leaving the profession. The severe conditions brought about by the pandemic have also affected communication between midwives and pregnant women. Both the excitement of giving birth and the uncertainties about the coronavirus increased the women's anxiety. A previous study reported that midwives felt the need to provide emotional support to their patients due to the isolation of pregnant women with coronavirus during labour and the minimising of contact (González-Timoneda et al., 2020). In our study, the empathy of the midwives towards pregnant women was also at the foreground.

The state administration, society, institutions, and, of course, health care professionals are increasingly adapting to what the pandemic brings. In the management of this process, midwives stated that they were now more professional compared to their initial inexperience in the first period. In a study conducted on the experiences of health care professionals in the pandemic, health care professionals stated that they could distinguish COVID-19 patients and gained knowledge about treatment and skills (Eftekhar Ardebili et al., 2020). In addition, it is important to have published guidelines on patient care and to have clear patient admission protocols during the pandemic. According to the guidelines, it is recommended to take swab samples from the nasopharyngeal area with a cotton swab to make a diagnosis in cases that meet the definition of suspicious cases and to confirm the diagnosis in symptomatic cases. Viral RNA taken from samples is detected by quantitative reverse transcription-polymerase chain reaction (qRT-PCR) analysis, which is the gold standard method in diagnosis (Republic of Turkey Ministry of Health., 2020a; Tanacan et al., 2020). Performing this test routinely at admission in labour is a very important precaution in terms of protecting health care workers and healthy pregnant women. In our study, the midwives stated that the qRT-PCR test was performed while admitting pregnant women in labour.

Limitations

This study has certain limitations. First, qualitative research deals with the details and depth of information and the best way to express the studied phenomenon. Because of this feature, the fact that we cannot generalise qualitative research may be considered as a limitation. Second, it is important that the names of participants not be known by the researchers so that the participants will feel themselves safe and anonymous. However, although these participants were not directly addressed by name during the interviews, it was still necessary to learn their names in order for participants to be reached with the method of snowball sampling. Finally, the provinces and hospitals where the participating midwives were working were chosen from amongst places with high numbers of cases; therefore, these midwives may be more exhausted than midwives in provinces with lower rates of COVID-19.

Conclusions

The COVID-19 outbreak is affecting all areas of perinatal care and midwives have to face enormous challenges. It can be said that midwives, who are amongst the front-line health care professionals during the COVID-19 pandemic, feel intense emotions and sometimes have difficulty dealing with this situation, especially during labour, which requires one-on-one support and close contact. In this process, working conditions and the mood and motivation of midwives are very important in order to maintain high-quality midwifery care. Revealing the difficulties, experiences, thoughts, and differences in midwifery practice will provide a basis for increasing the quality of the care, organisation, and support

systems for health care professionals. There appears to be differences in practice, as many of the currently published guidelines are not evidence-based. All education and skill training of health professionals should be supported at organisational, institutional, and governmental levels for spreading evidence-based information and guidelines. Publishing evidence-based guidelines, organising in-service education for midwives, and increasing psychological support systems might assist in reducing the midwives' negative experiences. With the help of future research, there will be a search for solutions to the problems that midwives are experiencing now.

Ethical approvals

The study approval was obtained from the Ministry of Health's COVID-19 Scientific Research Evaluation Commission and the Sakarya University Faculty of Medicine's Non-Invasive Research Ethics Committee (E-71522473-050.01.04-14849).

Funding

No competing financial interests exist.

Declaration of competing interest

None declared

CRediT authorship contribution statement

Büşra Küçüktürkmen: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft. **Yasemin Baskaya:** Conceptualization, Methodology, Investigation, Formal analysis, Writing – review & editing. **Kevsir Özdemir:** Methodology, Writing – review & editing.

Acknowledgments

The authors would like to acknowledge the midwives who willingly participate in this study.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.midw.2021.103206](https://doi.org/10.1016/j.midw.2021.103206).

References

- Afshar, Y., Silverman, N.S., Han, C.S., Platt, L.D., 2020. Clinical guidance and perinatal care in the era of coronavirus disease 2019 (COVID-19). *J. Perinat. Med.* 48, 925–930. doi:[10.1515/jpm-2020-0400](https://doi.org/10.1515/jpm-2020-0400).
- Aksoy, Y.E., Koçak, V., 2020. Psychological effects of nurses and midwives due to COVID-19 outbreak: the case of Turkey. *Arch. Psychiatr. Nurs.* 34, 427–433. doi:[10.1016/j.apnu.2020.07.011](https://doi.org/10.1016/j.apnu.2020.07.011).
- Barrero-Castillero, A., Beam, K.S., Bernardini, L.B., Ramos, E.G.C., Davenport, P.E., Duncan, A.R., Fraiman, Y.S., Frazer, L.C., Healy, H., Herzberg, E.M., Keyes, M.L., Leeman, K.T., Leone, K., Levin, J.C., Lin, M., Raju, R.M., Sullivan, A., 2021. COVID-19: neonatal–perinatal perspectives. *J. Perinatol.* 41, 940–951. doi:[10.1038/s41372-020-00874-x](https://doi.org/10.1038/s41372-020-00874-x).
- Bayrampour, H., Salmon, C., Vinturache, A., Tough, S., 2015. Effect of depressive and anxiety symptoms during pregnancy on risk of obstetric interventions. *J. Obstet. Gynaecol. Res.* 41, 1040–1048. doi:[10.1111/jog.12683](https://doi.org/10.1111/jog.12683).
- Bick, D., 2020. COVID-19: 2020 is the International Year of the Midwife. *Midwifery* 85. doi:[10.1016/j.midw.2020.102719](https://doi.org/10.1016/j.midw.2020.102719).
- Chamberlain, J., McCarty, S., Sorce, J., Leesman, B., Schmidt, S., Meyrick, E., Parlier, S., Kennedy, L., Crowley, D., Coultas, L., 2019. Impact on delayed newborn bathing on exclusive breastfeeding rates, glucose and temperature stability, and weight loss. *J. Neonatal Nurs.* 25, 74–77. doi:[10.1016/j.jnn.2018.11.001](https://doi.org/10.1016/j.jnn.2018.11.001).
- Chor, W.P.D., Ng, W.M., Cheng, L., Situ, W., Chong, J.W., Ng, L.Y.A., Mok, P.L., Yau, Y.W., Lin, Z., 2020. Burnout amongst emergency healthcare workers during the COVID-19 pandemic: a multi-center study. *Am. J. Emerg. Med.* 3–5. doi:[10.1016/j.ajem.2020.10.040](https://doi.org/10.1016/j.ajem.2020.10.040).

- Donders, F., Lonnée-Hoffmann, R., Tsiakalos, A., Mendling, W., De Oliveira, J., Judlin, P., Xue, F., Donders, G., 2020. ISIDOG recommendations concerning COVID-19 and pregnancy. *Diagnostics* 10, 1–23. doi:10.3390/diagnostics10040243.
- Dumitriu, D., Emeruwa, U.N., Hanft, E., Liao, G.V., Ludwig, E., Walzer, L., Ardit, B., Saslaw, M., Andrikopoulou, M., Scripps, T., Baptiste, C., Khan, A., Breslin, N., Rubenstein, D., Simpson, L.L., Kyle, M.H., Friedman, A.M., Hirsch, D.S., Miller, R.S., Fernández, C.R., Fuchs, K.M., Keown, M.K., Glassman, M.E., Stephens, A., Gupta, A., Sultan, S., Sibbles, C., Whittier, S., Abreu, W., Akita, F., Penn, A., D'Alton, M.E., Orange, J.S., Goffman, D., Saiman, L., Stockwell, M.S., Gyamfi-Bannerman, C., 2021. Outcomes of neonates born to mothers with severe acute respiratory syndrome coronavirus 2 infection at a large medical center in New York City. *JAMA Pediatr* 175, 157–167. doi:10.1001/jamapediatrics.2020.4298.
- Eftekar Ardebili, M., Naserbakht, M., Bernstein, C., Alazmani-Noodeh, F., Hakimi, H., Ranjbar, H., 2020. Healthcare providers experience of working during the COVID-19 pandemic: a qualitative study. *Am. J. Infect. Control*. doi:10.1016/j.ajic.2020.10.001.
- Favre, G., Pomar, L., Qi, X., Nielsen-Saines, K., Musso, D., Baud, D., 2020. Guidelines for pregnant women with suspected SARS-CoV-2 infection. *Lancet Infect. Dis* 20, 652–653. doi:10.1016/S1473-3099(20)30157-2.
- Flannery, D.D., Puopolo, K.M., 2021. Perinatal COVID-19: guideline development, implementation, and challenges. *Curr. Opin. Pediatr.* 33, 188–194. doi:10.1097/MOP.0000000000000997.
- Gadamer, H., 2004. *Truth and Method. Continuum, London.*
- González-Timoneda, A., Hernández Hernández, V., Pardo Moya, S., Alfaro Blazquez, R., 2020. Experiences and attitudes of midwives during the birth of a pregnant woman with COVID-19 infection: a qualitative study. *Women and Birth* doi:10.1016/j.wombi.2020.12.001.
- Graneheim, U., Lundman, B., 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ. Today* 24, 105–112. doi:10.1016/j.nedt.2003.10.001.
- ICM, 2020. Women's rights in childbirth must be upheld during the coronavirus pandemic [WWW Document]. URL https://www.internationalmidwives.org/assets/files/news-files/2020/03/icm-statement_upholding-womens-rights-duringcovid19-5e83ae2ebfe59.pdf. (accessed 2.1.21).
- Jepsen, I., Mark, E., Nøhr, E.A., Foureur, M., Sørensen, E.E., 2016. A qualitative study of how caseload midwifery is constituted and experienced by Danish midwives. *Midwifery* 36, 61–69. doi:10.1016/j.midw.2016.03.002.
- Jones, R.M., 2020. Relative contributions of transmission routes for COVID-19 among healthcare personnel providing patient care. *J. Occup. Environ. Hyg.* 17, 408–415.
- Knight, M., Bunch, K., Vousden, N., Morris, E., Simpson, N., Gale, C., O'Brien, P., Quigley, M., Brocklehurst, P., Kurinczuk, J., 2020. Characteristics and outcomes of pregnant women hospitalised with confirmed SARS-CoV-2 infection in the UK: a national cohort study using the UK Obstetric Surveillance System (UKOSS). *Bmj* 369, 1–22. doi:10.1101/2020.05.08.20089268.
- Kujovich, J.L., 2004. Thrombophilia and pregnancy complications. *Am. J. Obstet. Gynecol.* 191, 412–424. doi:10.1016/j.ajog.2004.03.001.
- Li, Y., Scherer, N., Felix, L., Kuper, H., 2021. Prevalence of depression, anxiety and posttraumatic stress disorder in health care workers during the COVID-19 pandemic: a systematic review and meta-analysis. *PLoS ONE* 16, 1–19. doi:10.1371/journal.pone.0246454.
- Martínez-Serrano, P., Palmar-Santos, A.M., Solís-Muñoz, M., Álvarez-Plaza, C., Pedraz-Marcos, A., 2018. Midwives' experience of delivery care in late foetal death: a qualitative study. *Midwifery* 66, 127–133. doi:10.1016/j.midw.2018.08.010.
- Mizrak Sahin, B., Kabakci, E.N., 2020. The experiences of pregnant women during the COVID-19 pandemic in Turkey: a qualitative study. *Women and Birth* doi:10.1016/j.wombi.2020.09.022.
- Mor, G., Cardenas, I., 2010. The immune system in pregnancy: a unique complexity. *Am. J. Reprod. Immunol.* 63, 425–433. doi:10.1111/j.1600-0897.2010.00836.x.
- Murphy, P.A., 2020. Midwifery in the time of COVID-19. *J. Midwifery Women's Heal* 65, 299–300. doi:10.1111/jmwh.13121.
- Phoswa, W.N., Khaliq, O.P., 2020. Is pregnancy a risk factor of COVID-19? *Eur. J. Obstet. Gynecol. Reprod. Biol.* 252, 605–609. doi:10.1016/j.ejogrb.2020.06.058.
- Puopolo, K.M., Hudak, M.L., Kimberlin, D.W., Cummings, J., 2020. Management of infants born to mothers with COVID-19. *American Academy of Pediatrics Committee.*
- Qiao, Y., Li, J., Wang, J., 2012. Effects of depressive and anxiety symptoms during pregnancy on pregnant, obstetric and neonatal outcomes: a follow-up study. *J. Obstet. Gynaecol. (Lahore)* 32, 237–240. doi:10.3109/01443615.2011.647736.
- RCOG, 2021. Coronavirus (COVID-19) Infection in Pregnancy [WWW Document]. URL <https://www.rcog.org.uk/globalassets/documents/guidelines/2021-02-19-coronavirus-covid-19-infection-in-pregnancy-v13.pdf> (accessed 3.1.21).
- Republic of Turkey Ministry of Health., 2020a. COVID-19 Durum Raporu [WWW Document]. URL <https://covid19.saglik.gov.tr/TR-68443/covid-19-durum-raporu.html> (accessed 2.20.21).
- Republic of Turkey Ministry of Health., 2020b. Personel İşlemleri Genelgesi [WWW Document]. Repub. Turkey Minist. Heal. <https://dosyahastane.saglik.gov.tr/Eklenti/187166/personelislemlerigenelgesipdf.pdf?0>. (accessed 2.1.21).
- Romero, R., Espinoza, J., Kusanovic, J.P., Gotsch, F., Hassan, S., Erez, O., Chai-worapongsa, T., Mazor, M., 2006. The preterm parturition syndrome. *BJOG An Int. J. Obstet. Gynaecol.* 113, 17–42. doi:10.1111/j.1471-0528.2006.01120.x.
- Stephens, A.J., Barton, J.R., Bentum, N.A.A., Blackwell, S.C., Sibai, B.M., 2020. General guidelines in the management of an obstetrical patient on the labor and delivery unit during the COVID-19 pandemic. *Am. J. Perinatol.* 37, 829. doi:10.1055/s-0040-1710308.
- Tanacan, A., Erol, S.A., Turgay, B., Anuk, A.T., Secen, E.I., Yegin, G.F., Ozyer, S., Kirca, F., Dinc, B., Unlu, S., Yapar Eyi, E.G., Keskin, H.L., Sahin, D., Surel, A.A., Tekin, O.M., 2020. The rate of SARS-CoV-2 positivity in asymptomatic pregnant women admitted to hospital for delivery: experience of a pandemic center in Turkey. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 253, 31–34. doi:10.1016/j.ejogrb.2020.07.051.
- Tayyib, N.A., Alsolami, F.J., 2020. Measuring the extent of stress and fear among Registered Nurses in KSA during the COVID-19 Outbreak. *J. Taibah Univ. Med. Sci.* 15, 410–416. doi:10.1016/j.jtumed.2020.07.012.
- Turco, M.Y., Moffett, A., 2019. Development of the human placenta. *Dev* 146, 1–14. doi:10.1242/dev.163428.
- Van kelst, L., Spitz, B., Sermeus, W., Thomson, A.M., 2013. A hermeneutic phenomenological study of Belgian midwives' views on ideal and actual maternity care. *Midwifery* 29, e9–e17. doi:10.1016/j.midw.2011.10.002.
- Van Manen, M., 2014. *Phenomenology of Practice: Meaning-giving methods in Phenomenological Research and Writing.* Left Coast Press, Walnut Creek, CA.
- Vivilaki, V.G., Asimaki, E., 2020. Respectful midwifery care during the COVID-19 pandemic. *European Journal of Midwifery* doi:10.1111/soc4.12077.
- Warren, S., Midodzi, W.K., Allwood Newhook, L.A., Murphy, P., Twells, L., 2020. Effects of Delayed Newborn Bathing on Breastfeeding, Hypothermia, and Hypoglycemia. *JOGNN - J. Obstet. Gynecol. Neonatal Nurs.* 49, 181–189. doi:10.1016/j.jogn.2019.12.004.
- WHO, 2020a. Shortage of Personal Protective Equipment Endangering Health Workers Worldwide [WWW Document]. URL <https://www.who.int/news-room/detail/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workersworldwide> (accessed 2.10.21).
- WHO, 2020b. Clinical management of severe acute respiratory infection when COVID-19 is suspected. [WWW Document]. URL [https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected). (accessed 8.8.21).
- WHO, 2020c. Coronavirus disease (COVID-19): Breastfeeding [WWW Document]. URL <https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-breastfeeding> (accessed 2.10.21).
- Yörük, S., Güler, D., 2021. The relationship between psychological resilience, burnout, stress, and sociodemographic factors with depression in nurses and midwives during the COVID-19 pandemic: a cross-sectional study in Turkey. *Perspect. Psychiatr. Care* 57, 390–398. doi:10.1111/ppc.12659.