JCS

J Caring Sci, 2023, 12(4), 248-254
doi: 10.34172/jcs.2023.31929
https://jcs.tbzmed.ac.ir

Original Article

Novel Memories of Motherhood: Childbirth Lived Experiences of Mothers with Coronavirus Disease 2019 (COVID-19)

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Article Info

Article History:
Received: January 19, 2023
Accepted: August 30, 2023
ePublished: October 8, 2023

Keywords:
Childbirth, Coronavirus, COVID-19, Lived experience, Qualitative study, Coronavirus disease 2019

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Abstract

Introduction: The critical coronavirus pandemic presents a global challenge with dimensions yet unknown, underscoring the essential need to comprehend the lived experiences, especially for vulnerable groups. This study delves into the childbirth experiences of mothers dealing with coronavirus disease 2019 (COVID-19).
Methods: Employing hermeneutic phenomenology, this qualitative research was conducted at Mashhad University of Medical Sciences (Iran). Purposeful sampling involved 16 mothers with maximum variation. Unstructured telephone interviews collected data, analyzed using the Diekelman approach.
Results: Unveiling the theme "Novel Memories of Motherhood," four central themes emerged: "The Missing Link in Quality Care," "Coronavirus Stigma," "A lonely mother in quarantine," and "Cascade of Psychological Trauma."
Conclusion: COVID-19 acts as an intervening factor, distorting routine care and delivery programs. The focus for service providers attending to mothers in labor should extend beyond physical care, encompassing the elimination of coronavirus-related stigma and prioritizing psychological attention. This holistic approach is crucial for maintaining quality care standards.

Introduction

Since the spread of the coronavirus, has ushered in the largest global health emergency of the 21st century[1] and at present, there are no definitive treatments and nursing for this disease.[2]

Pregnancy and childbirth is a unique experience in women's lives that can have both positive and negative effects.[3] Early on in the COVID-19 pandemic, the issue of maternal health, particularly in the context of safety of delivery, vertical transmission and breastfeeding has been discussed in research[4-6] and the improvement of the quality of care has recommended in maternal health, through educating, training, and supporting of mothers in infection management.[4] In recent studies, maternal support experts drew attention to the effects of stress and psychological trauma on maternal health.[7]

Because, the mental and physical health of women is an equally important aspect of the COVID-19 pandemic, understanding how to manage infection among pregnant women and infants is an immediate priority for perinatal care.[8,9] Although qualitative methods can play a pivotal role in understanding pandemics like COVID-19, limited research among pregnant women with COVID-19, has been published.[10] So hermeneutic phenomenology was chosen, as this approach can extract the participant's experiences as COVID-19 mothers from childbirth.[9] Because this type of research method deals with hidden phenomena and concepts of personal experience; this experience is novel because the COVID-19 pandemic is a unique and emergent crisis that is intertwined with the childbirth experience that is unique to each woman.[3]

As COVID-19 mothers with respiratory problems admitted to the maternity ward, have a greater fear of childbirth and need psychological support for maternal and neonatal health. It seems necessary to increase our understanding of the mother's experiences with COVID-19 from childbirth and consequently the clinical application of research findings in psychological and health interventions.[11] So in the pandemic crisis, it is essential to make decisions and reorganization by listening to the voices of mothers to change their mindset consistent with understanding the meaning of mothers' experience of childbirth. Extracted data from mothers' experiences through an in-depth interview helps increase the care quality. This study aimed to understand the meaning of the coronavirus-infected mothers experience during childbirth.

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Materials and Methods

Our research used the Hermeneutics' phenomenological method to qualitatively analyse the experience of pregnant women with coronavirus. Dikelman's phenomenological method focuses on the experience of participants and finds shared patterns from childbirth experiences rather than individual characteristics in the scientific approach. Qualitative methods are valuable alongside traditional quantitative epidemiological methods given their open-ended nature and focus not just on "what" but on "how".[10]

By using a purposeful sampling method, we selected 16 pregnant women with COVID-19 who were admitted for delivery in the Imam Reza Hospital affiliated to Mashhad University of Medical Sciences (Iran) as a reference coronavirus from May 10, 2020 to September 7, 2020. The inclusion criteria included 1- Mothers whose infection has been confirmed by diagnostic tests. 2- Mothers who were admitted for a vaginal delivery without any restrictions on gravidity and parity. The exclusion criteria were 1- mothers who were reluctant to be interviewed and 2- Mothers admitted for elective cesarean section.

We determined the semi-structured interview outline by consulting relevant experts' opinions. The interview questions posed to the participants are the following: 1- What are the main childbirth feelings with coronavirus? 2- What are your insights in the face of delivery in the pandemic? Also, we asked the following sub-questions: 1- How did you feel when accepting the motherhood task in the pandemic? 2- Explain your delivery experience to me? 3- How did it feel to give birth at the same time as the infection? 4- Is labor management and care for you and your baby due to the risk of infection was different?

We communicated the purpose of the study with the participant in scheduled the interview time at their convenience. The interviewer possessed a PhD of Science in Reproductive health with experience in qualitative interview and a Master of Midwifery helped her in sampling that had worked as a head nurse in the coronavirus isolation maternity ward. Before to the mother's discharge from the hospital, consent was obtained for the study and she was informed that she would be contacted for telephone interviews within the next month. The telephone interview was conducted because the force to observe social distancing and quarantine conditions at the height of the COVID-19 pandemic did not make a face-to-face interview possible. Before each interview, we made sure that the mother was comfortable and had time. The telephone interviews conducted in a separate quiet room. The recorded interviews were kept strictly confidential. The interviews took 30-70 minutes per person. If any of the participants had an emotional problem after the interview, they were referred to a psychiatrist. They were allowed to leave the study at any time. The interviewer began with main interview questions by following the basic principles of counseling, such as active listening and empathy. For each participant, at least 1-3 telephone interviews were arranged to ensure data collection at multiple time points. Sampling continued until the data was duplicated and no new code appeared. Finally, 16 participants were interviewed in this study after announcing data saturation. Table 1 outlines the baseline characteristics of the participants.

Within 48 hours of each interview, the recording was transcribed and analyzed by Dikelman's phenomenological analysis method.[12] The analysis was done by an interpretive team and involved seven steps: (a) reading the interviews to obtain an overall understanding; (b) writing interpretive summaries and coding for emerging themes; (c) analyzing selected transcripts as a group to identify themes; (d) returning to the text or to the participants to clarify disagreements in interpretation and writing a composite analysis for each text; (e) comparing and contrasting texts to identify and describe shared practices and common meanings; (f) identifying patterns that link the themes; and (g) eliciting responses and suggestions on a final draft from the interpretive team. Two researchers independently reviewed and summarized meaningful statements until formulated the emergent theme. Conflicting opinions during analysis were discussed and resolved by a research group composed of a master of midwifery, a PhD of reproductive health, and an associate professor in reproductive health. We explored the experience of childbirth of mothers with COVID-19 using phenomenological methods. Lincoln and Guba explained that credibility, confirmability, dependability, and transferability ensure the rigor in qualitative research.[13] The data reduction process is summarized in Table 2.

Results

Sixteen mothers with coronavirus infection participated in the study. Of those, two mothers experienced intrauterine fetal death in the last weeks of pregnancy, one mother experienced infant death during childbirth, one mother experienced infection of her baby, and six mothers experienced preterm delivery with a gestational age of less than 36 weeks.

The emerging theme was "Novel Memories of Motherhood", which consisted of four central themes including "The Missing Link in Quality Care", "Coronavirus Stigma", "A lonely mother in quarantine" and "Cascade of Psychological Trauma". The sub-themes consisted of nine subthemes that emerged from 22 sub-subthemes. The sub-subthemes were taken from 420 codes.

The Missing Link in Quality Care

This theme was formed from two sub-themes of "Corona, A Barrier to Proper Care" and "Corona Interference in Service Provision". Regarding the topic of "Corona, A Barrier to Proper Care", the experience of many mothers participating in this study showed that their admission

Table 1. Characteristics of the participants

ID	Age	Level of education	Clinical signs				Diagnostic tests								GA	NVD/ C.S	Neonatal outcome	Apgar	Gravida
			smell/taste sense	Dyspnea	Cough	Fever	CT Scan	Lymph	WBC	CXR	PCR	ALT	AST	CRP					
1	21	Diploma	-	+	+	+	POS	23.5%	10600	NEG	POS	11	24	18.5	40	C.S	alive	10/10	1
2	25	Bachelor	-	+	+	+	POS	12.5%	7200	POS	POS	19	18	136	34	ND	alive	8/8	1
3	37	High school	-	+	+	+	NEG	8.7%	17800	NEG	NEG	11	15	10	40	ND	alive	9/10	4
4	35	High school	-	-	-	+	NEG	14.2%	8900	NEG	POS	14	35	84.6	27	ND	IUFD	0/0	3
5	37	High school	+	-	+	+	NEG	34.7	11500	NEG	NEG	17	31	88.4	33	ND	IUFD	0/0	7
6	27	Bachelor	-	-	-	+	NEG	12%	14700	NEG	POS	12	18	48	39	ND	alive	9/10	1
7	25	High school	-	-	+	+	POS	8.3%	5400	POS	POS	37	57	268	31+6	ND	alive	6/8	2
8	31	Bachelor	-	-	+	+	POS	9.7%	10800	NEG	NEG	37	54	25.5	39+5	ND	alive	9/10	1
9	26	Diploma	-	-	+	-	POS	20.3%	13000	NEG	NEG	10	24	83.8	39	ND	alive	9/10	2
10	32	High school	-	+	+	-	POS	19.7%	8400	NEG	POS	10	19	10.2	35	ND	Death	1/3	1
11	21	High school	+	-	+	-	POS	12.7%	10200	NEG	POS	16	20	23.3	39	ND	alive	9/10	1
12	36	Bachelor	+	-	+	-	NEG	20%	9300	NEG	POS	14	22	9.6	41	ND	alive	9/10	3
13	42	High school	-	-	+	-	POS	12%	9600	NEG	NEG	8	17	35.9	38+6	ND	alive	9/10	5
14	38	High school	-	+	+	+	NEG	20.7%	9700	POS	POS	9	21	50.2	40	ND	alive	9/10	4
15	18	High school	-	+	+	+	POS	13.7%	4600	NEG	POS	8	16	15	38	C.S	alive	5/9	1
16	21	High school	+	-	-	-	NEG	23.7%	12300	NEG	POS	53	33	25	35	ND	alive	9/10	1

Table 2. The data reduction process and the emergence of the main theme

Emerged theme	Central theme	Subtheme	Sub-subtheme
A novel memory of motherhood	A missing link in quality care	1. Corona, a barrier for proper care	1. Admission and hospitalization delay
			2. Practical ineptitude of the personnel
		2. Corona interference in service provision	3. Extra physical problems
			4. Facilities lagging behind the rapid prevalence
			5. Disruption in the delivery program
	1. Coronavirus stigma	3. Strange reactions	6. Inappropriate and offensive behavior
			7. Understanding the panic in relatives' face
		4. Care discrimination	8. The difference in individual protection
			9. Distancing the mother
	2. A lonely mother in quarantine	5. Removal of support coverage	10. Bizarre postpartum
			11. Laboring in solitude
		6. Sudden Breakup with infant	12. Emotional isolation of the mother - infant
			13. Breastfeeding failure
		7. Quarantined support	14. Understanding unique support
			15. Understanding exclusive support
	3. Cascade of psychological trauma	8. Mental concerns	16. Distress
			17. Worry
			18. Panic
			19. Regret
			20. Sorrow
			21. Distress
		9. Understanding harmful behaviors	22. Personnel annoying behaviors

and hospitalization were delayed because of their infection with the Coronavirus. They reported that factors such as road closures due to city quarantine, delays in referring mothers from non-referral hospitals to the COVID-19 referral hospitals, and closure of private surgeries caused the delay in their admission. They reported that delays in their hospitalization were sometimes due to suspicion of infection and waiting for the coronavirus test to be ready before admission. Sometimes refusal to admit the mother because of coronavirus has led to frequent visits to various hospitals, and her confusion despite the emergency delivery conditions.

"My pain had started, but because I had a fever, no hospital would accept me. I went to two private hospitals and begged to be admitted. But I was referred to a hospital for Corona patients, and even there, there was no empty bed and I was waiting for a long time before I was admitted". (P3)

The experience of mothers participating in this study shows that mere attention to adherence to coronavirus-specific protocols has led to the underestimation of maternal risk symptoms, negligence of necessary interventions in obstetric emergencies and lack of supervision and management of labor in monitoring the mother and fetus, and consequently to adverse delivery outcomes.

"I went to the hospital because of reduced fetal movements. I was not hospitalized due to symptoms such as coughing. The baby's heartbeat was good. But the next day, his movements slowed down and I went again, I found that my fetus had died inside my womb". (P5)

Regarding the subtheme of "Corona interference in service provision", the experience of mothers participating in this study shows that the rapid spread of corona has affected the quality of service delivery in several ways. They reported that simultaneous severe symptoms of coronavirus, such as shortness of breath, cough, and fever, were an added factor to uterine pain and contractions. These symptoms made it more difficult for them to give birth and they play a role in distorting the natural process of childbirth.

"My midwife used to say that at this stage you should hold your breath and push the baby out. But I was suffocating and I did not have the energy and strength to push." (P16)

The mothers of the participants in the study also stated that the coronavirus pandemic made many of the infrastructures and facilities related to the coronavirus outbreak not be in line with the rate of disease growth in the referral hospitals. They reported that the unavailability of an empty bed and an isolated maternity room, no use of labor pain-reducing methods, and no observing of quarantine conditions and health protocols were among the factors that led to their dissatisfaction and poor quality of care.

"I was in the same room with two other mothers infected with Corona. There was no delivery bed and I gave birth on a normal bed." (P 14).

The results of the mothers' statements show that the coincidence of their last trimester of pregnancy with the first wave of coronavirus led to disruptions in the planning of childbirth. Specialist surgeries had been closed, and many private hospitals where the mother had chosen to give birth did not admit mothers with coronavirus. The mothers also said because of the unemployment of their husbands as to the result of Corona and the following financial problems, they even could hardly afford the costs of delivery.

"I was under the care of my doctor from the beginning of my pregnancy and I was supposed to give birth in a private hospital. But because of this disease, and though it was against my wish, I had to give birth in a place I did not like." (P 2).

Coronavirus Stigma

This theme emerged from two sub-themes: "Strange reactions" and "Care discrimination". Regarding the theme of "strange reactions", all mothers participating in this study perceived feelings of stigma and discrimination from the behavior of others, especially service providers. They perceived abnormal behaviors, offensive reactions, inappropriate reactions after being informed of the mother's infection, the appearance of fear on their faces, and the feeling of being taboo.

"The staff were talking behind my back and showing me to each other. I could see the fear on their faces. It was as if they had seen a leprosy patient." (P 8).

Regarding the sub-theme of "Care discrimination", most of the mothers in this study stated that personal protective clothing, masks, and shields were used when personnel approached them. Sometimes experienced doctors and specialists did not show up at their bedsides and did not want to visit them. They showed an exaggerated reaction when they saw the slightest sign of infection. They tried to distance themselves from the mother as much as possible and to avoid intimate communication during labor pains. Most mothers experienced feelings of rejection and abandonment by staff.

"I was in severe pain and my mouth was dry from coughing and fever. I asked for a glass of water, but no one was willing to approach me unless they had equipped themselves with spacesuits." (P 1).

A Lonely Mother in Quarantine

This theme emerged from the three sub-themes of "removal of support coverage ", "sudden break up with infant" and "quarantined support". The sub-theme of "removal of support coverage" indicates that all mothers participating in this study experienced a strong feeling of loneliness due to isolation, which is contrary to the customs of childbirth. Their perception of social support such as postpartum visits was also impaired. They did

not experience being embraced by family members and did not receive emotional expressions such as kissing, congratulatory messages and birth gifts from friends, acquaintances, and family members, which are part of the delivery rituals. Therefore, they spent the postpartum period, which is a very psychologically and emotionally sensitive stage, in solitude in an isolated room.

"*After being released from the hospital, I was alone in the room for two weeks. I could not even hug my mother and husband and express my happiness at the birth of the baby. They even put my meal at the threshold of the door and left.*" (P. 15)

The mothers reported that because of their coronavirus infection, they did not experience the presence of an emotional companion like their mother, as did other newly delivered mothers. They had a strong desire to share their feelings to reduce labor pains and keep calm. Most of these mothers reported that they had been hospitalized for at least a week or two and that the most disturbing memory of the childbirth was that their mother or spouse was not at their side, especially in the case of a mother or infant complications.

"My biggest misfortune was giving birth without the presence of my mother or my husband. I just made video calls to them and cried out of loneliness." (P.13)

Regarding the sub-theme of "sudden break up with infant", all participating mothers reported that they did not have the slightest contact with the baby after birth and that all the dreams they had planned in mind during the pregnancy did not come true. They stated that they had been in contact with the fetus for nine months, talking to it and developing an emotional bonding. But soon after birth, they lost contact with the baby and longed for hugging and touching the baby. They reported that the coronavirus changed the excitement of visiting the baby into a nuisance because they were alone in the maternity ward and their babies were in the intensive care unit. They stated that the long detachment between the mother and the baby made their milk dry out and the baby had to be fed formula instead of breastfeeding.

"After giving birth, they showed me the baby from a distance of one meter and immediately transferred him to the neonatal ward, and I did not see my baby at all for 14 days. I wish at least my baby had not left me alone." (P11)

"When the baby is separated from its mother for two weeks, it no longer accepts the breast of the mother. I wanted to feed my baby on my own milk. But I did not." (P9)

Regarding the sub-theme of quarantined support, most mothers reported experiencing support and expressing empathy and attention only in certain cases and feeling lonely and rejected in other cases. During home quarantine, they received support only from their spouse or mother to whom they were emotionally dependent. Or the quarantine has been exclusively in the special ward of Corona in a referral hospital, and in other cases, the feeling of loneliness has overcome them due to deprivation of support.

"No one was as willing as my mother to take care of me. She sacrificed herself even though she might be infected." (P 6).

"I went to several hospitals before I was admitted. All of them treated me disrespectfully. The only person who noticed me was the midwife of the Corona Ward. She was an angel because she made me not feel the absence of my mother." (P 16).

Cascade of Psychological Trauma

This theme emerged from two sub-themes: "Psychological Concerns" and "Understanding Harmful Behaviors". All mothers participating in this study experienced the formation of negative emotions and feelings due to ambiguities and concerns resulting from the spread of coronavirus. The ambiguity and newness of this pandemic have caused them to experience a cascade of psychologically damaging factors in different ways. Regarding the sub-theme of "psychological concerns", these mothers expressed the experience of stress, anxiety, panic, regret, sorrow, and mental anxiety in their conversations. Most of them have afraid that they might infect the baby or other family members so that they will have a positive test result, or they felt stressed out that they or their babies might die. They were also worried because the baby was hospitalized and they were unaware of his or her health condition and nutrition. They also feared environmental pollution and they feared that they were among other corona patients and might get a more severe infection than their current infection. These mothers were upset that their delivery conditions were different from other people and regretted comparing the results of their deliveries with other mothers. Occasionally, because of their babies' infection with the coronavirus, or because of the death of their babies, these mothers experienced mourning reactions and experienced great grief.

"If I did not have the coronavirus, my baby would not have died in front of my very eyes and the pain of nine months of pregnancy would not end in futility. I was worried that if I died, he would live without me, but the exact opposite happened to me. Now I am without him. How to live ". (P.10)

Regarding the sub-theme of "understanding harmful behaviors", most of the mothers in this study stated that they were upset to see some of the behaviors and actions on the part of service providers and considered these behaviors as harmful behaviors or psychological trauma. They considered behaviors that took place regardless of the mother's psychological condition as psychological damage. Most of them believed their psychological trauma was the result of negligence, threatening the life of mother and baby, unaccountability, breaking bad news openly, intruding upon privacy during childbirth, insulting criticisms, and questioning their human dignity.

"I was in a lot of pain. I was lying down on a bed in the waiting room. Suddenly the doctor told me angrily, 'Aren't you human? Don't you have any conscience lying on the bed? Don't you think you can infect the others?". I begged her to admit me. But she didn't answer me, and, as she was leaving the ward, she told the staff, 'This mother should not be hospitalized here'. I will never forget these bitter memories" (p. 12).

Discussion

This study explored the mothers lived experience of childbirth with the coronavirus using phenomenological methods. We summarized our results into four themes: "The Missing Link in Quality Care", "Coronavirus Stigma", "A lonely mother in quarantine" and "Cascade of Psychological Trauma".

Due to the fact that qualitative studies, especially in pregnancy and childbirth, are very limited, it is not easy to study consistent and non-consistent studies in this particular field. But the unknown corona virus has caused fear and anxiety in most of the research groups. Most of the mothers mention negative experiences of childbirth during the COVID-19 pandemic, which indicates that in the newfound crisis conditions, negative memories have prevailed over the positive aspects of care. In other words, the memory of childbirth has changed from a pleasant to a bitter and yet novel experience.

The results of the first theme show that the experience of many mothers indicates that the coronavirus pandemic has led to a lack of quality care for them and has led to many delays in their transmission and admission. On the other hand, their delivery with acute respiratory symptoms had made the delivery process difficult. This result is consistent with other studies that have shown that quality care cannot be limited to the previous methods and need to define clinical guidelines for all patient groups,[14,15] especially pregnancy and childbirth,[4] because coronavirus infection has an interfering property in timely clinical care.

The second theme of this study shows that mothers with coronavirus developed stigma during labor. These mothers experience discrimination in the behavior and performance of service providers. This issue has so far only been associated with mothers with AIDS and is an emerging issue for these mothers.[16,17]

The third theme in this study shows that being forced to quarantine has led to the elimination of emotional support from those around them, and most of these mothers spent the postpartum period alone and were even deprived of seeing their babies. Therefore, recent studies have paid special attention to the psychological effects of quarantine, of course, quarantine will have deeper effects in the most sensitive stage of life such as childbirth.[18,19]

The fourth theme of this study was the psychological concerns created for these mothers such as fear, worry, stress, sadness and grief. One of mothers' concerns was about baby or family members being infected that were consistent with the study of Sun about negative emotions such as anxiety, and helplessness in caregivers of patients with coronavirus.[20] Mothers with coronavirus, on the other hand, perceived their childbirth as traumatic because the abusive behavior of the employees or threatening the life of themselves or their baby had led to psychological trauma. This result is consistent with Abdollahpour's study of the perception of childbirth as a psychological trauma.[3,21]

One of the strengths of this study is that it is the first study that has examined the experience of mothers with coronavirus infection from childbirth by qualitative method. Second, giving importance to pregnant women as a vulnerable group is a priority for research related to women's health. One of the limitations of this study is that due to the coronavirus pandemic, participants were interviewed by telephone and it was not possible to meet in person. The second limitation was that in some interviews, the mother might interrupt the interview due to things such as the baby's crying, which was resolved by calling again. It is recommended that future studies examine the effect of coronavirus psychological effects on labor, such as postpartum depression, postnatal post-traumatic stress disorder and other long-term adverse outcomes.

Conclusion

Finally, the results of this study indicate that the experience of childbirth in mothers with coronavirus infection has been affected by the nature and rapid prevalence of this disease, and their motherhood has changed from a normal to an emerging and new childbirth that has not been experienced before by anyone. Coronavirus stigma, delivery in the loneliness of quarantine, and the experience of a cascade of psychological distress and psychological trauma have made these mothers' deliveries unique. Moreover, coronavirus is as an intervening factor in distorting routine care and delivery programs in quality care. Therefore, it is necessary to pay special attention to postpartum care and their emotional psychological support in the hospital and after discharge due to the special conditions of quarantine. Elimination of stigma due to coronavirus infection and psychological attention in addition to physical care should be at the top of the work of service providers.

Acknowledgments

The researchers express their appreciation for the financial support of the Mashhad University of Medical Sciences.

Authors' Contribution

Conceptualization: Sedigheh Abdollahpour, Talat Khadivzadeh.
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Research Highlights

What is the current knowledge?

- The critical coronavirus pandemic is a global challenge whose many dimensions are unknown, and understanding the meaning of living in these conditions is essential especially vulnerable groups.

What is new here?

- During the COVID-19 pandemic crisis, it is essential to make decisions and reorganization by listening to the voices of mothers to change their mindset consistent with understanding the meaning of mothers' experience of childbirth.
- Coronavirus is as an intervening factor in distorting routine care and delivery programs in quality care.
- The experience of many mothers indicates that the coronavirus pandemic has led to the lack of quality care for them and has led to many delays in their transmission and admission.
- Coronavirus stigma, delivery in the loneliness of quarantine, and the experience of a cascade of psychological distress and psychological trauma have made these mothers' deliveries unique.

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Competing Interests
Nothing to declare.

Data Availability Statement
The datasets generated during and/or analyzed during the current study are not publicly available due to the Confidentiality of participants' personal information but are available from the corresponding author on reasonable request.

Ethical Approval
The study was approved by the Ethics Committee of Mashhad University of Medical Sciences (IR.MUMS.NURSE.REC.1399.127). All participants were given oral information about the goal of study, and telephone consent was obtained from them. Anonymity was secured.

Funding
This study was funded by Mashhad University of Medical Sciences [grant number 990165].

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