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Research

The Experience of Women Infected by the COVID-19 During Pregnancy: A Qualitative Study

Türkiye'de Gebelik Döneminde COVİD-19 ile Enfekte Olan Kadınların Deneyimleri: Nitel Bir Araştırma

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ABSTRACT

Objective: To gain deeper understanding of experiences of pregnant women infected with coronavirus disease-2019 (COVID-19) during the pandemic.

Methods: This study, which was planned as a descriptive qualitative study, was performed out with 15 pregnant women infected with COVID-19. The data were collected between January 5th and March 15th, 2021 using a semi-structured interview form and in-depth interview method. Content analysis, one of the qualitative research method, was used to evaluate the data. The research was planned based on the Qualitative Research Reporting Consolidated Criteria checklist, which is a guide for qualitative research.

Results: Four main themes were found in experiences of pregnant women infected with COVID-19: (1) "psychosocial health"; (2) "change in daily routines on quarantine days", (3) "coping" and (4) "perinatal period changes". Pregnant women experienced both psychological and physical difficulties. They used the expression "closed box" to describe the anxiety and anxious state experienced due to the uncertainty of the perinatal outcomes brought about by COVID-19 during pregnancy.

Conclusion: Understanding the experiences of pregnant women infected with COVID-19 is the first step in determining treatment and care management for nurses and healthcare professionals. During the pandemic period, pregnant women need to reach prenatal care services on time, to support them physically and psychosocially, to provide information with e-health services, and to provide remote follow-up support to cope with the process.

Keywords: COVID-19, pregnancy, qualitative research

ÖZ

Amaç: Bu çalışma Türkiye'de pandemi sürecinde koronavirüs hastalığı-2019 (COVİD-19) ile enfekte gebelerin deneyimlerini daha derinden belirlemek amacıyla planlanmıştır.

Gereç ve Yöntem: Tanımlayıcı niteliksel tipte planlanan bu çalışma, COVİD-19 ile Enfekte 15 gebe ile gerçekleştirilmiştir. Veriler 5 Ocak-15 Mart 2021 tarihleri arasında yarı yapılandırılmış görüşme formu ile derinlemesine görüşme yöntemi kullanılarak toplanmıştır. Verilerin değerlendirilmesinde niteliksel araştırma yöntemlerinden içerik analizi yapılmıştır. Araştırma nitel araştırmalar için rehber niteliğindeki Kalitatif Araştırma Raporlama Konsolide Kriterleri kontrol listesi temel alınarak planlanmıştır.

Bulgular: COVİD-19 ile enfekte gebe kadınların deneyimleri ile ilgili 4 ana tema belirlendi: (1) "psikososyal sağlık"; (2) "karantina günlerinde günlük rutinlerde değişiklik"; (3) "başa çıkma"; (4) "perinatal dönem değişiklikleri"dir. Gebeler hem psikolojik hem de fiziksel bazı zorluklar yaşamışlardır. Katılımcılar COVİD-19'un gebelik sırasında getirdiği perinatal sonuçların belirsizliği nedeniyle yaşanan kaygı ve endişeli durumu tanımlamak için "kapalı kutu" ifadesini kullanmışlardır.

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ÖZ

Sonuç: COVİD-19 ile enfekte olan gebelerin deneyimlerini anlamak, hemşireler ve sağlık profesyonelleri için tedavi ve bakım yönetimini belirlemede ilk adımdır. Pandemi döneminde gebelerin doğum öncesi bakım hizmetlerine zamanında ulaşması, fiziksel ve psikososyal anlamda desteklenmesi, e-sağlık hizmetleri ile bilgilendirme ve uzaktan takip desteğinin yürütülmesi süreçle başa çıkmaları açısından önemlidir.

Anahtar Kelimeler: COVİD-19, gebelik, nitel araştırma

INTRODUCTION

Severe acute respiratory syndrome coronavirus-2 2019 was a virus causing coronavirus disease (COVID-19) (1). COVID-19 was a new coronavirus family potentially affecting all segments of society, and whose clinical path was not completely developed for vulnerable populations, including pregnant women (2,3).

At the time of data collection, there was no safe and effective treatment for COVID-19 during pregnancy (4). In addition, none of the vaccines were subjected to specific clinical trials in pregnant women (1,5).

In the general population, the pandemic resulted in a rise in anxiety and other mental health issues (5,6). Furthermore, restrictions on movement limited interpersonal contact (6). Fear, stress, and anxiety were triggered by factors such as the rapid spread of the disease, a rise in the number of outbreaks, a lack of knowledge about the disease, uncertainties due to misunderstandings about the disease, and fear of the unknown (7). There was evidence that COVID-19 added to the anxiety of women already affected by the uncertainties that surround pregnancy (5,8). Concerns experienced by pregnant women were thought to be due to multiple causes, including COVID-19 itself, reduced support from family and friends due to social isolation, the potential for decreased income, and significant changes in perinatal care (5). Additionally, participation in prenatal appointments decreased due to COVID-19 restrictions and their increased anxiety (7,9) due to the risk to both themselves and their fetus (7). Meta-analyzes and systematic reviews have concluded that there were increases in the rates of perinatal mental health disorders, including anxiety and depression during the pandemic (5). A recent study with pregnant women in Italy found that more than half of the participants were seriously psychologically impacted by COVID-19 (2). It is known that anxiety and stress during pregnancy are associated with adverse outcomes such as preeclampsia, depression, nausea and vomiting, low birth weight (7,10), preterm birth, and low APGAR score (7). It was therefore predicted that the psychological consequences of the epidemic could have a major impact on pregnant women with COVID-19 (9).

Little was known about how pregnant women cope with the current coronavirus outbreak and its consequences (8). At this time, pregnant women and their families are particularly in need for the support of healthcare personnel, especially nurses, and it is important to determine how such support can be delivered (7). Qualitative research provides an understanding of the thoughts, views, beliefs, and attitudes of a homogeneous population group on a particular subject (2). Qualitative research conducted during the COVID-19 pandemic allows access to and interpretation of epidemiological data on experiences and perceptions of the disease and the epidemic (11). Thus, it is essential to conduct such studies across different population groups at different time periods (2). The aim of this study was to determine the experiences of pregnant women infected with COVID-19 during the pandemic, and to create a data source for nurses and healthcare professionals to refer to in the event of possible similar situations.

METHODS

Design and Sample

In this qualitative study, a phenomenological approach was taken to reveal the experiences of pregnant women with COVID-19, using in-depth interviews.

The sample consists of pregnant women over the age of 18 diagnosed with COVID-19 during pregnancy who subsequently recovered, and who can speak Turkish Being diagnosed with a major psychiatric disease was determined as the exclusion criteria.

Sampling Strategy

To avoid the need for extended face-to-face communication with the pregnant women during the period of social isolation, the interviews were conducted via cell phones. To find interviewees, the snowball sampling method was used to identify pregnant women who recovered after being diagnosed with COVID-19 (12). The first interview was conducted with a contact among the researchers' colleagues. This led to further contacts, and a working group was formed by asking each interviewee "Who else would you recommend we meet with, who was diagnosed with COVID-19 during pregnancy?" "Data saturation" is a

critical criterion in assessing the sample size in qualitative studies (13). Data collection continued until the concepts and processes (saturation point) that addressing the research questions began to repeat. Data saturation (n=15) triggered the end of qualitative data collection.

Setting

In Turkey, at the time of the data collection, those who were positive for COVID-19 or who were in close contact with these individuals were monitored in quarantine for 14 days, after which quarantine was lifted. COVID-19 vaccination started on January 14, 2021, with the approval of the Ministry of Health of the Republic of Türkiye. However, at the time of the study, no pregnant women had yet been vaccinated, including all participants. Twelve of the participants were asymptomatic and 3 of them were mildly symptomatic (fever or cough). All of the pregnant women were followed at home during the illness. Participants were interviewed during pregnancy only after they had recovered from the COVID-19 infection. Pregnancy outcomes were not monitored.

Data Collection Method

The data of the study were collected in semi-structured interviews held between January 5 and March 15, 2021. Three experts were involved in constructing the interview questions.

There are two aspects of the data collection form. To initiate the interviews, and as a transition to the main subject, the introduction section includes questions about socio-demographic and obstetric characteristics, such as age, education level, number of pregnancies, and use of assisted reproductive techniques. The second segment consists of ten open-ended, semi-structured interview questions (Table 1). The clarity of the interview form was tested with a pregnant woman who was diagnosed with and recovered from COVID-19, and had identical characteristics to the sample community. In each interview, the researchers sought and obtained the name and contact details of another potential participant. All interviewees were contacted by researchers well ahead of the interview time, after they had been personally informed by the person who suggested them. The participant was then contacted by researchers, informed that the telephone conversation would be recorded, and the meeting was scheduled a time convenient for the participant. It was recommended that the participant was in a quiet place for the interview, so that she could talk freely without distraction.

The interviews were conducted as teleconferences with the pregnant woman and two researchers present. A researcher interviewed the pregnant woman, while the other assisted in documenting the interview and noting the key points. All interviews lasted between 30-45 minutes. Participants were given the opportunity to make additional comments at the conclusion of the interview. The second author has experience of qualitative research in courses and lectures in her doctoral education, and in her doctoral thesis.

Data Analysis

The analysis of the data was carried out by all researchers based on the method proposed by Graneheim and Lundman (14). Following the interviews, the researchers listened to and transcribed the audio recordings. The participants were asked to check the accuracy of the deciphered text, and their feedback was collected.

First, the researchers reread the interviews many times to obtain a sense of the overall content of the text and to develop an analytical infrastructure relevant to the potential codes in the readings. Initial codes were decided, and drafts were made based on the inferences. The first level starting codes were collected under main themes and sub-themes. A more abstract grouping was achieved by rearranging the initial sub-themes by renaming, combining and removing irrelevant subthemes. The researchers then edited the data and interpreted the results before reaching a final consensus, which resulted in the development of 19 sub-themes, grouped

Table 1. Semi-structured open-ended interview questions

Questions about the experiences of pregnant women diagnosed with COVID-19
1. How has COVID-19 affected your life? Could you share with me?
2. When you found out your COVID-19 test was positive, how did you feel and what did you think? Could you share with us?
3. How did the quarantine process affect your follow-up and antenatal care after you were diagnosed with COVID-19? Could you share with us?
4. How were your relationships with family members after being diagnosed with COVID-19? Could you share with us?
5. How were your relationships with social environment after being diagnosed with COVID-19? Could you share with us?
6. What are your thoughts your own self, baby and on birth? Could you share with us?

COVID-19: Coronavirus disease-2019

into four main themes. The participants' key statements for descriptive analysis were cited, selected according to the themes, and study questions formed within the conceptual framework. An external auditor with expertise in qualitative analysis was consulted to confirm the appropriateness of the results and interpretation of the coding. To ensure the study's validity and reliability, the researchers employed the principles of transferability, consistency, verifiability, and credibility. In direct quotes, the labels "P1, P2, ... P15" were used to preserve the participants' privacy. The 32 guidelines of the COREQ checklist were used in reporting the qualitative research (15). Content analysis, one of the qualitative research methods, was used in the evaluation of the data, so statistical analysis didn't used.

Truthfulness

We used three criteria to ensure the rigor of the analysis and the trustworthiness of the results: reliability, verifiability, and transferability (16). The researchers determined the main themes and sub-themes that should be clustered with similar ideas to ensure reliability. All authors read the transcripts of the interview data. This analysis procedure continued until a consensus was reached among the authors. The authenticity of the data has been preserved to increase the reliability. To ensure accuracy, an expert experienced in qualitative research and familiar with the study was consulted on the relevance of the main theme and sub-themes. In providing transferability, the snowball sampling method was used to find the most appropriate sample. The participants were interviewed twice; in the first meeting, information was given about the content of the interview, and in the second, data were collected and participant confirmation was obtained. Participant confirmation was sought immediately after data collection; the researchers summarized the data collected and asked the participants to comment on its accuracy. Additionally, the this also gave participants had the opportunity to add further experiences. For transferability, data are presented by quoting directly from participant statements.

Ethical Considerations

Ethical permission was obtained from the İzmir University of Economics Ethics Committee for the study (approval no: B.30.2.İEÜSB.0.05.05-20-099, date: 21.12.2020), and the T.C. The ministry of Health's COVID-19 Scientific Research Assessment Commission granted the requisite approval.

Table 2. Socio-demographic characteristics of the participants

Participant number	Age	Education level	Profession	Occupational status	Week of infected by COVID-19	Interviewed week	Parity	Type of conception
P1	31	University	Nurse	Working	16th weeks	24th weeks	Multiparous	Spontaneous pregnancy
P2	28	University	Nurse	Working	18th weeks	24th weeks	Multiparous	Spontaneous pregnancy
P3	31	University	Nurse	Working	17th weeks	29th weeks	Primiparous	Spontaneous pregnancy
P4	32	University	Medical secretary	Working	15th weeks	22nd weeks	Multiparous	Spontaneous pregnancy
P5	31	High school	Radiology technician	Working	29th weeks	36th weeks	Multiparous	Spontaneous pregnancy
P6	37	University	Fashion designer	Working	33rd weeks	36th weeks	Primiparous	Spontaneous pregnancy
P7	32	University	Nurse	Working	4th weeks	24th weeks	Multiparous	Spontaneous pregnancy
P8	35	University	Academician	Working	26th weeks	31st weeks	Primiparous	In vitro fertilization
P9	32	University	Pre-school teacher	Working	12th weeks	18tth weeks	Multiparous	Spontaneous pregnancy
P10	27	University	Housewife	Not working	14th weeks	27th weeks	Multiparous	Spontaneous pregnancy
P11	28	University	Medical doctor	Working	11th weeks	22nd weeks	Primiparous	Spontaneous pregnancy
P12	33	University	Nurse	Working	23rd weeks	31st weeks	Multiparous	Spontaneous pregnancy
P13	31	University	Nurse	Working	23rd weeks	33rd weeks	Multiparous	Spontaneous pregnancy
P14	36	University	Manager	Working	3rd weeks	17th weeks	Multiparous	Spontaneous pregnancy
P15	30	University	Teacher	Working	23rd weeks	28th weeks	Primiparous	Spontaneous pregnancy

The participants were told about the study's aim, and that the interviews would be recorded. Since written consent could not be obtained, a text containing the required explanations about the study's aims was created on a Google Form, and a message with the connection link was sent to participants to obtain their consent. Furthermore, at the beginning of the interview, verbal consent was obtained. Copies of both the participants' interview transcripts and data were kept in a computer environment with a password known only to the researchers. This study was conducted in accordance with the principles of the Declaration of Helsinki.

RESULTS

Information containing various sociodemographic characteristics of the participants are given in Table 2. The experiences of pregnant women infected with COVID-19 during the pandemic were discussed under four main themes: "psychosocial health, change in daily routines on quarantine days, coping and perinatal period changes", and a total of 20 subthemes (Table 3).

Table 3. Experiences of women infected by COVID-19: Main themes and subthemes

Main themes	Subthemes
Psychosocial health	Sadness and desperation
	Fear
	Worry and anxiety
	Anxiety
	Contagion source searches
Changes in daily routines on quarantine days	Short break time
	Sensitivity of cleaning and hygiene
	Difficulty in taking care of children
	Social distance
Coping methods	Social support
	Strengthening immunity
	Beliefs and pray
	Avoidance from social media news
	Thought of "I survived COVID"
Perinatal period changes	Failures of tests and examinations
	Postponement of tests and examinations
	Changes in hospital selection for delivery
	Fear of being alone at home
	Increases in health expenditures
	Worries about postpartum visits

COVID-19: Coronavirus disease-2019

Psychosocial Health

The effects of being COVID-19 positive during pregnancy on the psychosocial health of women were examined under four headings: sadness and desperation, fear, worry and anxiety, and search for contagion source.

Sadness and Desperation

More than half of the pregnant women stated that they could not believe that had caught COVID-19 and that they felt very helpless and sad, especially those who had the disease at the same time as their spouses. Some expressions are given below:

My world collapsed on my head, and I wanted to throw myself off the ground . . . (P6)

I was feeling desperation. I had nobody but my husband. We were both sick, and I wondered if it could get worse. (P15)

Fear

Almost all of the multiparous pregnant women stated that they were most afraid of transmitting the disease to their children on learning that they had COVID-19.

I have a three-and-a-half-year-old son, will it pass to him? Will my baby be affected during my pregnancy? (P10)

One of the pregnant women stated that her mother had a chronic illness and was afraid that she would die if infected with COVID-19;

I said, "If I infect my mother, my mother will definitely die…" I felt incredible remorse. I could not sleep. (P5)

Worry and Anxiety

Some pregnant women experience uncertainty about the future of their fetuses, children, and themselves due to COVID-19 infection, describing this situation as a "closed box", due to lack of clarity about the health of the fetus during pregnancy.

…We had all our antenatal tests, and had some extra tests, but I am still worried, I mean this is a blackbox… (P3)

Some pregnant women were worried about who would take care of their living child if something happened to them.

…What happens to my children if I die. (P5)

The majority of pregnant women were afraid of becoming reinfected with COVID-19 in a more severe form before giving birth.

Last week, I had a sore throat. I was done, I screamed, I lost myself worrying if I were corona again. (P6)

Some pregnant women stated that they were unable to prepare for the baby, due to the anxiety that "something would happen".

There was no study on the first trimester. I was very scared, in the first weeks, there may be intrauterine growth retardation. The pulse is the first thing I want to see on an ultrasound every time. . . I don't want to buy her any clothes or something right now, for example. . . (P11)

Contagion Source Searches

Some of the pregnant women reported that they followed all precautions as instructed, even going so far as to exaggerate them at times, but that this had not stopped infection. Especially participants who were healthcare professionals reported feeling powerless due to circumstances beyond their control (e.g., their spouse's employment, working in a crowded environment, etc.).

…I was really extremely careful about the measures. I was wearing a visor and an N95. I was conscious of my social distance and avoided doing anything unless wearing gloves, but the result was failure. (P3)

Some women also blamed their spouses for bringing the disease, despite taking every precaution.

… I did not meet people. I was working flexibly at home . . . I did not even meet my own parents . . . But it came from my husband. (P8)

A pregnant woman expressed her discomfort at being close to the children as she was a classroom teacher, but could not change this.

… I feed the children, change their clothes, perform all kinds of caring. I admit that we do not follow the rules of social distance. I have no chance to say, "Please don't hug me, let's keep our distance." (P9)

Changes in Daily Routines on Quarantine Days

The lives of pregnant women infected with COVID-19 have changed in a matter of days due to the disruption of daily routines. While some of the working pregnant interpreted it as a short break from work and rest time, some of them mentioned the difficulties of social isolation at home.

A Short Breaktime

Some of the pregnant women (n=2) considered the quarantine phase as a short break from the hectic pace of work.

Of course, does this disease can not be an advantage, but my husband and I both work really hard. It was good to spend 15 days together. (P9)

Sensitivity of Cleaning and Hygiene

Some pregnant women, especially those without a private space at home, stated that they had to pay extra attention to hygiene to prevent the disease from spreading to their family members.

I had a bath after everyone else was asleep. I disinfected the bathroom and sink after each use. I used cardboard cups and changed toothbrushes all the time. Households were not infected… (P14)

Difficulty in Taking Care of Children

During the quarantine period, some pregnant women stated that they felt extremely tired due to COVID-19 and that they could not spare time for their children.

It doesn't benefit you or your child much because you do not feel well or safe. It is inefficient and you cannot spare a lot of time. (P1)

Social Distance

Some of the pregnant women stated that they tried protecting their spouses, but because they could not cope with the process alone, they gave up on complying with the social distance rules.

We said that at least one should stay isolated in the house, so we kept my husband in a separate room. But I had a hard time when taking care of a child and cooking. I gave up. Four days later, my daughter and then my husband had a fever. This time, I had to care for both of them. (P9)

Some of the pregnant women stated that, when they were positive, they followed very strict social distance rules, living in separate houses from their family in order not to infect their children and spouses, and this situation drained them emotionally:

I had a three-and-a-half-year-old boy. When COVID-19 first came out, we were separated for a month. This worn me out. As a mother, going into quarantine and staying away made me sad. We went into different the houses and spent the quarantine alone at home. (P7)

COVID-positive pregnant women who had to live in the same house with family members during quarantine stated that they were forced to live in separate rooms.

I was in my own room, and my mother was in her own room. We had a corona in September. The weather was hot, so my husband and children lived on the balcony. (P5)

Coping Methods

To cope with the COVID-19 infection, pregnant women exhibited avoidance behaviors from social media in order not to receive news about infected patients. Social support and consuming foods that increase the immune system have been effective in coping with COVID-19 infection. Additionally, the presence of antibodies due to the COVID-19 infection had a relaxing effect.

Social Support

During the quarantine process, pregnant women stated that they received support from their spouses, family, friends, neighbors, nurses, and doctors.

My husband's family was extremely helpful. Everyone sent food for ten days, so I didn't have to cook at all. (P9)

Our family doctor was really involved and called us almost every day. Every day inquired about whether I had any symptoms. (P6)

My friends were very helpful, and my phone was never turned off. They brought food with them. When our doorbell rang, I was overjoyed. (P12)

My biggest supporter was my neighbors. Every day, a my neighbor cooked and sent enough food for everyone in the house. (P5)

Strengthening Immunity

Pregnant women reported that they consumed certain foods and beverages (onions, garlic, pickles, bananas, bone broth, and thyme infusion) more frequently and took nutritional supplements to promote healing.

I definitely drank thyme tea every day and even tried giving my child a spoon or two. I often made soup for bone broth… We also ate plenty of raw garlic and onions. I cut the onion and smell it, … as I drew it, I felt it bitter and smell. The smell came immediately on the third day . . . (P13)

After I got a corona, my doctor started vitamin C. After selenium, propolis and zinc, I use magnesium, omega 3 and vitamin D. (P6)

Beliefs and Prayer

Pregnant women reported praying about their worries about the illness and emphasized their belief in destiny.

I am not going to imprison myself. Now I say protection is from Allah. … I believe it (fetus) is not affected . . . (P14)

Avoidance From Social Media News

The majority of pregnant women reported that social media had a negative effect on them.

. . . Maybe it's ridiculous, but I don't follow-up posts on social media because I'm badly affected. I'd rather stay away. (P6)

Thought of "I survived COVID"

Some said that once they were free of the disease, their fears caused by the uncertainty vanished.

I had my turn. I have antibodies, I say nothing will happen, and I subconsciously relax myself. (P14)

Perinatal Period Changes

Some of the pregnant women stated that they were affected by both health services and social and economic changes. In some, prenatal care visits were interrupted. Some of them had to choose the hospital accordingly in order not to be alone in the birth, so there was an increase in health expenditures.

Postponement of Tests and Examinations

Pregnant women who had to stay at home during the quarantine-experienced disruptions and delays in some important tests and follow-ups during pregnancy.

As the disease intervened, my glucose screening test was delayed to the 28th week. (P8)

I bled for 3 days during the quarantine period. Frankly, I thought the baby had gone, and I was scared. I could not go to the doctor either. (P14)

Changes in Hospital Selection for Delivery

Most of the participants planned to attend private hospitals with maternity units rather than public hospitals, due to the risk of re-infection with COVID-19 in the hospital at birth.

Although it is a private hospital, the hospital is the biggest risk environment, and COVID is everywhere. Therefore, I am afraid of being caught again in that environment. (P14)

Fear of Being Alone at Home

Most of the pregnant women (n=10) stated that they feared being left alone during the delivery because of the possibility of their relatives not being admitted to the hospital.

I guess they will not be able to let my husband be with me when giving birth. I will give birth alone. It makes me sad that no one is with me. (P15)

Increases in Health Expenditures

Because of the risk that hospitals would not accept them for the delivery, they chose private health facilities, rather than public pandemic hospitals, despite the extra financial burden.

We preferred a hospital (private) without a COVID clinic. (P6)

Worries About Postpartum Visits

Some expressed concern about the inability to conduct cultural traditions, such as mother-baby visits after childbirth. For some, this concern stems from their inability to restrict the number of visitors at hospital, and for others, and the inability to admit any visitors to their homes.

They will want to see my baby and buy a gift, but I will not be able to accept anyone in my house. I am worried that we will not be able to meet many people for a very long time. (P9)

I worry if my husband's friends come to visit at the hospital. (P11)

DISCUSSION

In this study, the experiences of women infected with COVID-19 during the pandemic were examined under four main themes "psychosocial health, change in daily routines on quarantine days, coping methods, and perinatal period changes", and it was determined that pregnant women experienced many difficulties while infected with COVID-19.

Psychosocial Health

Most of the pregnant women reported experiencing sadness and desperation if their spouses were positive simultaneously, and experiencing the fear of transmitting the disease to their children and elderly family members. Similarly, a review found that pregnant women's main concerns were their elderly relatives, children, and unborn babies, respectively, during the COVID-19 pandemic (17). They experienced worry and anxiety concerning issues such as who would care for their children if something bad happened to them, and the possibility of catching the disease again in a more severe form during pregnancy. It has been reported that uncertainty and doubt increase fear and anxiety in pregnant women (7). In our study, pregnant women expressed their uncertainties about their baby's health using the "closed box" analogy. An analogy that supports this statement of pregnant women is the authors' definition of women's experiences of becoming pregnant during COVID-19 as being clouded by the unknown (18). Some studies have reported that pregnant women experience feelings such as fear and anxiety about their babies', their families' and their own health, even if undiagnosed with COVID-19 during the pandemic process (2,6,10,19-22). Healthcare professionals must increase attention toward the mental health of pregnant women diagnosed with disease during crisis processes, such as the COVID-19 pandemic, and to focus on interventions to increase psychological resilience (10,21).

Changes in Daily Routines

At the time of data collection after being diagnosed with COVID-19, pregnant women were required to remain in home quarantine for 14 day; two of the pregnant women regarded this process as a short break from work and evaluated it as a positive experience.

However, pregnant women sharing the common areas at home with their family members stated that they were tired by the extra effort needed for cleaning and hygiene practices. Those who felt extreme tiredness due to illness could not spare enough time for their children. During the quarantine period, some tried protecting their spouses by keeping social distance and living in separate rooms. However, some stopped applying social distancing rules, being unable to cope with multiple tasks such as housework, childcare, and cooking. Only two pregnant women evaluated the quarantine process positively, while the others reported experiencing a difficult and troublesome process. Qualitative studies conducted in Turkey also reported that the pandemic affected adaptation to pregnancy both negatively and positively (23), and changed daily routines (7). Our findings reveal that, to facilitate their work, pregnant women in quarantine at home need psychological and physical support.

Coping Methods

Social support systems have an important place in individuals' lives. Interpersonal relationships play an important role in maintaining health by providing emotional, material, and cognitive assistance to individuals (2). In our study, it was determined that pregnant women received social support from their families, colleagues, and neighbors during the quarantine process. Pregnant women with strong social support systems stated that they felt psychologically stronger due to communication established via phone. Additionally, they reported that the information received by phone from health personnel and the doctor had a significant effect on their state of mind. Similarly, in a Swedish qualitative study, pregnancy information gained through interviews with midwives over the internet was considered beneficial. However, physical visits continued in maternity care in Turkey, and telehealth services were not substantially employed during the pandemic period (18).

Some pregnant women stated that they use certain foods and nutritional supplements such as onions and garlic, which they believe will boost their health and strengthen their immunity. Some pregnant women emphasized spiritual aspects, praying and having faith that nothing bad would happen to their baby. Some believed that antibody production because of the disease would prevent re-infection, while others considered that developing the disease early in pregnancy is beneficial. The majority of pregnant women avoided social media news, to avoid its negative emotions and effects. Similar results were obtained in other qualitative studies conducted in Turkey (7,23).

Perinatal Period Changes

Access to health care is one of the most significant challenges facing pregnant women during the pandemic

(24). In our study, pregnant women stayed at home during the quarantine period, or until the test turned negative, causing delays in some antenatal tests and examinations. Mothers need to know that the baby is well and to have regular check-ups and examinations, and their failure to do so increases anxiety and feelings of neglect (18). In line with these findings, various studies found that during the pandemic period, canceled pregnant women's appointments led to inadequate and low -quality antenatal service (24,25).

Pregnant women tended to choose private hospitals to provide assurance in this regard, to avoid the risk of being re-infected in public hospitals, or risking being refused access to public hospitals for delivery. This situation has increased economic costs in pregnancies during the pandemic period. Kajfy et al. (26) drew a similar conclusions in their study. Due to the pandemic, in some health institutions in Turkey, as in many countries, there were restrictions on the participation of spouses in perinatal health services and the presence of companions during the birth and postpartum period. For this reason, pregnant women in our study worried about being alone at birth and in the early postpartum period. In some studies, because of the perceived risk of transmission of COVID-19 infection in hospitals, it was determined that pregnant women postponed their examinations, minimized their hospital stays (10,19,24), and were more likely to request cesarean delivery (7,8). Nurses should be mindful of pregnant women's support needs and be aware that local and national limits on visitors and companions can increase the support needed (5).

Some pregnant women stated that they were worried about neglecting postpartum social rituals (such as home visits, giving gifts for the baby) due to the pandemic, and some expressed sadness at this. Kumari et al. (2) found negative influences on the mental well-being of women in the perinatal period when they could not fulfill cultural practices due to the pandemic. An Australian qualitative study also stated that they were worried about not being able to share the joys of pregnancy with their loved ones (27).

This study had some limitations. Interviews rely on memory recall, since the quarantine processes of pregnant women had ended before the data collection process. Additionally, the study included pregnant women infected with COVID-19 in different trimesters. Video conference interviews were planned, but all of the pregnant women preferred to conduct interviews over the phone, and it was impossible to observe their facial expressions and emotions during the interview. As only a limited number of pregnant patients infected with COVID-19, our results cannot be generalized to all populations. Our study contributes to the literature by revealing the experiences of women infected with COVID-19 during the pandemic process through in-depth interviews.

CONCLUSION

COVID-19 and quarantine processes have negatively affected pregnant women's psychosocial health by causing worry, anxiety, and fear. Pregnant women were first concerned about the health of their babies, followed by their children and family members. Quarantine practices were psychologically and physically exhausting during their illness, and negatively affected their well-being. In this process, they were supported in their daily work (housework, cooking, child care) by family, friends, and spouses, including via telephone communication The disruption of perinatal controls and examinations during the quarantine period increased the anxiety over risks to the unborn baby. This situation and the uncertainties experienced were defined as "closed box" by the pregnant women. The phone support provided by nurses, midwives, and physicians (routine antenatal cares, psychological, birth preparation classes, breastfeeding consultation) became important. To reduce pregnant women's anxiety and fear in case of possible future contagious diseases and quarantine applications, it is recommended to conduct and support perinatal services and training as e-health (i.e., phone, internet) services and to establish follow-up steps to facilitate remote follow-up systems.

ETHICS

Ethics Committee Approval: Ethical permission was obtained from the İzmir University of Economics Ethics Committee for the study (approval no: B.30.2.İEÜSB.0.05.05-20-099, date: 21.12.2020), and the T.C. The ministry of Health's COVID-19 Scientific Research Assessment Commission granted the requisite approval.

Informed Consent: The participants were told about the study's aim, and that the interviews would be recorded. Since written consent could not be obtained, a text containing the required explanations about the study's aims was created on a Google Form, and a message with the connection link was sent to participants to obtain their consent.

Authorship Contributions

Concept: M.U., Design: M.U., D.K., T.Y., Data Collection or Processing: M.U., D.K., Analysis or Interpretation: M.U., D.K., T.Y., Literature Search: M.U., D.K., T.Y., Writing: M.U., D.K., T.Y.

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