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Iranian pregnant women's experiences during the coronavirus disease 2019 pandemic: a qualitative study

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Abstract

Background: Prevention and control of coronavirus diseases (COVID-19) in pregnant women has become a major concern. The study was conducted to explain the Iranian pregnant women's experiences during the COVID-19 pandemic.

Methods: This qualitative study was conducted with conventional content analysis. The pregnant women were selected through purposive sampling from six urban health centers until data saturation. Semi structured interviews were conducted through telephone with the interview guide. Systematic thematic analysis was used to identify and organize themes into clusters and categories across interviews.

Results: Twelve pregnant women were recruited. Three theme categories were extracted from data analysis; "unpleasant feelings during pregnancy", "adjusted lifestyle" and “safe pregnancy care”. The pregnant women, while paying attention to the importance of pregnancy care, were forced to limit, delay or modify some cares in order to be safe.

Conclusion: The pregnant women experienced unpleasant feelings in this crisis; therefore, they should receive the necessary consultation to maintain mental health. The pregnant women reported some changes in their lifestyles and pregnancy care in order to prevent the disease. Regular training for all pregnant women is necessary to manage pregnancy period while maintaining the maternal and fetal health in crisis.

Keywords: COVID-19, Pregnant women, Feeling, Prenatal care, Qualitative

Introduction

The management of the pandemic of the coronavirus (COVID-19) is a very significant issue due to its widespread spread throughout the world (1). This pandemic disease has affected all important economic, political, social, military, and psychological aspects in the world. The psychological effects of this viral disease on the mental health of different societies are of great importance (2). The unbridled outbreak of Covid-19, the adverse condition of patients isolated in the intensive care unit with acute respiratory problems, the lack of an effective drug treatment, and ultimately mortality from this disease are the most important factors that can affect the mental health of infected people (3, 4). Various studies have reported psychological disorders affected by Covid-19 such as anxiety, fear, depression, emotional changes and insomnia (5).

In the context of the spread of the disease, the fear of the disease, the fear of being infected with the virus and the transmission of the virus to others increases dramatically. This concern is much higher in families with young children or pregnant women (6).

With the spread of coronavirus, the incidence of pregnant women is also increasing (7). Prevention and control of this disease in pregnant women and the potential risk of vertical transmission has become a

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major concern (8). The pregnant women may be at greater risk for worrying and caring for their fetus because of the risk to their fetus. On the other hand, due to quarantine and the possibility of infection, they have trouble receiving routine care for their pregnancies (9) . Healthcare providers should be aware that adverse effects may occur due to the restriction of the routine prenatal care. As a result, the necessary prenatal care and consultations should continue (10).

Given the spread of COVID-19 disease and the importance of the health of the pregnant women, a qualitative approach can be helpful in understanding the pregnant women's experiences and perspectives in this crisis. The result can be valuable to decision makers and policymakers in the health care system of country. Therefore, this qualitative study was conducted to explain the Iranian pregnant women's experiences during the COVID-19 pandemic.

Materials & Methods

This qualitative study with conventional content analysis was done to explain the pregnant women's experiences during coronavirus disease crisis in Iran. This research was approved by the Ethics Committee of Babol University of Medical Sciences (IR.MUBABOL.REC.1399.110). Written informed consent was obtained from all individual participants included in the study. The participants were recruited through purposive sampling. They were selected from six urban health centers in north, south, east and west of Babol, a city in north of Iran. They were invited to participate actively and voluntarily in individual interviews (obtaining verbal informed consent) with permission to record interviews. In the current quarantine situation, telephone interviews were conducted. In this study, sampling continued with maximum variance until data saturation. That means that no new codes or categories from participants emerged.

Semi structured interviews with open-ended questions were conducted between May 3 and June 10, 2020 and continued with twelve pregnant women. At the beginning of each interview, the purpose of the research was explained and the interviews were recorded with permission. Interviews began with a warm up and personal profile questions, and then the women were asked open-ended questions to share their experiences about the subject in the interview. Some of the interview questions are as follows:

"When you noticed the coronavirus epidemic, what came to your mind?", "Explain your experience during this time?", "What steps have you taken in this regard?", "What changes have you made?", "What has caused these changes?". The probing questions were also used during interviews for better understanding and more description topics (such as: "Please explain more about this.", "What do you mean?", "Why?" and "How?"). The duration of the interview varied from 16 to 27 minutes, depending on the complete expression of experiences. The recorded interviews were transcribed verbatim within 48-72 hours of the interviews and the inductive thematic analysis was done.

Systematic thematic analysis was used to identify and organize themes into clusters and categories across interviews. The transcripts were carefully read several times by two researchers from the research team and coded for all emerging concepts. Subsequent interview codes were compared with each other and with the previous interview codes. Then they were classified according to the similarities and differences in the main concepts. The authors agreed on three categories after several reviews.

The credibility of the data was done by the interviewer using the summarizing of the pregnant women' statements (member check). To provide dependability, the codes, clusters, and categories were independently extracted by the first and second authors (experts in qualitative study). To increase the confirmability, themes were analyzed by constantly checking the data and bracketing on preconceived ideas.

Results

The current study's sample consisted of 12 pregnant women who had health records in six selected health centers in Babol (Table 1).

They were regularly receiving their prenatal care in these centers before COVID-19 crisis. Three theme categories were extracted from the analysis of the pregnant women's experiences in COVID-19 crisis (Table 2): "unpleasant feelings during pregnancy", "adjusted lifestyle", and "safe pregnancy care".

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Table 1. Characteristics of participants

Participants	Age, Years	Education	Occupation	Sufficiency of income	Gestational age, weeks	Gravid
Participant 1	26	Bachelor Degree	No	Good	22	1
Participant 2	22	University student	No	Good	38	1
Participant 3	26	Diploma	No	Good	24	1
Participant 4	27	Bachelor Degree	No	Moderate	9	1
Participant 5	34	Master Degree	Yes	Good	33	2
Participant 6	41	Master Degree	Yes	Moderate	22	1
Participant 7	24	Bachelor Degree	No	Moderate	32	1
Participant 8	30	Diploma	No	Good	15	3
Participant 9	36	Diploma	No	Good	13	2
Participant 10	28	Bachelor Degree	Yes	Good	39	1
Participant 11	29	Master Degree	Yes	Low	34	1
Participant 12	34	Diploma	Yes	Moderate	32	2

Table 2. Theme categories and clusters

1. Unpleasant feelings during pregnancy
A. Worry and fear
B. Become obsessed
C. Decreased tolerance threshold
D. Feeling of sickness
E. Be discouraged
2. Adjusted lifestyle
A. Negative interpersonal communication
B. Pay attention to hygiene
C. Changing the diet plan
D. Restrictions on social activities
E. Management of concerns.
3. Safe pregnancy care
A. Restrictions on prenatal care
B. Virtual care
C. Adjustment of pregnancy care

Theme category 1: Unpleasant feelings during pregnancy

The participants' statements show that concomitant pregnancy with COVID-19 epidemic led to unpleasant feelings during pregnancy.

Theme cluster 1-1: Worry and fear

The pregnant women shared their experiences that the presence of the disease in society has led to worry and fear in various aspects of life, especially in relation to pregnancy, fetus, and childbirth. They expressed this concern and fear in different terms; worrying about catching COVID-19 and its transmission to the fetus, worrying about the susceptibility of pregnant women, worrying about the fetal miscarriages and death, the fear of congenital and genetic abnormalities in the fetus, the fear of damage to fetal intelligence, and lack of companionship during childbirth and after that.

"My biggest worry was, for example, if I get infected, my baby will get it too, it has a negative effect on my baby, and I may even lose my baby." (P7)

"I'm always worried that my baby will be born with low birth weight and she needs special care, or I'm afraid my baby will have abnormalities or congenital disorders on genetic, bone, and heart. "(P2)

"The biggest worry is childbirth, what should I do? What should I do with a small child? Neither my mother nor anyone can come to me; I am alone during childbirth and after that. My problems will increase." (P5)

Theme cluster 1-2: Become obsessed

High transferability and stability of virus on surfaces of objects, and also the different syndromes of COVID-19 infection have lead the pregnant women experienced the obsessive thinking. The obsessive thinking was about paying attention to hygiene, symptoms of the disease, and fetal health.

"I think I became obsessed; I always wash my hands. For example, I wash my hands, the moment I touch the phone, I wash my hands again."(P3)

"All the time, I was counting my baby's movements at home or for example, if I had a little cough, fever or a headache, I was worried I might get infected." (P6)

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Theme cluster 1-3: Decreased tolerance threshold

Staying at home, in quarantine, and restrictions on the social activities during COVID-19 crisis led to decreased tolerance threshold in pregnant women. They highlighted that got angry quickly and became aggressive with their husbands.

"I think that sitting at home is a disease, I don't have the patience, when my husband comes, he is tired, too, but I expect a lot from him. I'm not bored of reading a book; I'm not bored at all." (P6)

"Staying at home made me nervous, I'm not bored. I used to help my daughter with homework, but not now." (P8)

Theme cluster 1-4: Feeling of sickness

The pregnant women reported decreased sleep and appetite, a sense of introversion, and in general, the feeling of being sick.

"At first my appetite was good, but I have no appetite now. My sleep is very low; I can't sleep at night." (P6)

"It was a very bad time, I just cried, I felt sick. I feel that I can't live in calm, the change has been huge." (P1)

Theme cluster 1-5: Be discouraged

The pregnant women stated that they did not enjoy their pregnancy and did not have a pleasant pregnancy, which discouraged them from living.

"I think that life is cold and soulless. we always have to pay attention to hygiene. We can't go out and communicate with anyone. I like to go out." (P6)

"I got pregnant after ten years. I wish I could get pregnant later and I didn't have these worries." (P12)

Theme category 2: Adjusted lifestyle

The second category of themes is: "adjusted lifestyle", which included five clusters.

Theme cluster 2-1: Negative interpersonal communication

All the pregnant women mentioned the fact that they made "negative interpersonal communication" during COVID-19 epidemic. This cluster emerged in response to the health warnings at social distances to prevent the disease.

"Well, that was upsetting. I am the only child in the family. I couldn't see my dad and mom. Yeah, it was really sad that I couldn't hug my dad and mom." (P1)

"Our life was hard. We were in quarantine. I can't stay in quarantine for long. Well, if I don't communicate, I get depressed." (P8)

Theme cluster 2-2: Pay attention to hygiene

All pregnant women repeatedly stated that they did hygienic items such as frequent hand washing and disinfection of things during this period.

"My husband and I used to disinfect the whole house with alcohol and like this such as mobile phone, pen, TV remote…. If we touched anything, we had to disinfect our hands at that moment. We disinfected everything bought. We didn't have to put it directly in the refrigerator." (P6).

"When we bought bread, we had to warm it up, or disinfect the surfaces, the doors, we wore masks and gloves." (P9)

Theme cluster 2-3: Changing the diet plan

Almost all participants experienced changes in their diet to strengthen the immune system and prevent the occurrence of COVID-19 disease. Here are some examples of quotes:

"For example, I ate certain foods or things that strengthened my immune system, such as orange juice and took vitamin C pills." (P7)

"Having herbal tea such as cinnamon tea, ginger tea… I mix everything I have for example, cinnamon, thyme, jujube ..." (P9)

Theme cluster 2-4: Restrictions on social activities

This cluster was formed according to the pregnant women's statements about not going to public places to prevent the epidemic.

"Then I say we had our own special plans, we planned for our holidays, we planned for special ceremonies, I am a happy person and I loved these things very much, I got away from these good things in my life."(P6)

"We do not have much fun anymore. Long quarantine is annoying to me. In corona epidemic, I didn't even go out to shop. I bought everything online, my newborn's clothes and other needed things." (P10)

Theme cluster 2-5: Management of concerns

The latest cluster in the adjusted lifestyle theme category is "management of concerns". This cluster refers to a set of experienced practices that women apply to control and reduce their worries and anxiety. Almost all pregnant women, based on their interests and beliefs, decided to do something to alleviate the worries created during COVID-19 crisis.

"I tried to reduce my worries by reading Quran or praying. By communicating with God, by heart

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contacting with God, I keep calm. I was thinking about the positive aspects. I was trying to use news sources that I think are very credible, such as our own newscasts or TV shows for pregnant women."(P2)

"I turn on the incense stick, I lit a candle, I try not to think about corona, I was trying to do those." (P6)

Theme category 3: Safe pregnancy care

The pregnant women, while paying attention to the importance of pregnancy care, were forced to limit, delay, or modify some cares in order to be safe.

Theme cluster 3-1: Restrictions on prenatal care

The pregnant women stated that they limited or delayed many of their pregnancy care, because they were worried about getting Covid-19. These cares were such as ultrasound of the fetal, the routine pregnancy visits, and fetal health screening.

"During corona crisis, I did not go the health center or my doctor's office. In my opinion, if I went, I would get this infection. My pregnancy care was not performed on time. I delayed the fetal health test and had to have an amniocentesis. If I had done this test on time, I wouldn't be amniocentesis now. This is a very difficult test." (P6)

"I delayed my pregnancy care and did not do the tests. I only was going for the essential care." (P10)

Theme cluster 3-2: Virtual care

According to the quotes of pregnant women, virtual care was one strategy for receiving pregnancy care during corona crisis. The healthcare providers have created a group in the virtual space such as WhatsApp or Telegram to provide care for the pregnant women. In this virtual group, the questions, problems, and concerns of pregnant women were answered. Of course, along with this virtual program, telephone counseling was also providing.

"Midwives have formed a WhatsApp group for pregnancy care. We sent the test and ultrasound sheets in WhatsApp. Midwives see them and answer."(P2)

"If I had a problem or question, I would contact my midwife by phone and I was guided. For example, about my constipation, I got a phone call and my problem was solved." (P11)

Theme cluster 3-3: Adjustment of pregnancy care

This cluster is another strategy for the pregnant women who had missed out the face-to-face prenatal care or were deprived of some of the health-promoting group programs during COVID- 19 crisis.

"I couldn't go to the doctor; I was measuring my blood pressure and weight at home." (P12)

"I can't go to the pregnancy classes; I prefer to read a book to get information." (P7)

"Exercising during pregnancy is good for my mood as well as making my childbirth easier; I did these exercises at home." (P2).

Discussion

Content analysis of the pregnant women's statements showed that the COVID-19 crisis in pregnancy leads to the deprivation of "positive pregnancy experience". The positive pregnancy experience is emphasized by world health organization (WHO) in line with sustainable developmental goals (SDG) and it can lead to a healthy motherhood (11).

COVID-19 crisis affected the mental health of the pregnant women in our study. Their quotes show that they experienced unpleasant feelings during pregnancy. Some pregnant women wished they had not been pregnant during COVID-19 crisis, and their pregnancies were delayed, so they could enjoy their pregnancies.

One of the most frequently repeated codes in the pregnant women's quotes was their worries about the health of the fetus. Various studies demonstrated that fetal health is the most important concern for pregnant women (12, 13). In a qualitative study by Cote et al., concern for fetal health was one of the clusters extracted and the most important concern of the pregnant mothers during pregnancy (12). Mothers believe that the fetus grows inside their body, so they are responsible for the health of the baby (12). It is expected that in the critical period of COVID-19, fetal health concerns in pregnant women will be more than normal. In this line, Brooks et al. showed that the fear of COVID-19 infection and transmitting virus to others in COVID-19 crisis increases dramatically. This concern is greater in pregnant women than in other family members (6).

Some of the feelings experienced by the pregnant women were obsession to repeated checking of COVID-19 symptom and fetal movement, getting angry quickly, aggression, feelings of hopelessness, boredom, and decreased sleep and appetite. Colai and

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et al., in a qualitative study, reported that negative emotions (confusion and pessimism) in home quarantine was one of the main themes' category extracted from the interviews and experiences by students in COVID-19 crisis (14). Also, sense of isolation, sense of insecurity, and uncertainty about life were important themes extracted from patients' experiences in Toronto in quarantine SARS infection (15).

Experiences of the pregnant women showed that COVID-19 crisis adjusted their lifestyle. These changes focused on disease prevention due to the high virus transmission and spread of COVID-19 infection. Cluster of "negative interpersonal communication" was formed with home quarantine, restrictions on communication, less connection with others, and even the deprivation of parental hug. Pregnant mothers need more emotional support, while their support is reduced during COVID-19 crisis due to lack of communication with relatives [16].

The pregnant women during COVID-19 crisis experienced cleaning and hygiene tips, restrictions on social activities, and changing diet plan. They changed their diet plan to strengthen the immune system and increase resistance to COVID-19 infection. This change is in line with the culture of Iran, encouraging the application of traditional medicine (such as herbal teas) or according to modern medicine plan (pharmaceutical supplements). Nutritionists recommend that proper nutrition plays an important role in the prevention and management of COVID-19 infection by increasing immune system (17). Another change in the pregnant women's lifestyle was their concerns for strategies based on their beliefs and favorite activities during COVID-19 crisis such as communication with God, reading the Qur'an, receiving information from reliable news sources (radio and television programs), positive thinking, lighting candles, and reading favorite books.

The last theme category extracted from the pregnant women's statements in our study was "safe pregnancy care" which is specific to their pregnancy. The pregnant women's experience showed that COVID-19 crisis has led them to make changes in pregnancy care to keep them safe to the disease. These changes included delaying care, receiving virtual care, and adjusting pregnancy care. Pregnancy care is one of the most important indicators of preventive medicine and plays a main role in improving the health of mother and child (18). Ministry of Health and Medical Education, in collaboration with health providers, provided virtual care (WhatsApp, Telegram) for pregnant women. Providing virtual care was one of the best solutions to the COVID-19 crisis for prenatal care. These women noted that virtual care was effective in reducing their problems and worries. Modern technologies can provide an opportunity to access maternal and infant health services (19). It is one of the best ways to overcome the challenges of pregnancy care (20). Adjusted pregnancy care was another approach that the pregnant women experienced to cope with the limitations of prenatal care. Due to deprivation of attending pregnancy classes, the pregnant women tried to get appropriate and useful information from reliable medical sites and medical books. They also did some possible care at home, such as blood pressure and weight control, fetal movement checking, walking, and pregnancy exercises.

Given that the pregnant women reported some changes in their lifestyle and pregnancy care in order to prevent COVID-19 disease, regular training and consultations for all pregnant women is necessary to manage this important pregnancy period while maintaining the maternal and fetal health in COVID-19 crisis.

The limitation of the present study was that all pregnant women were interviewed by phone as they did not want to get out of house at least due to COVID-19 crisis. As a result, it was not possible to receive non-verbal cues over the phone.

Conclusion

In summary, the present study explored the pregnant women's experiences during coronavirus disease crisis. Our findings indicated that the pregnant women experienced unpleasant feelings in this crisis; therefore, they should receive the necessary consultation to maintain mental health. All pregnant women reported some changes in their lifestyles and pregnancy care in order to prevent the disease. Regular training for all pregnant women is necessary to manage this important pregnancy period while maintaining the maternal and fetal health during the crisis.

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Conflicts of Interest

The authors declare that no competing interests exist.

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