

Explaining the Psychological Distress of Women with High-Risk Pregnancies in Iran: A Qualitative Study

Abstract

Background: Psychological Distress (PD) is one of the most common mental disorders during pregnancy and involves stress, anxiety, and depression. According to the literature, High-Risk Pregnancy (HRP) is a major physiological risk factor associated with PD during pregnancy. The main purpose of this study was to explore the perception and experience of women with HRP who, based on standard questionnaires, had moderate-to-severe stress and anxiety scores. **Materials and Methods:** This qualitative study was conducted using conventional content analysis from December 2020 to June 2021. To this aim, 16 women with HRP were purposefully selected from Imam Khomeini Hospital in Ahvaz, Iran, with maximum diversity. In-depth, semi-structured, individual interviews were conducted to collect the data. The MAXQDA software was used for data analysis. **Results:** Data analysis led to the extraction of two main categories and nine subcategories. “Disrupted peace” and “inefficient adaptation to the situation” were the two extracted categories. The former included the five subcategories of concerns about pregnancy complications, concerns about the parenting process, concerns about the couple’s relationship, fear of Covid-19, and occupation-related stress. The latter included the three subcategories of unpleasant feelings, current pregnancy experiences, and previous pregnancy experiences. **Conclusions:** This study highlighted a wide range of psychosocial factors involved in the PD of women with HRP. These findings can be used to design appropriate prevention strategies to manage the mental health problems of these women in order to turn their pregnancy into a pleasurable experience.

Keywords: High-risk pregnancy, Iran, psychological distress, qualitative research

Introduction

High-Risk Pregnancy (HRP) is considered to be a major public health challenge, and addressing the healthcare needs in areas where HRP occurs is an objective of Sustainable Development Goal 3 (SDG 3).^[1] HRP has been defined as “any pregnancy in which there is a medical factor, maternal or fetal, that potentially acts adversely to affect the outcome of pregnancy”.^[2] It is estimated that about 15 to 20% of women experience HRP.^[3] HRP is a major physiological risk factor associated with Psychological Distress (PD) during pregnancy. However, other risk factors such as environmental, physical, biological, social, and psychological factors can predispose a person to PD in the prenatal period, during childbirth, or after childbirth.^[4] PD can be described as stress, depression, anxiety, or the experience of an adverse life event and is classified as mild,

moderate, and severe.^[5] Mild-to-moderate PD is usually controlled through primary healthcare services, while more severe cases are referred for specialized mental health services.^[6] According to the literature, PD is more common in cases of domestic violence, history of abortion, stillbirth, unwanted pregnancy, drug use, lack of community support, gestational diabetes, preeclampsia, and over 35 years of age, which complicate pregnancy.^[5] Fairbrother *et al.*^[7] reported that anxiety and stress are 5.2 times higher in women with HRP than in women with normal pregnancies. Simmons and Goldberg reported that the label of HRP alone is associated with higher PD and may cause the onset or recurrence of some serious mental disorders in some women.^[8] When the severity of maternal complications increases, the mother needs to be hospitalized for a long time to receive care and medical attention, but this is associated with increased

Solmaz Mohammadi¹,
Kobra Shojaei²,
Elham Maraghi³,
Zahra Motaghi⁴

¹Student Research Committee, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran, ²Department of Obstetrics and Gynecology, Fertility, Infertility and Perinatology Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, ³Department of Biostatistics and Epidemiology, Faculty of Public Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, ⁴Reproductive Health Department, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran

Address for correspondence:
Dr. Zahra Motaghi,
Reproductive Health
Department, School of Nursing
and Midwifery, Shahroud
University of Medical Sciences,
Shahroud, Iran.
E-mail: motaghi@shmu.ac.ir

Access this article online

Website: www.ijnmrjournal.net

DOI: 10.4103/ijnmr.ijnmr_321_21

Quick Response Code:



This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Mohammadi S, Shojaei K, Maraghi E, Motaghi Z. Explaining the psychological distress of women with high-risk pregnancies in Iran: A qualitative study. *Iran J Nurs Midwifery Res* 2022;27:560-6.

Submitted: 25-Sep-2021. **Revised:** 19-Dec-2021.

Accepted: 21-Sep-2022. **Published:** 18-Nov-2022.

concerns and will eventually lead to additional stress and aggravation of psychological symptoms.^[7] The prevalence of antenatal depression is about 13%, but can reach 19% among women hospitalized due to the risk of obstetric complications.^[9] Overall, previous studies have shown the importance of frequent screening of women with HRP in terms of PD because PD can have negative impacts on the mental health and well-being of pregnant women, children, and their families.^[10] It seems that PD can lead to a decrease in self-efficacy, self-esteem, and hope in pregnant women and as a result reduce their psychological capacity.^[11] PD is associated with increased risk of maternal and fetal problems such as preterm delivery, low birth weight, intrauterine growth restriction, fetal asphyxia, a complicated delivery, impaired maternal–fetal attachment, and postpartum depression, which may have adverse effects on the child’s behavioral development.^[12]

Reflection on the available sources shows that the majority of available resources on PD are quantitative and are intended to test the methods that may reduce the distress level and its complications in pregnancy, but the most provoking factors of PD and its dimensions have been neglected in most of them.^[13] Since PD during pregnancy has different cultural, social, economic, and medical dimensions,^[5] qualitative studies focusing on the specific cultural differences of each region are essential in order to discover in depth the various dimensions of PD in women with HRP. Ahvaz city, Iran, with a variety of different ethnic and cultural groups is a suitable environment for this study. Based on examples of PD, strategies can be developed to promote health and improve the quality of life of women with HRP. Therefore, the aim of this study was to explore the perception and experience of women with HRP who had moderate-to-severe stress and anxiety scores based on a standard questionnaire.

Materials and Methods

This qualitative descriptive research was part of a multistage mixed-method study that investigated the perinatal care program for women with high-risk pregnancies in Iran. This qualitative study was conducted from December 2020 to June 2021 using conventional content analysis method. Conventional qualitative content analysis is based on induction and is used when existing theories or research texts about the phenomenon under study are not sufficient, and the researcher wants to provide the necessary background knowledge in this regard. In such cases, researchers avoid using presupposed categories and instead arrange for the categories to be derived from real data.^[14] The study setting was the perinatology ward of Imam Khomeini Hospital in Ahvaz (southwestern Iran). This center is a teaching tertiary referral hospital in Khuzestan Province of Iran, with approximately 6700 births and 15000 obstetric triage visits annually.^[12] Participants were selected from among 150 women with

HRP admitted to the perinatology ward of Imam Khomeini Hospital and who had completed the State-Trait Anxiety Inventory (STAI) and Perceived Stress Scale (PSS) questionnaire in the study aimed at “evaluating the perinatal care program for women with high-risk pregnancies” and were qualified to enter the qualitative study. The study inclusion criteria for this study included HRP (any type of maternal or fetal risk), gestational age ≥ 28 weeks, scoring of more than 50% on both questionnaires (28 for PSS and 50 for STAI), the ability to describe the experience in Persian, and willingness to participate in the interview.

The 14-item PSS was used to assess perceived stress. The items of this questionnaire are scored based on a 5-point Likert scale ranging from 0 to 4 (never = 0, low = 1, moderate = 2, high = 3, and very high = 4). The total score of this questionnaire ranges between 0 and 56. The validity and reliability of this instrument have been confirmed by Malakouti *et al.*^[15] The STAI designed by Spielberger *et al.* was used to measure the participants’ level of anxiety. This inventory consists of the two sections of state (situational) and trait (personal) anxiety. In this assessment, the 20 questions related to state anxiety (transient emotion depending on specific circumstances) were used. The items of the STAI are scored based on a Likert scale ranging from 1 to 4. Thus, the total obtained anxiety score ranges between 20 and 80.^[16] The validity and reliability of this instrument have been confirmed by Makvandi *et al.*^[17] Assessments of maternal anxiety and stress were performed, on average, 4 days after admission.

In-depth, semi-structured interviews were conducted to collect the required data. All interviews were performed by the first author who had the experience of interacting with patients in perinatology wards as a clinical instructor. First, an appointment was made to interview each participant, and then, face-to-face interviews were conducted individually at a time and place convenient to the participant in the study setting. Interviews were initiated with general questions, and then, moved toward more in-depth inquires based on participants’ answers and the purpose of the study. All participants completed a demographic questionnaire before participating in the interviews which were recorded with their permission. An interview guide was tailored to the purpose of the study. The interview began with an open-ended question (“Can you speak a bit about how this high-risk pregnancy affects you emotionally/psychologically?”). Then, the interviewer added questions such as “What causes you the most stress and anxiety?”, and then, based on their answers and using other probing questions (“Can you give an example?”), they were asked to explain the effects of stress and anxiety in more detail. Each interview lasted between 45 and 60 minutes. Data collection was continued until data saturation, which was achieved after interviewing 13 participants. However, three more interviews were conducted to ensure that saturation was reached; they produced no new data.

MAXQDA software (version 10; VERBI GmbH, Berlin, Germany) was used for data analysis. Inductive data analysis was performed simultaneously with data collection. For this purpose, the conventional content analysis method introduced by Elo and Kyngäs was used.^[14] In this method, codes and categories are derived directly from the raw data. Thus, immediately after each interview, the whole interview was transcribed verbatim. Each interview was read several times to identify meaning units, and then, the meaning units were labeled and coded. Subsequently, meaning units and codes were classified according to conceptual and semantic similarities. Categories and subcategories were compared. Finally, themes were extracted from the analysis and interpretation of data and matched to the overarching categories related to the guideline, the individual, the cultural and social context, and the organization.^[18] All initial coding was made by the first author (SM). She periodically met with the research team during the coding process to discuss and review the coding scheme and synthesis of codes at a higher level. To ensure the accuracy and reliability of the data, the four criteria of credibility, transferability, dependability, and confirmability were taken into account, using the methods proposed by Lincoln and Guba.^[19] In order to validate the data, a sufficient amount of time was dedicated to data collection, and sampling was performed considering maximum diversity (in terms of age, level of education, any type of maternal-fetal risk, and ethnicity) and continued until data saturation. The coded texts were made available to external observers who were proficient in qualitative research as well as the subject matter in order to ensure the reliability of data. Efforts were also made to maintain data transferability by fully describing the characteristics of the participants, sampling methods, and data collection.

Ethical considerations

The study is part of the PhD dissertation of the first author in reproductive health, which was financially supported by Shahroud University of Medical Sciences, Shahroud, Iran (Approval ID: IR.SHMU.REC.1399.123). After explaining the objectives of the study to the participants, informed written consent was obtained from them for the interview. They were informed that their participation in the research was optional and that they had the right to withdraw from the study at any stage.

Results

The results of this study were obtained from 16 interviews. Table 1 shows the demographic characteristics of the participants. The PD of women with HRP was divided into the two main categories of disrupted peace and inefficient adaptation to the situation [Table 2], which are described below.

Disrupted peace

Data analysis indicated that several factors, including concerns about pregnancy complications, the parenting process, the couple's relationship, and contracting a disease, play a role in the PD of women with HRP. Most of the mothers who participated in this study believed that pregnancy is a stressful event that is accompanied with anxiety and worry.

- Worries about pregnancy complications

According to the study participants, fear and anxiety about the effects of pregnancy complications on the health of the fetus and mother was an important factor in their psychological distress. Some participants reported the fear of stillbirth and mental retardation of the fetus as a cause for concern. In this regard, a participant said: *"Because of low amniotic fluid, the doctors said that we should have preterm labor, in which case, the baby's chance of survival is low"* [Participant (p 6)].

Participant 2 attributed her anxiety to the fear of neonatal birth trauma. *"I have diabetes and the baby is overweight. The doctors here have told me that the baby will get stuck in the birth canal, and this will damage his hand"* (p 2).

Participant 4 stated that she was disturbed, anxious, and apprehensive about the possible effects of pregnancy on their health. *"The imaging [MRI] showed that my placenta is very sticky. The doctors said that they may have to remove my uterus [hysterectomy]"* (p 4).

- Worries about the parenting process

Parenting responsibilities along with family financial problems and the high costs associated with pregnancy (screening, ultrasound, etc.) were other factors that caused fear and anxiety. A respondent stated: *"I am anxious and worried about whether I have the ability needed to care for a premature baby"* (p 10).

Regarding these problems, A 31-year-old mother stated: *"In such economic conditions, the cost of tests, ultrasound, etc., has become very high and has put a lot of pressure on our family"* (p 12).

And another participant said: *"Despite having two children with mental retardation, despite the doctor's serious advice to perform additional tests and sonography [screenings], due to financial problems and lack of insurance plans, I did not do them"* (p 16).

- Worries about the couple's relationship

Fear of emotional distance, infidelity, and ignored gender role and the related problems were other issues mentioned by participants which caused psychological distress. In this regard, participant 8 said: *"Under these conditions (frequent hospitalization), I have forgotten that I am a woman who has the role of a wife"* (p 8).

Table 1: Participants' characteristics

No	Age (year)	Education	Occupation	Pregnancy status*	Gestational age (week)	Type of pregnancy complication	Length of hospital stay (day)	Ethnicity
1	38	Bachelor's degree	Teacher	G5Ab4	26	Preterm labor; history of recurrent miscarriage	7	Lor
2	25	Bachelor's degree	Housewife	G2P1	24	Gestational diabetes mellitus	8	Bakhtiari
3	40	High school diploma	Housewife	G4p1Ab2	29	Itching and skin lesions	5	Arab
4	27	High school diploma	Housewife	G2p1	39	Placenta previa	11	Lak
5	33	Eleventh grade	Housewife	G3p2	34	Severe intrauterine growth retardation	5	Kurd
6	25	Tenth grade	Housewife	G2P1	28	Oligohydramnios	10	Behbahani
7	29	Bachelor's degree	Housewife	G2P1	22	Disorders of liver tests; history of stillbirth	6	Qashqai
8	36	Tenth grade	Housewife	G3P2	34	Gestational diabetes mellitus and placenta accreta	10	Arab
9	20	Ninth grade	Housewife	G1	40	Decreased fetal motility and non-reactive NST**	5	Arab
10	32	Bachelor's degree	Worker	G2P1	34	Gestational diabetes mellitus, HELLP*** syndrome	7	Arab
11	33	Eighth grade	Housewife	G4p2Ab1	35	Gestational diabetes mellitus, hypertension	9	Arab
12	31	Associate degree	Housewife	G2P1	36	Fetal heart failure and oligohydramnios	5	Bakhtiari
13	27	Bachelor's degree	Office worker	G2Ab1	28	Short cervical length + cerclage	20	Dezfuli
14	34	Bachelor's degree	Office worker	G3Ab2	32	Cardiac problem + recurrent miscarriage	12	Lor
15	38	High school diploma	Housewife	G2Ab1	32	Infertility + cerclage	50	Shushtatri
16	28	Sixth grade	Housewife	G2P2	29	Preeclampsia	6	Lak

*G: Gravidity; Ab: Abortion; P: Para. ** NST: Non-Stress Test. *** HELLP syndrome: Hemolysis, Elevated Liver enzymes and Low Platelets

Table 2: A brief report of the development of the categories

Subcategories	Main categories
Worries about pregnancy complications	Disrupted peace
Worries about the parenting process	
Worries about the couple's relationship	
Fear of Covid-19	
Job stress	Inefficient adaptation to the present situation
Unpleasant feelings	
Current pregnancy experiences	
Previous pregnancy experiences	

Another 29-year-old woman stated: “Since I have been hospitalized here, I am afraid and anxious that our relationship is turning cold and we are growing distant from each other” (p 7).

Another participant said: “In this long hospital stay, thousands of thoughts have come to my mind, I keep thinking that I hope he does not have a relationship with another woman during this time” (p 15).

- Fear of getting Covid-19

Fear and anxiety associated with Covid-19 infection during hospitalization and care (due to non-compliance

of some patients with health protocols) were other causes of maternal PD in addition to the stress associated with pregnancy complications. A 38-year-old woman said: “Now in addition to worrying about preterm birth, I am also concerned about Corona and its effects on myself and the fetus” (p 1).

- Occupation-related stress

Dissatisfaction with paid leave and worries about losing their job were other concerns of the participants. In this regard, participant 3 said: “I need frequent follow-ups, but due to lack of manpower and my colleagues' getting Corona in the current situation, my paid leave request has not been approved” (p 3).

And participant 10 stated: “I have a temporary job and with all these sick leaves and frequent hospitalizations, I will probably lose my job” (p 10).

Inefficient adaptation to the situation

According to the participants' statements, unpleasant experiences in previous pregnancies, concern about the ambiguous situation ahead due to lack of accurate information, and problems related to being away from home were the cause of their PD and dysfunctional incompatibility with their current situation.

- Unpleasant feelings

Fear of the new environment, feeling homesick and lonely in a city other than one's hometown, difficulty in resting for a long time in the hospital and away from family, and being deprived of many foods as recommended by the doctor were factors reported as causes of low mood and unpleasant feelings toward the new situation. Participant 6 said: *"I am always afraid of new environments. Now that I am here in this new environment (the hospital), I am scared"* (p 6).

"Here (the city I was sent to), the feeling of loneliness and homelessness has exhausted me" (p 5).

One respondent declared: *"I am on complete bed rest during this pregnancy. All my normal social activities are limited"* (p 14).

A woman said in this regard: *"Because of my obesity, I am on a strict diet that has made me impatient, bored, and depressed"* (p 11).

- Previous pregnancy experiences

Thinking about the negative experiences of previous pregnancies, like inappropriate staff behavior, was one of the causes of inefficient adaptation to the situation. A 29-year-old mother said: *"In my previous pregnancy, my baby was stillborn; now, coming here has brought back all the bitter memories of the past"* (p 7).

Moreover, a 27-year-old mother said: *"I was here in my previous abortion, and the midwife who is on duty now, kept shouting at me at that time because I was crying out of pain, and said this is simply an abortion"* (p 13).

- Current pregnancy experiences

Medical negligence, lack of appropriate interaction with the client, and failure to respond to and share information with the client were the causes of anxiety, stress, and tension for some mothers. The presence of capable healthcare professionals and the provision of quality care (providing effective, efficient, and cost-effective health services) could play an important role in meeting the mentioned needs and expectations of the clients, which, in turn, will lead to their satisfaction with the services and reduced stress and anxiety. One participant noted: *"My first child had a heart problem. Despite the fact that the doctor knew about my first child's problem and I was under her supervision, she did not recommend an echo test, so I did not do it during this pregnancy."* (p 12).

One respondent stated: *"I was scheduled to have a cesarean section to end my pregnancy, but they are just procrastinating, and when I or my family ask the staff when I will have the cesarean section, they do not give a direct answer"* (p 5).

Moreover, a 20-year-old mother said: *"When I asked the midwives about the reason for prescribing a medicine or ordering a test, they said angrily: 'we do not know; if you have something to say, talk to the doctor'"* (p 9).

Discussion

Our results highlighted several psychosocial factors that may cause significant PD and debilitating PD in women with HRP, but are not sufficient to ensure their referral to mental health services. Participants noted concern about the effects of pregnancy complications on maternal and/or fetal health as a cause of PD. A study by Penacoba-Puente et al.^[20] in Spain also showed that mothers who had an unwanted pregnancy or had a history of miscarriage were more concerned about the health of their fetus, which is consistent with the results of the present study. Shojaeian et al.^[21] reported that the possibility of fetal vulnerability to different risk factors (i.e., preterm delivery, fetal death, and hospitalization in the NICU) was a concern of mothers with HRP. Fear of fetal injury during the delivery process was the cause of maternal anxiety and the desire to have a cesarean section in this study. Arfaie et al.^[13] also found that the fear of fetal injury was one of the main reasons for the selection of cesarean section by many mothers.

Another major cause of distress in mothers was related to their relationship with their spouse. According to Smorti et al., not being able to be close and involved with their partners was a cause of anxiety and stress in women with HRP requiring hospitalization.^[22] Rosario et al.^[23] and Karamoozian et al.^[24] also pointed to the role of incomplete sex in anxiety during pregnancy, which is in line with the findings of the present study. Despite the many sexual problems in pregnancy and the significant impact of marital satisfaction on the mental health of pregnant women, most women do not use sexual counseling during their pregnancy.^[25] Job loss was another cause of distress perceived by the participants. Lack of financial security to meet the current and future needs of the family and the children significantly affects the incidence of mood disorders.^[26] There is considerable evidence that mental health conditions in women are associated with social conditions such as poverty, violence, and economic dependence.^[27] Concerns about parental responsibility (including caring for and interacting with a premature child) were among the factors causing psychological distress. This issue has also been identified as a cause of maternal anxiety in the studies by Borghei et al.^[25] and Arfaie et al.^[28] In Iran, prenatal and postpartum care training focuses on the physical health of the baby and simple health issues, and there is no structured program to facilitate the optimal transition to the parental stage and to promote mothers' sense of self-efficacy.^[29] Another factor identified was the high cost associated with pregnancy (tests and screening) and the economic problems of families. Being concerned about paying for fees related to transportation, medicine, extra care during pregnancy, and childcare were mentioned as causes of maternal anxiety in the study by Rosario et al.^[22]

However, Martini et al. found no significant relationship between economic factors and anxiety.^[30] Another factor

was the health risks associated with Covid-19. In this respect, Mappa *et al.* found that the COVID-19 epidemic doubled the number of women with abnormal levels of anxiety. In their study, the fear that COVID-19 could induce fetal structural abnormalities was reported.^[31] We found that fear of the repetition of the negative consequences of a previous pregnancy (such as infant death) was another cause of maternal PD. In the study by Shojaeian *et al.*, mothers stated that any negative experiences during their previous pregnancy or those they had only heard about could be a cause of stress and perceiving a greater risk.^[32] Medical negligence and failure to respond to and share information with the client were other known PD factors. In the study conducted by Rosario *et al.* in Tanzania, lack of awareness and information about pregnancy and infant care was a major concern for many participants.^[23] According to Arfaie *et al.*,^[13] there is a significant relationship between attitudes toward the quality of healthcare services and pregnancy anxiety.

Lack of appropriate interaction between the service provider and the client was a distress factor, which is in line with results of Smorti *et al.*^[22] Therefore, the quality of this interaction should be revised. In the study by Arfaie *et al.*,^[28] the skills, behaviors, and responses of the medical staff were the causes of maternal anxiety. Sereshti *et al.*^[33] also found that a lack of understanding of the mother's condition and poor communication between the treatment team in the obstetrics and gynecology wards contributed to mothers' problems and exacerbated their distress and anxiety. The relationship between the client and service provider which is based on trust provides clients with the opportunity to talk freely and openly about their thoughts, feelings, and problems. Participants also reported agoraphobic behaviors (such as homesickness and fear of new environments). However, none of the women in this study were diagnosed with agoraphobia which is defined clinically as "fear of leaving the safe environment of the home. or being in a public place".^[34] Khorsandi *et al.*^[35] found that fear of the hospital environment was the main cause of fear of health care and loneliness during childbirth.

The structures obtained in this study, like other qualitative studies, are context-sensitive (Iran) which may affect the transferability of the findings. However, sampling was performed with maximum diversity. Another limitation of this study was interviewing bilingual mothers (Arabic-Persian), so it was not possible to gain the experiences of mothers who only spoke Arabic. In future studies, it is recommended that the components and dimensions of this kind of psychological distress of HRP be explained from the perspective of the spouse, family members, and caregiver.

Conclusion

The psychological status of women with HRP can affect their ability and likelihood of following instructions and

taking care of themselves during and after pregnancy. Our results highlighted a wide range of psychosocial factors contributing to PD in women with HRP. These findings can be used to design appropriate prevention strategies to manage and control the mental health problems of these women in order to turn their pregnancy into a pleasurable experience.

Acknowledgements

The present study is part of the PhD dissertation of the first author (SM) in reproductive health, which was financially supported by Shahroud University of Medical Sciences, Shahroud, Iran (code: 860). The authors would like to thank the participants of this study for their cooperation.

Financial support and sponsorship

Shahroud University of Medical Sciences, Shahroud

Conflicts of interest

Nothing to declare.

References

1. World Health Organization. Global diffusion of eHealth: making universal health coverage achievable: report of the third global survey on eHealth. World Health Organization. (2017).
2. Holness NJNC. High-risk pregnancy. *Nurs Clin North Am* 2018;53:241-51.
3. Isaacs NZ, Andipatin MG. A systematic review regarding women's emotional and psychological experiences of high-risk pregnancies. *BMC Psychol* 2020;8:1-11.
4. Araji S, Griffin A, Dixon L, Spencer S-K, Peavie C, Wallace K, *et al.* An overview of maternal anxiety during pregnancy and the post-partum period. *J Ment Health Clin Psychol* 2020;4.
5. Vehmeijer FO, Guxens M, Duijts L, El Marroun H. Maternal psychological distress during pregnancy and childhood health outcomes: A narrative review. *J Dev Orig Health Dis* 2019;10:274-85.
6. Howard LM, Megnin-Viggars O, Symington I, Pilling S, Guideline Development Group. Antenatal and postnatal mental health: Summary of updated NICE guidance. *BMJ* 2014;349:g7394. doi: 10.1136/bmj.g7394.
7. Fairbrother N, Young AH, Zhang A, Janssen P, Antony MM. The prevalence and incidence of perinatal anxiety disorders among women experiencing a medically complicated pregnancy. *Arch Womens Ment Health* 2017;20:311-9.
8. Simmons HA, Goldberg LS. 'High-risk' pregnancy after perinatal loss: Understanding the label. *Midwifery* 2011;27:452-7.
9. Tsakiridis I, Bousi V, Dagklis T, Sardeli C, Nikolopoulou V, Papazisis G, *et al.* Epidemiology of antenatal depression among women with high-risk pregnancies due to obstetric complications: A scoping review. *Arch Gynecol Obstet* 2019;300:849-59.
10. Taebi M, Simbar M, Abdolalian S. Psychological empowerment strategies in infertile women: A systematic review. *J Educ Health Promot* 2018;7:68. doi: 10.4103/jehp.jehp_151_15.
11. Garcia ER, Stoever JK, Wang P, Yim IS. Empowerment, stress, and depressive symptoms among female survivors of intimate partner violence attending personal empowerment programs. *J Interpers Violence* 2021;36:9557-79.
12. Lima SAM, El Dib RP, Rodrigues MRK, Ferraz GAR, Molina AC, Neto CAP, *et al.* Is the risk of low birth weight or

- preterm labor greater when maternal stress is experienced during pregnancy? A systematic review and meta-analysis of cohort studies. *PLoS One* 2018;13:e0200594. doi: 10.1371/journal.pone.0200594.
13. Arfaie K, Nahidi F, Simbar M, Bakhtiari M. The role of fear of childbirth in pregnancy related anxiety in Iranian women: A qualitative research. *Electron Physician* 2017;9:3733-40.
 14. Armat MR, Assarroudi A, Rad M, Sharifi H, Heydari A. Inductive and deductive: Ambiguous labels in qualitative content analysis. *Qual Rep* 2018;23:219-21.
 15. Malakouti J, Sehhati F, Mirghafourvand M, Nahangi R. Relationship between health promoting lifestyle and perceived stress in pregnant women with preeclampsia. *J Caring Sci* 2015;4:155-63.
 16. Shahid, A., Wilkinson, K., Marcu, S., & Shapiro, C. M. State-trait anxiety inventory (STAI). In *STOP, THAT and one hundred other sleep scales* (pp. 367-368). Springer, New York, NY. (2011).
 17. Makvandi S, Zargar Shoshtari S, Montazeri S, Ahangarpour A. The effect of chewing sugar-free gum on the anxiety level of active phase of labor in nulliparous women. *Razi J Med Sci* 2013;20:9-15.
 18. Assarroudi A, Heshmati Nabavi F, Armat MR, Ebadi A, Vaismoradi M. Directed qualitative content analysis: The description and elaboration of its underpinning methods and data analysis process. *J Res Nurs* 2018;23:42-55.
 19. STAHL, Norman A.; KING, James R. Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education* 2020,44.1:
 20. Peñacoba-Puente C, Monge FJC, Morales DM. Pregnancy worries: A longitudinal study of Spanish women. *Acta Obstet Gynecol Scand* 2011;90:1030-5.
 21. Shojaeian Z, Khadivzadeh T, Sahebi A, Kareshki H, Tara F. Perceived risk in women with high risk pregnancy: A qualitative study. *Iran J Nurs Midwifery Res* 2021;26:168.
 22. Smorti M, Ginobbi F, Simoncini T, Pancetti F, Carducci A, Mauri G, *et al.* Anxiety and depression in women hospitalized due to high-risk pregnancy: An integrative quantitative and qualitative study. *Curr Psychol* 2021;1-10. doi: 10.1007/s12144-021-01902-5.
 23. Rosario MK, Premji SS, Nyanza EC, Bouchal SR, Este D. A qualitative study of pregnancy-related anxiety among women in Tanzania. *BMJ Open* 2017;7:e016072.
 24. Karamoozian M, Askarizadeh G, Darekordi A. The impact of prenatal group stress management therapy on anxiety in mothers and newborns physiological parameters. 2015.
 25. Borghei NS, Taghipour A, Latifnejad Roudsari R. The concern of fetal health: Women's experiences of worries during pregnancy. *Iran J Obstet Gynecol Infertil* 2016;19:10-21.
 26. Deklava L, Lubina K, Circenis K, Sudraba V, Millere I. Causes of anxiety during pregnancy. *Proc Soc Behav Sci* 2015;205:623-6.
 27. Howard LM, Khalifeh H. Perinatal mental health: A review of progress and challenges. *World Psychiatry* 2020;19:313-27.
 28. Arfaie K, Nahidi F, Simbar M. Understanding mothers' perceptions of pregnancy anxiety: A qualitative study. *Electronic Physician* 2019;11:7620-8.
 29. Azmoude E, Jaafarnejad F, Mazloun SJEBC. Effect of self-efficacy-based training on maternal sense of competency of primiparous women in the infants care. *Evid Based Care* 2014;4:7-14.
 30. Martini J, Petzoldt J, Einsle F, Beesdo-Baum K, Höfler M, Wittchen H-U. Risk factors and course patterns of anxiety and depressive disorders during pregnancy and after delivery: A prospective-longitudinal study. *J Affect Disord* 2015;175:385-95.
 31. Mappa I, Distefano FA, Rizzo G. Effects of coronavirus 19 pandemic on maternal anxiety during pregnancy: A prospective observational study. *J Perinat Med* 2020;48:545-50.
 32. Shojaeian Z, Khadivzadeh T, Sahebi A, Kareshki H, Tara F. Knowledge valuation by Iranian women with high-risk pregnancy: A qualitative content analysis. *Int J Community Based Nurs Midwifery* 2020;8:243-52.
 33. Sereshti M, Nahidi F, Simbar M, Ahmadi F, Bakhtiari M, Zayeri F. Mothers' perception of quality of services from health centers after perinatal loss. *Electron Physician* 2016;8:2006-17.
 34. Malhi GS, Bassett D, Boyce P, Bryant R, Fitzgerald PB, Fritz K, *et al.* Royal Australian and New Zealand college of psychiatrists clinical practice guidelines for mood disorders. *Aust N Z J Psychiatry* 2015;49:1087-206.
 35. Khorsandi M, Vakilian K, NasirzadehMasooleh M. Investigating different factors of fear in normal delivery among pregnant women, in arak-a cross sectional study. *J Fasa Univ Med Sci* 2014;4:161-7.