

ORIGINAL ARTICLE

Care Providers' Perspectives on Quality Prenatal Care in High-risk Pregnancies: A Qualitative Study

Solmaz Mohammadi¹, PhD candidate; Kobra Shojaei², MD; Elham Maraghi³, PhD; Zahra Motaghi⁴, PhD

¹Student Research Committee, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran;

²Fertility, Infertility and Perinatology Research Center, Department of Obstetrics and Gynecology, 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;

⁴Department of Reproductive Health, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran

Corresponding Author:

Zahra Motaghi, PhD; Department of Reproductive Health, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Postal code: 36147-73943, Shahroud, Iran

Tel: +98 23 32395054; Fax: +98 23 32395009; Email: Zahra.motagy63@gmail.com

Received: 26 December 2022 Revised: 25 February 2023 Accepted: 27 February 2023

ABSTRACT

Background: A high-risk pregnancy (HRP) is adversely affects the health of the mother, baby, or both. Most prenatal care research, rather than quality concepts, focuses on the adequacy of prenatal care and describes the emotional-psychological experiences of women with HRP. The main purpose of this study was to explore the perspectives of healthcare professionals regarding the quality of prenatal care for women with HRP.

Methods: This qualitative study was conducted in three university hospitals and 12 comprehensive health centers in Ahvaz (Iran) from December 2020 to May 2021. In the present study, 10 midwives, 2 executive directors, and 7 specialists were purposefully selected with maximum diversity. In-depth semi-structured individual interviews were used to collect the data. Data were analyzed concurrently using Elo and Kinga's content analysis. The MAXQDA software version 10 was used for data analysis.

Results: During data analysis, the 6 main categories "infrastructure for care provision", "optimal clinical care", "organizing referrals", "preconception care", "risk assessment", and "family-centered care" and 14 subcategories were identified.

Conclusion: Our findings showed that professional groups focused on the technical aspects of caring. The findings from this study highlight several conditions that can affect the quality of prenatal care for women with HRP. Healthcare providers can use these factors to effectively manage HRPs, thereby improving pregnancy outcomes among women with HRPs.

Keywords: High-risk pregnancy, Qualitative research, Prenatal care, Perspective

Please cite this article as: Mohammadi S, Shojaei K, Maraghi E, Motaghi Z. Care Providers' Perspectives on Quality Prenatal Care in High-risk Pregnancies: A Qualitative Study. *IJCBNM*. 2023;11(2):122-134. doi: 10.30476/IJCBNM.2023.97603.2192.

INTRODUCTION

Prenatal care can improve the health of women and their babies and improve pregnancy outcomes by preventing adverse outcomes such as maternal mortality, underweight, and infant mortality, as well as preparing the parents for birth and parenting.¹ However, evidence shows that high healthcare coverage alone is not enough to eliminate the preventable causes of maternal and infant death.² Therefore, increased coverage should be accompanied by improved quality.³ Achieving quality in pregnancy and childbirth care is one of the most challenging development goals of the fifth millennium.⁴

Quality of care is the degree of health care provided to individuals and communities that increases the likelihood of desired health outcomes and is consistent with current professional knowledge.⁵ The mortality rate of mothers and infants is considered one of the indicators of the quality of health care.⁶ The average mortality rate due to pregnancy complications in developing and developed countries is 200 and 20 per thousand live births, respectively.⁷ Growing evidence shows significant differences between maternal and infant mortality in developed and developing countries due to the differences in the quality of health care.⁷ By improving the quality of care, about 90% of deaths can be prevented.⁸ According to the World Health Organization (WHO), 50% of all prenatal maternal mortality is related to high-risk pregnancies (HRP).⁹

Pregnancy is considered high-risk whenever the probability of adverse outcomes for the mother or baby is higher than that for the population of normal pregnant women in the presence of one or more proven risk factor.¹⁰ The prevalence of HRP in Iran and other countries is 25.6-75.6%. HRP is associated with many different problems. For instance, it can cause physical and emotional tensions, anxiety, and depression. Meeting the healthcare needs of high-risk pregnancies is now one of the top priorities of the World Health Organization (WHO).⁹

Regarding the importance of prenatal care

in HRP, emerging evidence indicates that improved pregnancy cares, including lifestyle interventions, psychosocial interventions, group prenatal care, and received health promotion content, have been effective in eliminating the risk factors and improving pregnancy outcomes.¹¹ Of course, context is often an important factor in the success - or failure - of interventions which aim at quality improvement. Context influences the setting of priorities and goals appropriate for improvement interventions and determination of obstacles and facilitators of the implementation process.¹² Regional research will optimize corrective interventions through the development and adaptation of appropriate interventions based on evidence and context-sensitive implementation processes.¹³

A full understanding of the conditions affecting the quality of health services is the sine qua non to improve quality. Discovering the dimensions of "quality of care" for health care providers is a tool to ensure that their views are prioritized when developing quality improvement interventions in HRP care. Since qualitative studies on HRP in Iran have provided knowledge and life experience of women with HRP,^{14, 15} extensive information is not available on the conditions affecting the quality of prenatal care for women with HRP. The question that arises is that, according to the existing study gap, what the perception of healthcare professionals is about the dimensions of the quality of prenatal care. As qualitative approaches provide a rich and deep description of the participants' experiences and their context, the qualitative content analysis method was used to explore the conditions affecting the quality of prenatal care for women with HRP. The objective of the present qualitative study was to explore the perspectives of healthcare professionals regarding the quality of prenatal care for women with HRP.

METHODS

This qualitative study, using the conventional

content analysis method, was conducted from December 2020 to May 2021 in Ahvaz (Iran). Participants were selected from 3 university hospitals affiliated with Ahvaz University of Medical Sciences (Imam Khomeini, Razi, and Siena Hospital) and 12 comprehensive health centers of Ahvaz (Iran). Participants included 10 professional midwives, 2 hospital and provincial executive managers, and 7 specialists (3 obstetricians, 4 faculty members of reproductive health department). Purposeful sampling was performed with maximum diversity in participants in terms of job, work experience, and level of education. Inclusion criterion for the care provider and professionals was at least 3 and 10 years of work experience, respectively.

Data were collected from in-depth semi-structured interviews using open-ended questions. Each interview was conducted individually and face-to-face in spaces convenient to the participants in comprehensive health centers, perinatology wards, clinics, and offices. The interviews were conducted by the first author (SM). Demographic information was collected from the participants through a self-report before the interview. An interview guide was provided. To maximize the relevance of the study findings to the needs of clinical and community programs, we started the interviews with the following question: *“In your opinion, what is quality prenatal care?”*. Other questions are as follow:

1. What are the limitations or restrictions on providing quality services?

2. Discuss the conditions affecting the enablers of the quality of services provided to women with HRPs?

Then, several questions were asked about clinical care processes and interpersonal relationships used to assist with quality care. Then, based on their answers, the participants were asked to elaborate on their answers in more detail using other exploratory questions. Each interview lasted between 45-60 minutes and continued until data saturation. Saturation occurs when redundancy is reached in data analysis and signals that the researchers can

cease data collection. The proliferation of common concepts in data analysis showed that the collection of new and duplicate information had stopped, i.e., saturation had been reached, which was achieved after interviewing 16 participants. However, three more interviews were conducted to ensure that saturation was reached; they produced no new data. All conversations were recorded with the permission of the participants. A debriefing was held at the end of each day to reflect upon the interviews conducted and accordingly improve the subsequent interviews.

MAXQDA (v. 10, VERBI Software GmbH, Berlin) was used for data analysis management. Data analysis was performed using the conventional content analysis method, guided by Elo and Kinga in three stages.¹⁶ The analysis was performed simultaneously with data collection. First, in the preparation stage, the recorded interviews were transcribed verbatim, and each interview was read several times to identify the units of meaning. In the organizing stage, using open coding techniques, a semantic code was assigned to each meaning unit of the text. Afterward, through comparative analysis, similar codes were assigned to the data with common features. This process was a joint effort by all the research team members and the final list of categories was formulated after internal discussions and multiple joint meetings; then, any discrepancies in the findings were resolved.

To achieve trustworthiness in the data, we considered the criteria proposed by Lincoln and Guba including credibility, dependability, confirmability, transferability, and authenticity.¹⁷ The credibility criterion was achieved by selecting eligible data sources, selecting the participants with a maximum variation, using various methods of data collection (interviews and field notes), reading the original transcripts frequently, and long interactions with the data. The dependability and confirmability of the data were confirmed via auditing the interviews and analysis

process by some qualitative research experts. To improve the level of transferability, we adequately described information about the participants and context. Furthermore, to achieve the authenticity of the research, we made an attempt to reflect the participants' voice by fully describing the details and using their expressions based on careful analysis.

This study was performed after obtaining approval from the Ethics Committee of Shahrood University of Medical Sciences (Ref. ID: IR.SHMU.REC.1399.123). After the statement of the objectives of the study, informed written consent was obtained from the participants 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

Results were obtained from 19 interviews. Table 1 shows the demographic characteristics of the interviewees.

Data analysis led to the extraction of 6 main categories and 14 subcategories (Table 2).

1. Infrastructure for Care Provision

Infrastructure included manpower, medical facilities, and physical care space, the provision of which was recognized by all participants as effective in improving the quality of care.

1.a. Human Resources

Findings from the participants' experiences indicate the complexity of the issue of insufficient number of the staff, which includes not only midwives but all occupations. Although midwives work together and have the most contact with each other on the patient's treatment and care team, their work is strongly influenced by other members of the care team. The active presence of physicians in comprehensive health centers and physician supply in some special fields will facilitate the performance of diagnostic and therapeutic services for patients and improve their care. In this regard, a participant said: "In addition

Table 1: Participants' characteristics

NO.	Age (Year)	Position	Educational degree	Clinical experience (Year)
P1*	42	Obstetricians	Maternal and Fetal Medicine Fellowship	17
P2	46	Obstetricians	Maternal and Fetal Medicine Fellowship	14
P3	54	Obstetricians	MD**	26
P4	52	Faculty member	Ph.D.***	28
P5	48	Faculty member	Ph.D.	22
P6	46	Faculty member	Ph.D.	18
P7	45	Faculty member	Ph.D.	16
P8	36	Hospital executive managers	Master's degree	13
P9	36	Provincial executive managers	MD/ Ph.D	11
P10	42	Midwife /Head of maternity	Master's degree	14
P11	39	Midwife /Head of maternity	Bachelor	17
P12	50	Midwife of the maternity department	Master's degree	22
P13	53	Midwife/ Head of perinatology department	Bachelor	29
P14	38	Midwife of the perinatology department	Bachelor	14
P15	35	Health center midwife	Bachelor	10
P16	41	Health center midwife	Bachelor	17
P17	39	Health center midwife	Bachelor	14
P18	53	Private midwife	Master's degree	27
P19	49	Midwifery supervisor	Bachelor	24

*Participant, ** Medical Doctor, ***Doctor of Philosophy

Table 2: Main categories and sub-categories extracted from the interview Risk Assessment, Providing family-centered care

Subcategories	Categories
Human resources Medical equipment Physical environment	Infrastructure for care provision
Continuous care Accurate assessment	Optimality of clinical care
Unnecessary references Delay in referral Failure to provide feedback	Organizing referrals
Pre-pregnancy counseling in high-risk groups Increasing coverage of pre-conception care	Perform preconception care
Early identification of infants at risk Early identification of mothers at risk	Risk Assessment
Care at home with the participation of families Teaching home care to the family/ Husband	Providing family-centered care

to the disproportionate number of staff with patients, we do not have a hematologist or a neurosurgeon in this hospital (level 3), so consultations are either done on phone, or the pregnant woman has to be transported by an ambulance to another hospital, and the arrangements for doing this are time-consuming.” (P 13)

Participant 15 stated that: “We have a shortage of doctors and their working hours in health centers. If a doctor is on duty from the beginning to the end of a working shift, this will have a great impact on care.” (P 15)

1.b. Medical Equipment

The participants’ statements indicate that the lack of medical facilities and equipment is an important factor in the way the staff work. Lack of resources leads to their efforts and pursuit to achieve facilities that can meet the care needs of clients. This will lead to a waste of time and not having enough time to provide proper care to the client. In this regard, several participants said:

“Right now, we are facing a shortage of blood and most blood factors in this city. Well, how can a specialist like me manage a case of placenta accrete here?” (P1)

“... It is necessary to establish a specialized laboratory in the hospital, so that patients are not sent out of the hospital.” (P 8)

“It is necessary to have a fetal

echocardiography machine in this hospital. We have to transfer patients between hospitals.” (P 14)

“The triage room of this hospital (level 3) needs medical devices such as pulse oximeters, DC shocks, etc. to cover all patients, which we do not have at the moment.” (P 2)

“We are facing a shortage of ambulances for the rapid transfer of patients to other levels of treatment.” (P 9)

1.c. Physical Environment

Participants cited limitations in the physical space available to provide patient care as an important barrier to providing quality care. According to them, protecting the privacy of the patient and performing specialized counseling measures require a suitable physical space, which, despite the progress made in the structure of health centers, due to lack of attention to the space required to provide patient care, this problem still exists. Several participants stated:

“Due to the lack of physical space, the patient’s privacy is not observed, which causes some mothers not to talk about issues such their mental health problems or domestic violence.” (P16)

“Our center does not have a good space to provide care, the rooms are small, and the building is old, which in itself affects our clients.” (P15)

“We do not have the physical space to perform triage on mothers.” (P11)

Inequality in the spatial-regional distribution of clinics deprives people of access to these services. A participant said:

“In this (marginal) district (of the city), we do not have a clinic. We sent a lot of correspondence explaining that considering the population living in this district, which is not a small one, a clinic should be established so that access to services is made easier.” (P17)

2. Optimality of Clinical Care

According to the participant’s continuous care, triage, simultaneous attention to the condition of the mother and fetus in the care process, and proper implementation of safe discharge protocols are necessary to provide optimal and quality clinical care.

2.a. Continuous Care

According to care providers in our study, continuous care affects the quality of care raising the awareness of the care provider. Two participants stated:

“We would have a better understanding of the mother’s condition if we could provide continuous care from the beginning of pregnancy.” (P12)

“When a mother receives continuous care from a provider during hospitalization, she will feel valued, and effective communication will be possible.” (P5)

2.b. Accurate Assessment

Conducting medical consultations at bedside, paying simultaneous attention to the condition of the mother and fetus, and conducting bedside rounds were mentioned by the participants of this study as the factors influencing the improvement of the quality of care.

A participant said: *“Many consultations are done on phone, but to achieve a correct diagnosis, consultations must be done at the bedside.” (P 19)*

Also, another participant said: *“Conducting grand rounds and benefiting*

from the presence of multiple specialists at the bedside to help reach a consensus on the diagnosis and treatment of high-risk cases will lead to faster patient care and more effective treatment.” (P 3)

Implementation of patient leveling in the triage and maternity is one of the effective components of improving the quality of care. In this regard, participant 10 said: *“Patients’ triage is practically not performed in the midwifery emergency room. If this is done correctly, the patient will be treated more accurately, and decisions about the patient’s care will be made sooner.” (P10)*

Experts and care providers believe that the accurate implementation of the protocols of safe discharge and paying attention to self-care after discharge both complement efficient care. Participant 4 stated:

“No sufficient time is devoted by the medical staff of the ward to talk to patients, answer their family’s questions, and resolve ambiguities about the necessary care at home.” (P 4)

Another participant said: *“The medical staff’s evaluation of the mother and her family in terms of their readiness and ability to perform post-discharge and home care is necessary, However, this is not considered.” (P 18)*

3. Organizing Referrals

The participants also pointed out the importance of properly organizing and managing the referral process to improve the quality of prenatal care for women with HRPs.

3.a. Unnecessary References

Due to the lack of facilities and equipment in the cities and the lack of skillful doctor, unnecessary referrals of mothers have caused a high workload in the referral hospital and increased the possibility of errors. A participant stated:

“When doctors lack the necessary skills or are unable to provide emergency care, mothers can receive inadequate care and have unnecessary referrals.” (P 6)

3.b. Delay in Referral

Other factors that affected the quality of care were the delay in referral by some medical centers and the difficulty in accepting referrals for premature babies. A participant stated:

“Some medical centers, specialists or midwives in the office refer the patients very late, and they reach us at a later time (hospital level 3), which practically does not leave our hands.” (P 2)

3.c. Failure to Provide Feedback

Failure to receive feedback from the treatment and some specialists, failure to provide feedback due to inappropriate referral, and lack of legal obligation to provide feedback are among the issues that need to be corrected by the midwives in order to organize the referral process. Two participants stated:

“We have a weakness in sending feedback from levels 2 and 3 to lower levels in terms of quantity and quality. Much of the feedback does not have complete information regarding the diagnostic and therapeutic measures taken for mothers.” (P15)

“Unfortunately, there is no legal requirement to provide feedback from level 2 to 1.” (P 17)

4. Performance of Preconception Care

According to the participants, it is important to pay attention to pre-conception care in order to reduce HRPs.

4.a. Pre-pregnancy Counseling in High-risk Groups

According to the participants, it is necessary to provide pre-pregnancy counseling to women with chronic diseases or a history of HRPs in order to improve pregnancy outcomes. Unfortunately, most of these mothers get pregnant without pre-pregnancy counseling, and health care providers in comprehensive centers play an important role in informing mothers about the importance of prenatal care. One participant said:

“More information about pre-pregnancy

care should be provided, so that mothers who have underlying diseases such as diabetes or high blood pressure, etc. can make changes in their lifestyle and control their lives before pregnancy, receive the necessary advice, and see if pregnancy is dangerous for them or not.” (P 18)

Another participant said: *“For people who have a history of poor pregnancy outcomes, such as abortion and stillbirth, it should be emphasized on pre-pregnancy counseling.” (P 7)*

4.b. Increasing Coverage of Pre-conception Care

According to the participants, using different platforms to inform young people about the importance of pre-pregnancy care plays a role in increasing the coverage of pre-pregnancy care. According to them, cooperation between education and training in addressing the importance of pre-pregnancy training for teenagers, highlighting the importance of mothers' health in the family by the national media, emphasizing the importance of pre-pregnancy care in pre-marriage counseling in increasing the coverage of pre-conception care is important. In this regard, three participants said:

“Education on the importance of pre-pregnancy care should start from high school, which unfortunately is a taboo to bring up and address through high school.” (P 4)

“The radio and television should enter the work and have universal and comprehensive training because it is the media that everyone has access to and can easily highlight the importance of prenatal, pre- and post-pregnancy care for mothers.” (P 18)

“In counseling classes before marriage, the importance of pre-pregnancy care should be highlighted for couples, so that they don't have to come to file a case when they get pregnant.” (P 16)

5. Risk Assessment

The purpose of risk assessment is early detection of the disease, so that by providing

the possibility of early intervention and management, the rate of death and disease can be reduced. The participants acknowledged that early identification of mothers and babies at risk is important in the management of high-risk pregnancies.

5.a. Early Identification of Infants at Risk

The participants stated that timely identification of newborns in need of special care and early diagnosis of the occurrence and severity of neonatal complications are necessary for the leveling of perinatal services. Two participants said:

“But it is very important to identify babies who need special care, so that appropriate measures can be taken at the right time.” (P 3)

“It is important to understand the time of occurrence and the severity of the possible complications of the baby when planning prenatal and delivery care and giving advice to parents.” (P 2)

5.b. Early Identification of Mothers at Risk

The participants reported that identifying factors that cause the risk of common diseases in each region and screening mothers based on those factors with special tools can be effective in early identification of mothers, timely referral and prevention of complications, and negative consequences of pregnancy. A participant stated:

“The screening of mothers based on factors should be done correctly and on time. We should have a special tool, and those at higher risk should be given more care and additional measures.” (P 4).

6. Providing Family-centered Care

Providing family-centered care to support and care for women with HRP was recognized as necessary by the participants because this care method can prevent the effects of long-term stay of mothers in the hospital and its unpleasant effects on the physical and mental health of the mother.

6.a. Care at Home with the Participation of

Families

According to the participants, providing care at home with the participation of families has benefits for mothers, their families, and staff, such as reducing the length of the mother’s stay in the hospital, reducing treatment costs, improving the comfort of the mother and the family, and lowering the workload of the personnel. One participant noted:

“It should be noted that providing care at home under the support of personnel and participation of families will reduce the stay of mothers at risk in the hospital and prevent the unpleasant effects of long-term hospitalization for mothers.” (P 13)

6.b. Teaching Home Care to the Family/Husband

From the participant’s point of view, the importance of families, especially husbands, in caring for and supporting women with HRPs should be highlighted through education because, by involving them in care, self-efficacy and psychological well-being of mothers will be provided. One respondent stated:

“By educating families and highlighting their role in caring for and supporting mothers, both the length of stay in the hospital will be reduced and the mental state of mothers will improve.” (P 12)

DISCUSSION

This study identified the conditions affecting the quality of prenatal care for women with HRPs by exploring the attitudes and experiences of key stakeholders. The overarching categories were creating infrastructure for care provision, considering the optimality of clinical care, organizing referrals, performing preconception care, performing risk assessment, and providing family-centered care. Our findings showed that professional groups focused on the technical aspects of caring.

It turned out in this study that not all the services needed by mothers were offered in the

health centers or referral centers, and clients had to refer to a private center in order to receive services such as echocardiography and special specialized tests. Lack of comprehensive coverage of required services may cause the users to be suspicious of the health care system because women prefer medical centers that can provide comprehensive care services for them.¹⁸ Easy access to care was identified as a factor influencing the quality of care because it will save time and money; this is consistent with the findings of a Study in Canada.¹⁹ Physical space to observe patient privacy was also considered important by care providers. Numerous studies have been conducted on the importance of respecting privacy, its relationship with client satisfaction, and maximum use of services.^{20,21} In the same line with another study, human resources in all job categories were considered as an effective factor in improving the quality of care.²²

Continuous care was another influential factor in this study. A study found that among the most important aspects of midwifery care are the constant presence with the mother and establishment of an effective relationship with her.²³ A study reported effective and continuous support during labor and delivery is associated with reduced fear and stress and promotes physiological delivery.²⁴ According to our findings, professional care providers believe that in addition to improving access to primary prenatal care, multidisciplinary collaborative maternity care may help increase the quality of prenatal care.²⁵ Care providers emphasized the mother's careful evaluation during the triage, hospitalization, and discharge process to ensure better perinatal outcomes. This viewpoint is compatible with the debate on the role of evidence-based care and guidelines in promoting quality prenatal care.²⁶

In the opinion of the participants, the lack of ambulances and specific clinical criteria for referrals and the attending physicians with insufficient skill have caused delays in referrals or unnecessary referrals. Furthermore, the absence of a legal duty

for specialist doctors or medical centers to provide feedback has disrupted the review process and the measures taken for mothers. In a systematic review conducted in India, based on the results of this study, high numbers of referrals from environmental health centers indicate low staff skills and confidence, non-uniform standards of care at referral institutions, lack of processes and skills for care, lack of referral and supervision communications, and inability to comply with regulations.²⁷ A study found that most healthcare centers lacked ambulances and relied on transportation services provided by the public and private sectors.²⁸ Another study found that pregnant women were not provided with appropriate referral documents at the time of referral, so their referral sheets lacked details about clinical or therapeutic manifestations.²⁹ A previous study indicated that referral failures were a result of a lack of supervision of the referral services and a weak response from the system to the mothers.³⁰

Pre-pregnancy counseling and increasing pre-pregnancy care coverage are associated with improving pregnancy outcomes in HRPs, according to the participants. There is evidence that, first, health problems, problem behaviors, and personal and environmental risks contribute to poor maternal and child health outcomes. Second, there are biomedical, behavioral, and social interventions that, when implemented before pregnancy, effectively address many of these health problems, problematic behaviors, and risk factors. Third, there is limited evidence of effective methods of delivering these interventions (especially social and behavioral interventions) in low- and middle-income countries.³¹ The results of another study showed that as part of prenatal care, providers should be conscious and screen for psychiatric disorders among women of reproductive age as appropriate diagnosis and management of these conditions can reduce the occurrence of pregnancy and adverse family outcomes.³² For example, identifying depression and anxiety disorders before pregnancy allows time to discuss treatment

options and, if necessary, change to safer medications during pregnancy.³³

Participants acknowledged that risk assessment was essential in the management of HRPs in order to identify the mothers and babies at risk as soon as possible. Identifying modifiable risk factors in pre-pregnancy care improves pregnancy and childbirth outcomes.³⁴ Currently, the absence of services for people who are screened positive limits the effectiveness of risk screening. A lack of mental health services to refer the mothers who screen positive for depression limits the benefits of screening for depression, and the lack of support services for abuse victims has been identified by many providers as one of the major deterrents to screening for family violence.³⁵

Finally, according to the participants, providing family-centered care to support and care for women with HRPs prevents the mothers from staying in the hospital for a long time and its unpleasant effects, which is in line with the results of other studies that state that family members and other informal caregivers may not have permission to provide care, but the voice and presence of family members and other informal caregivers is an important component of person-centered primary care and can improve the health outcomes, quality of health care, and overall experience of care for individuals and their families.^{36,37} Research shows that most people prefer to involve their family doctors and other informal caregivers in their health care.³⁸ Family members play a supportive role in most consultations with doctors and help their loved ones manage the ever-increasing complexity of healthcare systems, including setting and keeping appointments and following up on referrals.³⁹ Family members can play many roles other than providing companionship and comfort when accompanying their loved ones on a visit. As an advocate, they can express a person's needs and concerns, especially in emergency situations.⁴⁰ They can also act as an extra set of ears to ensure that the person understands his/her illness, medications,

procedures, and treatments.⁴¹

The strengths of this study were its qualitative design and data collection through semi-structured interviews. A qualitative approach can help view the data more extensively and deeply about the conditions affecting quality prenatal care in HRP that was reported for the first time. The constructs obtained from this study, like other qualitative research, are influenced by the context, which may affect the transferability of the results. The limitation of this study was the lack of data from public teaching hospitals, where pregnancy care differs from that at non-teaching public hospitals.

CONCLUSION

Our findings showed that professional groups focused on the technical aspects of caring. The findings from this study highlight several conditions that can affect the quality of prenatal care for women with HRP. Healthcare providers can use these factors to effectively manage HRP, thereby improving pregnancy outcomes among women with HRP.

ACKNOWLEDGMENT

The study is part of the results of the PhD dissertation of the first author (SM) in reproductive health, which was financially supported by Shahroud University of Medical Sciences, Shahroud, Iran (Grant number 860). The authors would like to appreciate the cooperation of the participants of this study.

Conflict of Interest: None declared.

REFERENCES

- 1 Zhou H, Wang A, Huang X, et al. Quality antenatal care protects against low birth weight in 42 poor counties of Western China. *PLoS One*. 2019;14:e0210393.
- 2 Leal MdC, Esteves-Pereira AP, Viellas EF, et al. Prenatal care in the Brazilian public health services. *Revista de Saúde*

- Pública. 2020;54:08.
- 3 Makate M, Makate C. The impact of prenatal care quality on neonatal, infant and child mortality in Zimbabwe: evidence from the demographic and health surveys. *Health Policy and Planning*. 2017;32:395-404.
 - 4 Moazzeni MS. Maternal mortality in the Islamic Republic of Iran: on track and in transition. *Maternal and Child Health Journal*. 2013;17:577-80.
 - 5 Mirzaee K, Oladi Ghadikolaee S, Taghi Shakeri M, Mousavi Bazzaz M. Maternal knowledge on postpartum care in healthcare centers of Mashhad, Iran in 2013. *Journal of Midwifery and Reproductive Health*. 2015;3:456-64.
 - 6 Azmoude E, Aradmehr M, Dehghani F. Midwives' attitude and barriers of evidence based practice in maternity care. *The Malaysian Journal of Medical Sciences*. 2018;25:120-8.
 - 7 Tunçalp Ö, Were W, MacLennan C, et al. Quality of care for pregnant women and newborns-the WHO vision. *British Journal of Obstetrics and Gynaecology*. 2015;122:1045-9.
 - 8 Ghaffari F, Jahani Shourab N, Jafarnejad F, Esmaily H. Application of Donabedian quality-of-care framework to assess the outcomes of preconception care in urban health centers, Mashhad, Iran in 2012. *Journal of Midwifery and Reproductive Health*. 2014;2:50-9.
 - 9 Bahri N, Arabnejad BA, Bahri N, et al. Objective Structured Clinical Evaluation for assessment of the quality of practice of health practitioners during preconception, prenatal and postnatal cares. *Koomesh*. 2015;17:45-53. [In Persian]
 - 10 Karimian Z, Sarafraz N, Sadat Z, et al. Evaluation Of Midwifery Care Quality And Satisfaction Of Its In Labor And Delivery Units In Kashan University Of Medical Sciences Hospitals In 2011. *Nursing And Midwifery Journal*. 2014;12:858-65. [In Persian]
 - 11 Byerley BM, Haas DM. A systematic overview of the literature regarding group prenatal care for high-risk pregnant women. *BMC Pregnancy and Childbirth*. 2017;17:329.
 - 12 Olander EK, Aquino MRJR, Bryar R. Three perspectives on the co-location of maternity services: qualitative interviews with mothers, midwives and health visitors. *Journal of Interprofessional Care*. 2020. [Online]. doi: 10.1080/13561820.2020.1712338.
 - 13 Brown AF, Ma GX, Miranda J, et al. Structural interventions to reduce and eliminate health disparities. *American Journal of Public Health*. 2019;109:S72-8.
 - 14 Janighorban M, Heidari Z, Dadkhah A, Mohammadi F. Women's needs on bed rest during high-risk pregnancy and postpartum period: A qualitative study. *Journal of Midwifery and Reproductive Health*. 2018;6:1336-44.
 - 15 Shojaeian Z, Khadivzadeh T, Sahebi A, et al. Knowledge Valuation by Iranian Women with High-Risk Pregnancy: A Qualitative Content Analysis. *International Journal of Community Based Nursing and Midwifery*. 2020;8:243-52.
 - 16 Elo S, Kyngäs H. The qualitative content analysis process. *Journal of Advanced Nursing*. 2008;62:107-15.
 - 17 Cope DG. Methods and meanings: Credibility and trustworthiness of qualitative research. *Oncology Nursing Forum*. 2014;41:89-91.
 - 18 Nikoloski Z, Mossialos E. Corruption, inequality and population perception of healthcare quality in Europe. *BMC Health Services Research*. 2013;13:472.
 - 19 Sword W, Heaman MI, Brooks S, et al. Women's and care providers' perspectives of quality prenatal care: a qualitative descriptive study. *BMC Pregnancy and Childbirth*. 2012;12:29.
 - 20 Akyüz E, Erdemir F. Surgical patients' and nurses' opinions and expectations about privacy in care. *Nursing Ethics*. 2013;20:660-71.
 - 21 Ejigu T, Woldie M, Kifle Y. Quality of

- antenatal care services at public health facilities of Bahir-Dar special zone, Northwest Ethiopia. *BMC Health Services Research*. 2013;13:443.
- 22 Janssen MAP, van Achterberg T, Adriaansen MJ, et al. Factors influencing the implementation of the guideline triage in emergency departments: a qualitative study. *Journal of Clinical Nursing*. 2012;21:437-47.
 - 23 Sengane M. Mothers' expectations of midwives' care during labour in a public hospital in Gauteng. *Curationis*. 2013;36:E1-9.
 - 24 Ahmadi Z. Evaluation of the effect of continuous midwifery support on pain intensity in labor and delivery. *Journal of Rafsanjan University of Medical Sciences*. 2010;9:293-304. [In Persian]
 - 25 Behruzi R, Klam S, Dehertog M, et al. Understanding factors affecting collaboration between midwives and other health care professionals in a birth center and its affiliated Quebec hospital: a case study. *BMC Pregnancy and Childbirth*. 2017;17:200.
 - 26 Gheibizadeh M, Abedi HA, Mohammadi E, Abedi P. Iranian women and care providers' perceptions of equitable prenatal care: A qualitative study. *Nursing Ethics*. 2016;23:465-77.
 - 27 Singh S, Doyle P, Campbell OM, et al. Referrals between public sector health institutions for women with obstetric high risk, complications, or emergencies in India-A systematic review. *PLoS One*. 2016;11:e0159793.
 - 28 Raj SS, Manthri S, Sahoo PK. Emergency referral transport for maternal complication: lessons from the community based maternal death audits in Unnao district, Uttar Pradesh, India. *International Journal of Health Policy and Management*. 2015;4:99-106.
 - 29 Chaturvedi S, Randive B, Diwan V, De Costa A. Quality of obstetric referral services in India's JSY cash transfer programme for institutional births: a study from Madhya Pradesh province. *PLoS One*. 2014;9:e96773.
 - 30 Hussein J, Kanguru L, Astin M, Munjanja S. The effectiveness of emergency obstetric referral interventions in developing country settings: a systematic review. *PLoS Medicine*. 2012;9:e1001264.
 - 31 Mason E, Chandra-Mouli V, Baltag V, et al. Preconception care: advancing from 'important to do and can be done' to 'is being done and is making a difference'. *Reproductive Health*. 2014;11:S8.
 - 32 Hemsing N, Greaves L, Poole N. Preconception health care interventions: a scoping review. *Sexual & Reproductive Healthcare*. 2017;14:24-32.
 - 33 Farahi N, Zolotor A. Recommendations for preconception counseling and care. *American Family Physician*. 2013;88:499-506.
 - 34 Tuomainen H, Cross-Bardell L, Bhoday M, et al. Opportunities and challenges for enhancing preconception health in primary care: qualitative study with women from ethnically diverse communities. *BMJ Open*. 2013;3:e002977.
 - 35 Schetter CD, Tanner L. Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. *Current Opinion in Psychiatry*. 2012;25:141-8.
 - 36 Cené CW, Haymore LB, Lin FC, et al. Family member accompaniment to routine medical visits is associated with better self-care in heart failure patients. *Chronic Illness*. 2015;11:21-32.
 - 37 Rosland AM, Piette JD, Choi H, Heisler M. Family and friend participation in primary care visits of patients with diabetes or heart failure: patient and physician determinants and experiences. *Medical Care*. 2011;49:37-45.
 - 38 Andrades M, Kausar S, Ambreen A. Role and influence of the patient's companion in family medicine consultations: "The Patient's Perspective". *Journal of Family Medicine and Primary Care*. 2013;2:283-7.
 - 39 Igel LH, Lerner BH. Moving past

- individual and “pure” autonomy: the rise of family-centered patient care. *AMA Journal of Ethics*. 2016;18:56-62.
- 40 Rimmer A. Can patients use family members as non-professional interpreters in consultations? *BMJ*. 2020;368:m447.
- 41 Whitehead L, Jacob E, Towell A, et al. The role of the family in supporting the self-management of chronic conditions: A qualitative systematic review. *Journal of Clinical Nursing*. 2018;27:22-30.