

# Exploring Women's Health Information Needs During Pregnancy: A Qualitative Study

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## Abstract

**Objective:** Pregnant women need health information to ensure their health and to have a healthy delivery. Therefore, equipping them with adequate information can bring desired health outcomes for them and their fetus. The present study was conducted to explore health information needs of women during pregnancy.

**Materials and methods:** The present research was a qualitative study. Thirty-nine participants (pregnant women, midwives, and obstetricians) were selected through purposeful sampling in Isfahan from June to November 2016. Data were collected through in-depth face-to-face semi-structured interviews, daily notes and field notes.

**Results:** Data analysis led to emergence of ten sub-categories including: "common complaints during pregnancy", "problems and complications in pregnancy", "factors affecting fetal health", "proper nutrition and take supplements during pregnancy", "sex during pregnancy", "exercise during pregnancy", "diagnostic tests in pregnancy", "fetal growth and development", "types of childbirth and preparation for delivery" and "baby care and breastfeeding" and finally the main category was the "health information needs".

**Conclusion:** Regarding the health information requests of pregnant women, their needs should be identified and taken into consideration when planning educational programs for this group of women.

**Keywords:** Information Needs; Health Information-Seeking; Pregnant Women; Qualitative Study

## Introduction

In order to ensure health and safe delivery, pregnant

women need health information (1). Acquiring health information enhances the pregnant women's health knowledge (2) which increases their ability to take preventive health behaviors, increases self-care capabilities, and reduces anxiety when facing new health issues or stressful situations (3, 4). During

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prenatal care, the information and advice provided to women are important because it enables them to recognize complications when they occur, increase their ability to overcome risk factors, take preventive health behaviors and decision-making for birth (5, 6). Different studies addressed the information needs of pregnant women worldwide (7, 8, 9). A study conducted by Lev indicated that the perinatal tests were the most searched topics by pregnant women via the Internet (10). Das and Sarkar also found that the information needs of pregnant women included nutrition, pregnancy complications and sexual intercourse (11). If pregnant women's information needs are properly identified, access to health information will be made easier and they would experience more general health and higher health security (12). Regarding the fact that there is little information on the health information needs of pregnant women in Iran, there is a need to conduct more studies in this area. Since qualitative research is an approach to discovering and describing people's experiences and giving meaning to them (13), therefore, the present qualitative study was conducted to explore health information needs of women during pregnancy.

## Materials and methods

**Design:** The present study is a qualitative research that was conducted employing content analysis approach from June to November 2016.

**Participants:** In this study participants were 30 pregnant women, five midwives and four obstetricians in Isfahan. Pregnant women were selected through purposeful sampling with maximum variation strategy in terms of age, level of education, job, gestational age and number of pregnancies. The midwives and obstetricians were selected through purposeful sampling with maximum variation strategy in terms of work experience. Inclusion criteria included willingness to participate in the study, providing informed consent, having the ability to understand questions and express experiences and Iranian citizenship. Exclusion criteria included reluctance to continue participating in the study at any stage of the study. In this study, due to the ease of access to participants, prenatal clinics and the offices of midwives and obstetricians were selected as the research environment. Participants were recruited through face-to-face meetings or telephone calls. The first author (MJ) did not have any role or relationship with the centers or participants.

**Data collection:** Data were collected through face-to-face in-depth semi-structured interviews, field notes,

and daily notes. After reaching eligible participants, none of them refused to participate in the study. The first author (MJ) was a Ph.D. candidate in the field of reproductive health who had 12 years working experience in midwifery and practical experience in qualitative research, conducted the interviews. Other authors have previous interviewing experience and qualitative paper/report writing. Interviews with pregnant women began with the general question "what kind of health information are you willing to receive during pregnancy? Please explain this?" Then the participants' open and interpretive responses guided the process. Interview with obstetricians and midwives began with the general question "What are the health information needs of women during pregnancy? Please explain this?" The interviews duration was between 30-65 minutes. The interviews continued until achieving information saturation, i.e. when new data were not added to the existing data. The places and time for the interviews were selected based on the participants' preferences. In the present study, participants were also asked to record daily issues related to their health information needs and to deliver them to the first author (daily note). Also, she recorded notes of participants' nonverbal behaviors during the interviews (field notes).

**Data analysis:** All interviews were digitally recorded. The interviews were transcribed verbatim by the first author (MJ). In order to analyze the data conventional qualitative content analysis (13) was used. In this regard, the interviews were reviewed frequently. Then important sentences and phrases were coded, and after the codes were formed inductively, the same codes were merged, and those with the same meaning were grouped together to form sub-categories, and eventually one main category.

**Trustworthiness:** In the present study, for the credibility of the data, various methods were used, including in-depth interviews at different times and places, and a combination of several data collection methods. In order to confirm the validity of the obtained contents, in other sessions, coded interviews were reviewed with five participants and their final opinions were summarized. The opinions of four experts were used to ensure that the findings were consistent with the participants' statements. In the present study, in order to increase transferability, the findings of the study were presented to five pregnant women with similar characteristics of the participants who did not participate in the study to judge the similarity of the study results with their experiences.

**Ethical considerations:** In the present study,

verification of the research was obtained from the Ethics Committee of the Research Vice Chancellor of Isfahan University of Medical Sciences (approved code No: IR.MUI.REC.1395.3.955). The reasons for the study were explained prior to each interview. Also, the obtaining the informed consent, maintaining anonymity, confidentiality of the data and the right to withdrawal at any time were observed.

**Results**

In this study, 30 pregnant women, five midwives and four obstetricians were interviewed. Demographic characteristics of the participants are shown in Table 1. Data analysis led to the extraction of 379 codes, 10 sub-categories and one main category. Sub-categories include: "common complaints during pregnancy", "problems and complications in pregnancy", "factors affecting fetal health", "proper nutrition and take supplements during pregnancy", "sex during pregnancy", "exercise during pregnancy", "diagnostic tests in pregnancy", "fetal growth and development", "types of childbirth and preparation for delivery" and "baby care and breastfeeding". The final main category was "health information needs" (Table 2).

**Common complaints during pregnancy**

Pregnant women complained of problems such as nausea, vomiting, frequent urination, fatigue, edema, increased vaginal discharge, heartburn and constipation. They narrated that they searched media such as books and the Internet for information on the causes of complaints, whether they were normal or abnormal, and solving them during pregnancy.

*"...I had lots of vaginal discharge during pregnancy and I was very scared of this issue, because it wasn't like my first pregnancy. I wanted to know if this discharge is normal or not?" (Pregnant woman, 28 years old).*

**Problems and complications in pregnancy**

Many of the pregnant women understood the risks of complications and problems during

pregnancy and sought to diagnose disease symptoms and prevent the complications during pregnancy before they occur. Some others sought to identify the nature, etiology, symptoms, diagnosis and treatment of these problems. Among the topics covered were abortion, preterm labor, placenta previa, and gestational diabetes.

*"Within the first months of my pregnancy, with the risk of having an abortion, I wanted to have some information to know which foods cause abortion. I heard that I should not use sesame, cinnamon, thyme and saffron during pregnancy because it causes abortion..." (Pregnant woman, 31 years old).*

**Factors affecting fetal health**

Healthcare providers narrated that one of the most important issues for pregnant women knows about the health of the fetus and they seek information about factors that affect fetal health.

*"...Some time ago a pregnant woman came and was worried about wrapping the umbilical cord around her fetus' neck. She thought this was because of the way she slept." (Obstetrician, 45 years old).*

Also, many pregnant women expressed concern about wrapping the umbilical cord around their fetus' neck and suffocating it (by change of their position during sleep or rest). Furthermore, they narrated that they have many questions about the effects of Wi-Fi waves, stress and medications taken during pregnancy on fetal health.

*"Why does the umbilical cord wrap around the baby? I asked this question a lot. Is it through the way of sleeping? Because the elders say that the mother should first sit and then role to the other side during sleep ..." (Pregnant woman, 28 years old).*

**Proper nutrition and take supplements during pregnancy**

Pregnant women asked to receive information on proper nutrition, amount of dietary intake, how to prevent overweight, and how to take supplements such as iron during pregnancy.

**Table 1:** Demographic characteristics of the participants

Participants	Variable	
Pregnant women (n=30)	Level of education	Secondary (5), Diploma (7), Associate's degree and B.S. (16), M.S. and Ph.D. (2)
	Job status	Employed (8), Housewife (22)
	Pregnancy trimester	First trimester (3), Second trimester (11), Third trimester (16)
	Pregnancy number	1-3
Healthcare providers (n=9)	Age (years)	35-51
	Working experience (years)	5-24

**Table 2:** Codes, sub-categories and main category extracted from data analysis

Main Category	Sub-category	Code
Health information needs	Common complaints during pregnancy	* Nausea and vomiting in pregnancy
		* Frequent urination during pregnancy
		* Fatigue in pregnancy
	Problems and complications in pregnancy	* Skin changes during pregnancy
		* Problems and complications in different weeks
		* Maternal and fetal complications of the placenta previa
		* Spotting in pregnancy and abortion
	Factors affecting fetal health	* Preterm delivery
		* Complications of Wi-Fi on the fetus
		* The effect of stress on the fetus
	Proper nutrition and take supplements during pregnancy	* Complications of drugs on the fetus
		* Complications of smoking on the fetus
		* How to take iron and folic acid in pregnancy
		* Proper nutrition during pregnancy
Baby care and breastfeeding	* Proper nutrition to reduce problems such as vomiting	
	* Harmful foods during pregnancy	
	* How to breastfeed	
Exercise during pregnancy	* How to prevent the neonatal jaundice	
	* How to bathe a baby	
	* How to care a baby	
Sex during pregnancy	* How and to what extent should they walk in pregnancy	
	* How to exercise during pregnancy	
Diagnostic tests in pregnancy	* Effects of sexual intercourse on the fetus	
	* Safe sex during pregnancy	
	* The reason for the change in sexual desire during pregnancy	
	* The reason for fetal wellbeing screening and its procedures	
Types of childbirth and preparation for delivery	* Interpretation of the results of tests, ultrasound and fetal wellbeing screening	
	* How to do amniocentesis	
	* Time of tests in pregnancy	
	* Time to refer to the hospital for delivery	
Fetal growth and development	* Painless delivery	
	* Complications of cesarean section	
	* How the fetus grows	
	* Gain weight in different months of pregnancy	
		* How does the fetus develop
		* Age of detecting heart beats of a fetus in ultrasound

"... I was wondering what to eat and what not to eat. What foods are suitable for me? How much vegetables and fruits should I consume? How much milk should I consume? ..." (Pregnant woman, 23 years old).

Healthcare providers also stressed the need to educate pregnant women on proper nutrition during pregnancy and also eliminating misconceptions.

"... Many of the pregnant women have problems

in their nutrition. For example, they heard that the egg enlarges the baby's head. ... We need to remove these misconceptions. They heard so many things about what to eat or not to eat that cause dilemma to them." (Midwife, 47 years old).

#### **Sex during pregnancy**

Pregnant women sought to obtain information about sex during pregnancy for fear of harm to the fetus. Pregnant women reported that because of

embarrassment and shame about asking such questions, they sought information through the Internet.

*"I have questions about sex during pregnancy. Does sex harm the fetus?" (Pregnant woman, 24 years old).*

### **Exercise during pregnancy**

Most pregnant women sought information on appropriate exercises to solve problems such as back pain, pelvic and leg pain, and a small number sought information on the benefits of exercise in easing the normal childbirth and having a comfortable delivery. Also, healthcare providers emphasized the information needs of women on how to perform exercises during pregnancy.

*"...A number of pregnant women ask: Are they allowed to exercise at all or not? How much exercise should they do? What exercises can they do...?" (Midwife, 40 years old).*

### **Diagnostic tests in pregnancy**

Many pregnant women sought information on how and when to perform fetal wellbeing screening tests during pregnancy. Also, due to stress and concern about the results of these tests, they searched the Internet for information on how to interpret these tests before visiting a doctor. Some other pregnant women were looking for information about the necessary tests in pregnancy, when and how to perform these tests, the reason for the request and how to interpret these tests.

*"... Especially for screening tests that not everyone knows how to interpret, I had to search the Internet a lot." (Pregnant woman, 29 years old).*

### **Fetal growth and development**

Many pregnant women impatiently sought information on how the fetus grows and develops and regularly sought information about fetal heart formation, the time of development of lung and other organs, fetal weight gain at different weeks, and fetal height in different months of pregnancy.

*"... I asked my doctor: what is happening in my body now... I wanted to know, in twenty weeks, is her growth OK... Is her weight OK?" (Pregnant woman, 26 years old).*

### **Types of childbirth and preparation for delivery**

According to the pregnant women, the fear of pain in vaginal delivery was another concern and they sought information on painless childbirth. Also, they sought information about how to prepare for a normal delivery.

*"... Another question I had was : what should I do before delivery?" What should I do to get*

*prepared for childbirth and have a better delivery? How can I have a painless delivery?" (Pregnant woman, 32 years old).*

### **Baby care and breastfeeding**

Healthcare providers narrated that pregnant women (especially in first pregnancy) had many questions about breastfeeding, diagnosis of breast milk adequacy, methods to increase breast milk, baby care, and ways to prevent jaundice and they were looking for information in these cases.

*"... Most of the time pregnant women ask about breastfeeding, neonatal jaundice and their nutrition during pregnancy so that their neonate does not get jaundice ..." (Midwife, 44 years old).*

## **Discussion**

The present study was conducted to explore health information needs of women during pregnancy. Based on the results, "common complaints during pregnancy", "problems and complications in pregnancy", "factors affecting fetal health", "proper nutrition and take supplements during pregnancy", "sex during pregnancy", "exercise during pregnancy", "diagnostic tests in pregnancy", "fetal growth and development", "types of childbirth and preparation for delivery" and "baby care and breastfeeding" were among the health information needs of women during pregnancy. Pregnant women in the present study expressed dissatisfaction with the common complaints during pregnancy and tried to solve these complaints by obtaining information through books and the Internet. Gholami and Mohammadi's study also investigated the messages exchanged via internet forums and showed that vomiting, genital discharge, gastrointestinal and urinary tract disorders were among the topics searched in pregnancy (14). Almost all women in a study in Sweden searched the Internet to find pregnancy-related information. The main reason was to find information and read about people in the same situation (15).

Some pregnant women in the present study searched information about problems and complications such as abortion, preterm labor, placenta previa, and gestational diabetes. Sutan et al. found that recognizing the clinical symptoms of high blood pressure, maternal and fetal risks, how to treat the disease, the likelihood of disease recurrence in subsequent pregnancies and warning signs were among the major concerns of women with high blood pressure during pregnancy (16). The findings of the present study showed that knowing the factors

affecting fetal health is one of the important health information needs of pregnant women. Owusu-Addo et al. also indicated that concerns about the health of the fetus were one of the main concerns of adolescent pregnant women (17).

Based on the findings of the present study, pregnant women needed information about proper nutrition and take supplements during pregnancy. Almoajel and Almarqabi showed that nutrition during pregnancy is one of the topics searched on the Internet among pregnant women, which was ranked second among the most searched topics (18). Kamali et al. showed that pregnancy nutrition was ranked fourth among the most searched topics by pregnant women (8).

According to the results of the present study, pregnant women needed information about sex during pregnancy and they sought information through the Internet. Due to new concerns caused by the presence of the fetus, pregnancy can make sexual intercourse undesirable and severely reduce sexual desire (19). A study by Ozgoli et al. in Tehran indicated that two-thirds of pregnant women were unaware of sexual issues during pregnancy and 68.2% of them had a negative attitude towards sexual intercourse (20). Therefore, regarding women's need to receive accurate information about sex during pregnancy, sexual health education and counseling should be considered.

Based on the findings of the present study, one of the health information needs of pregnant women is how to exercise during pregnancy. In this regard, the findings of a study indicated that a large percentage of pregnant women do not have an appropriate information and knowledge about exercise during pregnancy (21). Accordingly, holding training classes on the importance of exercise during pregnancy can be helpful.

In the present study, the pregnant women sought information on how and when to perform diagnostic tests as well as fetal wellbeing screening tests during pregnancy. Bryant et al. reported an intervention that explain testing options to women and help clarify their preferences is necessary (22). Dahl et al. believed that providing adequate information to pregnant women can be accompanied by knowledge of prenatal screening and psychological management of test decisions (23).

Most pregnant women in the present study were eagerly seeking to learn about fetus formation and how it grows and develops. Another study also showed that pregnant women are interested in finding out how the fetus grows and develops in different months of pregnancy (24).

In the present study, fear of pain in vaginal delivery was one of the concerns of pregnant women and they needed to obtain information about painless delivery and type of delivery. A study by Arfaie et al. showed that supporting, reassuring and educating pregnant women and giving information about delivery room, labor and strategies for coping with fear of pain and childbirth are critical (25). Thus, paying attention to holding better and more efficient childbirth preparation classes can be an effective measure in reducing fears and promoting vaginal delivery. In the present study, pregnant women had many questions about baby care and breastfeeding and sought information in this area. In a study in Riyadh, Saudi Arabia one of the information needs of pregnant women was postpartum care and how to vaccinate infants (17). In a study by Ogunmodede et al. how to breastfeed was one of the information needs of pregnant women stated by most of them (61%) (26).

## **Conclusion**

Based on the results, common complaints during pregnancy, problems and complications in pregnancy, factors affecting fetal health, proper nutrition and take supplements during pregnancy, sex and exercise during pregnancy, diagnostic tests in pregnancy, fetal growth and development, types of childbirth and preparation for delivery and baby care and breastfeeding were among the health information needs of women during pregnancy. Therefore, information needs of pregnant women should be identified and taken into consideration when planning educational programs for this group of women.

## **Strength and Limitations**

Through presenting an image of health information needs of women during pregnancy, the present study could help for designing the necessary interventions to provide information to meet pregnant women's needs and improve their health. Regarding the qualitative approach, generalizing the results of the present study should be done with caution. In this regard, attempts were made to increase the data accuracy and transferability by selecting the participants with the maximum variety, guidance and supervision of the experts and external review.

## **Conflict of Interests**

Authors have no conflict of interests.

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