



Explaining Effective Factors on Access to Maternal Health Information During Pregnancy: A Qualitative Study

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ABSTRACT

Searching and acquiring health information empower women to make informed decision and improve their health. Understanding the behavior of individuals in seeking health information is essential as it helps to develop appropriate health policies and enables people to obtain information. Therefore, identifying the factors that are associated with the search for health information in pregnant women is important. The aim of this study was to explain the factors that affect access to maternal health information in pregnant women based on their perceptions and experiences. This qualitative study was carried out in 2017 in Tehran. The participants in this study included 19 pregnant women who had been selected by purposeful sampling. Semi-structured interviews continued until data saturation was reached and data analysis was performed using conventional content analysis method. Data management was done by MAXQDA10 software. During the data analysis, the factors affecting access to maternal health information during pregnancy were determined in two main concepts: facilitating factors and inhibiting factors. Facilitating factors had several sub-category, including factors related to individual (such as; support and encouragement of family/friends to access health information, having a seeking attitude and spirit towards obtaining health information, lack of information in the past and knowing the appropriate ways to search in resources such as internet to obtain information) and factors related to the health and information system. Inhibiting factors also had several sub-categories, including related factors at the micro level and related factors at the macro level (such as; lack of information provision by the health system and the difficulty of obtaining health information). The results showed which factors that affect access to maternal health information are among facilitating factors and which factors are among inhibiting factors during pregnancy. Health authorities and especially maternal health institutions, by using the findings of this study, can make necessary planning to strengthen facilitating factors and eliminate inhibiting factors.

Key words: Access to Maternal Health Information, Pregnancy, Facilitating Factors, Inhibiting Factors, Qualitative Study, Iran

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INTRODUCTION

Pregnancy is one of the most important periods in women's lives. In this period, woman as a healthy person grows another human being inside herself and needs more care and attention because of the

physical and psychological changes that are caused by pregnancy [1]. According to the WHO's report in 2014, factors such as poverty, inadequate services, low numbers of healthcare workers, incorrect cultural beliefs, and lack of information prevent women from receiving information on antenatal care. The same report indicates that, around 800 women die every day worldwide due to pregnancy or childbirth related

complications [2]. Many pregnant women are prone to fear, anxiety and uncertainty in pregnancy; therefore having awareness and adequate information about health care along with other medical practices is essential [3]. Pregnant women prepare themselves by obtaining information, because receiving care during pregnancy can significantly affect the outcomes of pregnancy [4]. Seeking information empowers women to make informed decision and increases their understanding of primary prevention and health promotion. Pregnant women can obtain information from a wide range of resources such as family, friends, physicians and midwives [5].

Understanding the individuals' health information seeking behavior is essential for developing appropriate health policies and educational strategies for obtaining health information. Therefore, identifying factors that are associated with the health information seeking behavior in pregnant women is important. On the other hand, the decision to search for care and information is complex and influenced by a number of determinants [6]. Kavlak et al., found that, the level of education, occupational status, number of pregnancies and age of mother may affect the information seeking behavior [7]. Shieh et al showed that, information needs and barriers to access information are among the determinants of health information seeking behavior; more information needs and fewer information barriers are likely to be involved in the increased health information seeking behavior [8]. Other studies indicated that, the use of health services has a correlation with the availability, quality and cost of services, social structures, health beliefs and individual characteristics of the service users [9, 10].

Despite the importance of maternal health information seeking behavior in pregnant women for proper planning of the healthcare system, there is not enough information on the factors affecting the process of obtaining information in pregnant women. Among the limited related studies, there are more studies with quantitative methodology, and none of them has been qualitatively exploring the factors that could affect the ability of women in accessing health information during pregnancy, and only examined the barriers to accessing health information and factors that facilitate access to information have been ignored. Therefore, this qualitative study was conducted on pregnant women in Tehran

with aim of explain the factors that affect access to maternal health information during pregnancy.

MATERIALS AND METHODS

The present study was carried out using qualitative method. The exploratory and deductive approaches of qualitative methodology help to discover and identify the hidden dimensions of a phenomenon. On the other hand, due to the fundamental differences in various cultural and social contexts, qualitative methodology was used in the present study instead of quantitative method [11].

Information was gathered from 19 pregnant women from February to July 2017 through semi-structured interviews after obtaining informed consent from them. The participants were selected purposefully based on the entry criteria (having at least reading and writing ability and speaking in Persian language) with maximum variation in terms of age, education, history of pregnancy, etc. Women with known psychological disorders and experience of mournful incident in the last six months were not included in the study. The main question of the interview was "In your opinion, what factors influenced your access to information during your pregnancy"? Then, based on the responses, the interview process was guided. The interviewees were asked to explain or clarify their statements and bring some examples. Interviews lasted between 30 to 45 minutes, which were carried out in private and prenatal care clinics at a quiet location, according to the previous arrangements. Content of the interviews were recorded and handwritten with the permission of the interviewees. MAXQDA software version 10 was used for data management and conventional content analysis method was used for data analysis.

The credibility and reliability of the data were assured through long-term engagement with data until data saturation, allocation of adequate time for data collection and analysis, implementation of the interviews without any pre-assumption, and the use of participants and research group's re-check of the interviews, codes and categories.

Ethical principles in research such as; acquiring a code of ethics with the number: IR.TUMS.VCR.REC.1395.1866 from Tehran University of Medical Sciences, obtaining written informed consent, and preserving the principles of

anonymity, confidentiality and discretion of the participants to withdraw from the research were observed.

RESULTS

In total, 19 pregnant women aged 16-45 years participated in this study, from whom, 12 were nulliparous and 9 were multiparous. The lowest gestational age was 7 weeks and the highest gestational age was 39 weeks. The participants' level of education was between secondary school and PhD student and they were mostly housewives. During the process of data analysis, the factors affecting access to maternal health information during pregnancy were determined in two main concepts: facilitating factors and inhibiting factors. Facilitating factors included several sub-categories, including individual related factors and factors related to the health and information system. Inhibiting factors also had several sub-categories, including related factors at the micro level and related factors at the macro level.

Facilitating Factors

Individual related factors included the support and encouragement of family/friends to access health information, having a seeking attitude/spirit towards obtaining health information, lack of information in the past and knowing the appropriate ways to search in resources such as internet to obtain information. The support and encouragement by family/friends to access health information and services was a facilitating factor, so that the husbands were helped to mother in the preparation and search of appropriate resources and information. The husbands were carefully, sensitively and curiously seeking health information to help the mother's health, and prepare themselves to face pregnancy outcomes such as childbirth. The mothers also believed that, their husbands were reliable sources of information, so they accepted their information.

"I do not pay attention myself; my husband is very careful ... My husband is very persistent, he goes on the internet and says that, herbal remedy and things like that are not good at all in the first trimester of pregnancy ..."

Another participant in this regard stated that, her husband was encouraging her to seek information, and if he did not encourage her, she was reluctant

to search for information herself: "My husband is more sensitive than me, and finds information himself. He also encourages me to get the information ... I say, maybe all that I have said so far, my husband encouraged me to say. I was not going to search for information myself. "

On the one hand, in addition to spouse, the support of relatives to search for information was also effective in accessing the information when the participants were unable to do it themselves: "I did not have a cell phone myself, so I called my cousin and asked her to search for information on pregnancy at my gestational age; for example, find out the embryo has grown completely or not ..."

One participant stated that, if her mother did not insist on searching for information, she would have not done anything about it: "At the first month, I went to do the first sonography because my mom was forcing me to do so and said, do you not want to see how is your baby like?... I did my first sonogram because of my mom; otherwise I wouldn't have done it. "

Having a searching spirit for health information was also one of the facilitating factors in accessing health information. Women who were curious and had information seeking spirit were less likely to have problems with pregnancy and could better manage their pregnancy through the information and services that they have found. Mothers stated that, from the point of view of health care providers, especially physicians, pregnancy-related issues are common, so they do not explain the issues to mothers, but it is important for the mother to ask them to answer their questions.

"You have to ask the doctor over and over again. I'm writing a note so I can ask the doctor. Because it's so common for them, you should ask them to get answer."

"Well, I've read and heard people who had problem and ignored their problem, have been having serious problems, but those who were persevering and being stubborn ... have had a better result. I think being persistent and asking question will save you from problems."

Not having information in previous pregnancies has also led to more searches for information and health services in the current pregnancy. One participant stated: "I delivered my first baby at the month 7 and that was quite an experience for me

because I did not have any midwifery visit or service. Perhaps due to some reasons such as inadequate nutrition or not following certain things, I gave birth to a 7-month old premature baby. However, now I do not want to repeat it again ... So I try to get information about my nutrition and rest”.

Knowing the right ways to search in resources such as internet for information can be a facilitator in accessing accurate, useful, and valid information. In this regard one participant stated: "Still, if I am having any problem, the first thing I do is to go on internet, I mean, internet is the best and easiest way to access information if you know how to search correctly ..."

In the subcategory of the factors related to health and information system, issues such as the willingness of healthcare providers to provide information, allocation of sufficient time to the pregnant mother, simple and understandable information, and the availability of sources of useful information were mentioned by the participants.

The willingness of healthcare providers such as physicians and midwives to provide information, spending enough time to respond to the questions of mothers, and making sure the mothers receive the right care were among the systemic factors that were affecting access to health information. The participants believed that, despite long waiting time in the hospitals, the healthcare workers have more enthusiasm, are more willing to spend time with you, and gave more accurate information than in private clinics:

"The midwives (in hospital clinics) are very persistence. If I do not go for my appointment for a week, they will call me to see why I have missed my appointment ..."

One participant stated that, her doctor had given her an option to make a phone call if she had any question. "Each time that I was going to visit my doctor, I was asking her questions, because I knew that, she allocates sufficient time for her patients and answers their questions even over the phone...."

Simple and understandable maternal health information makes the topics understandable and practicable for all mothers. The participants stated that, complicated terminologies and phrases are much less in the websites that have been designed by healthcare providers and TVs, and they publish

information that is consistent with everyone's understanding.

"They are in my own language, and the internet is a good thing. The information can be found in every language and is understandable by everyone that can read."

"The information you get on the TV... You know, the doctors who come on TV know that, everyone can sit back and watch TV, so they talk in a simple language so everyone can understand them, someone like me..."

The presence of expert and knowledgeable relatives helps pregnant mothers in obtaining information and services. From their point of view, some resources, such as television, are very rich sources of information and access to them is simple. They can increase the awareness of society and all people, even those who are not eager to use other information resources, can easily use this source and get information.

"You know, my friend is a very good source of information for me as she is a midwife ... people like me, who do not have information about pregnancy issues, become concerned when they hear something. So, thanks God for my friend as I can ask her my questions."

"Well, the TV is very good, I mean, TV is not comparable with any of the sources of information. For instance, the health network is a very rich resource ... it's a good facilitator ... Instead of having to read 400 pages of books, an expert can give you lots of information in half an hour."

Inhibiting factors

Participants' experiences indicated that, inhibiting factors at macro level are related to the health and information system, including the lack of provision of information by the health system and the difficulty in obtaining health information.

Failure to provide adequate, relevant, and appropriate gestational information is one of the inhibitors of accessing health information. One participant stated that, mothers are not given adequate information that are proportionate to their gestational age and their needs despite the fact that providing information to the mother can reduce the cost of treatment. This issue has been neglected by the health system.

"The mothers require information ... I mean, the information they need is not given to them For example, when you teach them about fetus movement, their clinic visit is reduced. These are the information that a mother needs to have, but the information is not often given to her in the visits."

The participants talked about the difficulty of receiving health information due to the high cost and timing of the process of receiving information and the lack of adequate time spent on them by the health specialists (physician or midwife). Some healthcare centers do not pay enough attention to the mothers and do not provide accurate care and services to them due to the high number of attendees.

"I was going to private clinic until the week 25, where I saw people in here (the hospital), who were coming to the same educational class, were in a better condition than me. Despite spending much more money in private clinic, the physician spends just 5 minutes with you as she is too busy; take this supplement, do this test, baby's weight is ok, come back in two weeks, this and that. This is wrong, I have many questions but the way she talks, I forget my questions."

"I got some information from a midwife in the clinic ... I asked her fewer questions as she was busy ..."

At the micro level, the inhibitors of the search and access to information are related to the individual and his/her relatives, such as; the search being stressful, individual characteristics, inability to use information on the internet, low level of knowledge of relatives and their beliefs.

One participant referred to the search for information as being stressful and inhibitor of the information search: "From a certain gestational age, I decided not to search for information further, because when I search for information I use to get vey stressed."

Individual characteristics such as beliefs, age, not having time to search for information, weakness in understanding English content, boredom, embarrassment and shame, having a feeling that information are useless, and not taking pregnancy seriously were among factors that negatively affected the search for information in some pregnant women.

"One of the websites on pregnancy was explaining about what to eat. The explanation was too much and I was bored to read it all (how many grams of meat, a few grams of protein). You know, I do not have time for such details, so didn't read it."

"Well, it happens often. You are embarrassed to speak out your mind."

"My mom told me so many times that, do not travel ... what not to do, but I did not listen. I thought pregnancy was simple, I was not aware, and now, I am paying the price."

"I did not know anything in my first pregnancy. I thought I even do not need to rest, as everybody gets pregnant...."

Failure to use internet content such as lack of access or limited access, lack of proper knowledge on how to use internet, and filtering of some websites have caused mothers not to be able to acquire information from internet and social networks.

"I do not have much access to the internet I do not even know how to search. So, I did not even try."

The low level of knowledge of those around mothers could also affect their intention to search for information. One participant in this regard stated: "The level of knowledge of people around me is important. In some cases, they prevent you from trying to get information. For example, you have a question and they say, forget it, you have question and you want to go and find an answer!!!"

DISCUSSION

The findings of this study indicated that, the factors affecting access to maternal health information can be classified in two groups of facilitating factors (factors related to individual and factors related to the health and information system) and inhibiting factors (related factors at macro level and related factors at micro level).

One of the factors mentioned by the participants as a facilitator was the support and encouragement of the family and friends for accessing health information. One study showed that women living in a large family use more antenatal care than a woman living in a small

family [12]. Galarce et al stated that, family members and friends often play an active role in seeking information on behalf of their loved ones [13]. This finding, in line with the result our study, emphasizes on the support of family in accessing health information, and highlights the importance of planning by health authorities and social groups to strengthen this form of support.

Having a searching attitude/spirit to acquire health information is also considered as a very important facilitator. Structural and organizational factors are very important in acquiring information. However, even if all the platforms are available but the mothers do not have a searching attitude and spirit, these platforms will not be very useful. Marrel in a study stated that, the most important feature in studying of information seeking behavior is whether or not the individual has a seeking attitude towards information; the characteristics of women, such as maternal motivation [14], self-efficacy and believing in the control of fetal health [15] are related to the search for health information during pregnancy. The results of Tsehay's study showed that, lack of knowledge, perceived risk of health and the search for healthy living are the major factors that simulate women to search for information [16]. Therefore, it seems that in order to improve the seeking behavior towards health information in pregnancy, designing programs to improve the information seeking behavior by the health and information system is a necessity.

Another factor that was affecting the ability of pregnant women to acquire information was the lack of experience in acquiring information in the past. Simkhada in a study found that, having a history of childbirth complications has an impact on the use of prenatal care [17]. In our study, this issue was referred to by women with second and more pregnancies. This can highlight the importance of education for women in their first pregnancy, as it can have a significant impact on the pregnancy.

The availability of useful information resources, including the presence of friends and family who have knowledge in the field of maternal health, access to the internet and, in particular, access to the mass media and social media, etc, also play an important role in enhancing the access to information according to our findings. A study reported that media, especially TV, often plays a significant role in obtaining health information

[18], and watching TV on a weekly basis is associated with the better care during pregnancy and delivery in the hospital [19]. Therefore, given the fact that access to some information resources such as expert friends or even the internet is not possible for everyone, the healthcare policy makers should focus on providing information on pregnancy through these resources especially television as they can be more cost effective than other programs considering the role of mass media. Furthermore, allocating a midwife to a pregnant woman throughout her pregnancy can be helpful as the midwife can answer her questions.

Participants referred to issues such as; the willingness of healthcare providers to provide information and allocation of more time to the pregnant mothers, provision of simple and understandable health issues and knowing the appropriate ways to search through resources such as the internet to find information, as facilitators. However, in the related studies that have been done so far, we were not able to find any research for further discussion due to quantitative methodology of them and the focus of these studies which was just to identify the barriers to access to health information. It may be better to study the individuals who have a positive experience in searching for information, understand information better and know more effective ways of searching in order to fill the knowledge gap that exists in this regard.

In regard to the health system, the obstacles in accessing health information include; lack of adequate, complete and timely information provided by the healthcare providers and the difficulty of receiving health information. In line with the results of our study, conditions such as lack of empathy and poor behavior of staffs, crowdedness, lack of confidentiality, lack of appropriate discussion and advice by healthcare providers [3], long waiting times [3, 20-22], high costs [20, 21, 23], and difficult and unclear language of healthcare providers [24]. Previous studies have reported that women lose their trust in the healthcare providers due to limited time spent on them by the healthcare providers [15, 25]. When there is no effective communication, a person's dissatisfaction may lead him/her towards resources that offer incorrect health information [26]. Therefore, according to the results of this study and previous studies, it is important that healthcare providers are

encouraged to pay more attention to the women's education and behave more appropriately with pregnant women so that mothers are more motivated to search for information and acquire them. On the other hand, as the amount of time allocated to pregnant women may be short during visits, group counseling and short educational video clips on pregnancy in the waiting place of the health centers may be a helpful way in providing information to these women.

Obstacles related to individual characteristics for accessing health information in pregnancy are among factors that policy makers and health care providers should take under consideration. Socio-economic factors such as age, income, and education level play an important role in seeking information behavior [27]. In studies, barriers such as embarrassment and shame, misconceptions and fear of discussing pregnancy complications with physician [20], lack of awareness [22], neglect of pregnant women in acquiring health information [28], social values and norms [29], beliefs and self-efficacy [30], lack of sufficient time to search for information [31], inadequate knowledge on the use of internet and electronic resources, difficulty in understanding related medical terms and terminology [32] and the inability to understand the material in English [28] have been mentioned. We should note that, beliefs are important in having a sense of need for searching information and if people do not believe that knowing more about a subject helps them to change positively, they will not search for information. Therefore, according to the findings of this study and the previous studies, the existence of health and information system platform is not sufficient for obtaining health information and the individual and background characteristics that lead to search or delay the search for information by mother should also be considered during maternal healthcare planning. For people, the search for information can be stressful and this was one of the barriers of information seeking in our study. In this regard, it is suggested that information resources such as healthcare providers should reassure mothers that searching and increasing awareness through the use of reliable sources and information is essential in maintaining and improving their health and the health of their children.

Failure to use internet information for reasons such as; lack of internet packages or devices like smart phone was also mentioned by the mothers in our study. In the study of Zickuhr & Smith, the

main reasons for not using the internet were; not considering it as an information source, not having computers and the cost of internet access [33]. In this regard, making centers with free internet access that can help mothers find information without worrying about its cost or computer can be beneficial.

Sometimes, a person may be unable to understand the importance of obtaining information, but other factors may affect his/her ability to search for information [3]. The presence of relatives during antenatal care [34], including the spouse and mother in low, and their power to make decision on the need to obtain information or services from health centers [35] can be an important inhibitor of information seeking behavior by mothers, which was also mentioned by the participants in our study. Therefore, emphasis on the participation of family and friends, especially the spouse, in the search for information in pregnant women is important and requires more planning.

CONCLUSION

The findings showed that, factors such as facilitators and inhibitors in different levels related to the individual, family and friends, and health and information system affect the access of pregnant mothers to the information. Although the effective factors are divided into two facilitating and inhibiting categories, these two are not separate and contradictory. Therefore, interventions should be designed in a comprehensive manner for both factors, in particular, the facilitating factors. The findings of qualitative approach lead to a better understanding of people from a subject, but cannot necessarily be generalized to a broader context with the same degree of confidence. However, the results can be used as the basis for designing and implementing policies and strategies to increase the availability of information during pregnancy.

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Availability of data and materials

All data are available from the corresponding author on reasonable request.

Authors' contributions

ST conducted all stages of the study, analyzed and interpreted the data and wrote the manuscript. ZT and MT supervised in the planning and supervised all stages of the study. All authors critically reviewed and revised the manuscript for important contents. All the authors have read and approved the final manuscript.

Ethics approval and consent to participate

The present study was approved by the Ethical Committee of the Tehran University of Medical Sciences, Iran (ethics code: IR.TUMS.VCR.REC.1395.1866). From all mothers who were willing to participate a written informed consent was obtained.

Consent to publish

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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