



## Research article

## Educational needs on safe motherhood from the perspective of suburban women: A qualitative study

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## ABSTRACT

**Background:** Maternal mortality resulting from pregnancy and delivery complications is a sensitive indicator of women's status in the society, access to care services, and sufficiency and quality of healthcare and is the major indicator of a country's developmental status. The present study aimed at determination of educational needs regarding safe motherhood from suburban women's perspective.**Method:** This qualitative study with conventional content analysis approach was conducted in suburban healthcare centers of Alborz University of medical sciences from 23 October to 22 December 2019. The participants included 15 eligible Iranian suburban women who were selected through purposive sampling. The data were collected via in-depth semi-structured interviews and focus groups. Data were analyzed with MAXQDA10 software.**Results:** Three main themes emerged from the analysis of the data (barriers against safe pregnancy, accountability multidimensional training, and threats and opportunities of distance learning), six categories, 11 subcategories and 547 codes.**Discussion:** The results indicated that suburban women were less probable to be present in healthcare centers and receive the required information compared to their peers due to their conditions; provision of accessible training services appropriated to their conditions can greatly contribute to elimination of these problems.

## 1. Introduction

The concept of safe motherhood was created by various organizations in 1987. This program aimed at resource mobilization, creation of political will, and identification of effective interventions for reduction of maternal and infant mortality resulting from pregnancy and delivery [1]. Maternal health and allocation of sufficient political and financial resources are considered as top priority of health index [2].

The latest report by the World Health Organization (WHO) has indicated that almost 830 women die daily due to pregnancy and delivery complications, with 99% of the cases occurring in low – middle-income countries. Based on the recent studies, from 2011 to 2015, maternal mortality has decreased from 385 to 216 per 100 000 live births around the world, from 10 to 8 in England, and from 83 to 23 in Iran [3, 4]. Considering the Millennium Development Goals, maternal mortality should be reduced to 75% of the rate reported in 1990 by 2015. Based on

the Sustainable Development Goals and WHO's latest statement, maternal mortality should be declined to two-thirds by 2030 in Iran [5].

Maternal mortality resulting from pregnancy and delivery complications is a sensitive indicator of women's status in the society, access to care services, sufficiency and quality of healthcare, and capacity of the service providing system for meeting women's needs and is the major indicator of a country's developmental status [6]. This index is a function of various factors, including poverty, education level, living place, access to services, inadequate prenatal services, unplanned pregnancy, health-care costs, and harmful beliefs [4].

In the recent years, world has experienced an unexpected growth in urbanization [7, 8], which has provided the ground for improvement of the health status [9]. However, urbanization is accompanied with negative consequences, as well [10]. An important outcome of urbanization is suburbanization, which reduces individuals' access to health opportunities, thereby endangering their health [11]. In Iran, disordered neighborhoods and slums have been formed in megacities' suburbs out of

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the official urban development plan in the recent years [12]. Based on the latest statistics, Iran's suburban population included 9 739 123 individuals in June 2014 [13], which increased to 10 280 270 in October 2015 [14].

Suburbs have not been scientifically explored with respect to the social, economic, and cultural factors associated with pregnancy. In these regions, similar to other locations, demographic variables including the length of marriage, age at marriage, and birth interval, personal variables including age, income level, education level, residence history, and ethnicity, and sociocultural factors including gender preference, social security, social respect, and life satisfaction affect behaviors during pregnancy [15]. Studies have revealed lower health indices among suburban women compared to the others [16]. In fact, suburban women are faced with such problems as domestic violence, physical violence during pregnancy and breastfeeding, malnutrition during pregnancy, obligation to do hard physical tasks during pregnancy, marriage and pregnancy at low ages, and insufficient prenatal and healthcare services [17]. A prior research in Iran demonstrated that 50.8% of these women did not have sufficient access to prenatal services [18]. Low access to healthcare services during pregnancy can in turn lead to unwanted pregnancy, unsafe abortion, sexually transmitted diseases, and increase in maternal morbidity and mortality. Although these services have increased globally, unequal access in these regions with limited resources is still a challenge [19].

Promotion of maternal health is necessary to strengthen pregnant women, as the core of the family and a vulnerable group in the society, via consultation, health behaviors training, and proper pregnancy care [20].

Considering what was mentioned above, this study aims to determine of the educational needs regarding safe motherhood from suburban women's perspective in order to take steps towards promotion of this vulnerable group's health.

## 2. Method

This study was conducted as qualitative research. Data were analyzed through a content analysis approach.

### 2.1. Health facility sampling

At first, the health centers with the largest number of referral in the suburbs of Alborz Were identified with the assistance of the Health Vice-chancellor of Alborz University of Medical Sciences. Then, the interviews were carried out from 23 October to 22 December 2019.

The participants included 15 Iranian women in first part of 2.3 session.

### 2.2. Participant sampling

In order to develop a comprehensive understanding of needs education of participating, a purposeful sampling of women was recruited. Maximum variation sampling was used to recruit a diverse group of women. The purpose of the study was explained and obtained written informed consent to participate in study. 20 women were selected for participating in study but 5 women declined to participate in study. Women who agreed to participate received a telephone call to arrange a time and place for an interview.

### 2.3. Participant characteristics

The participants included suburban women. The inclusion criteria for suburban women were referring to the selected health centers, being married, being pregnant or in the first six weeks after delivery, not suffering from physical or mental disorders that could affect the interview, understanding and speaking Persian, having the ability to read and write, and being willing to take part in the research.

### 2.4. Data collection

Data were collected through in-depth semi-structured interviews. The interviews were carried out from 23 October to 22 December 2019. The open questions used for the participants were as follows: 'talk about your experience during pregnancy', 'how do you feel about your pregnancy', and 'what were you worried about receiving services'. At the end of the interviews, the participants were asked to express anything left unsaid. Totally, 15 participants were interviewed in this research. The interviews lasted for 45–90 min and averagely for 60 min.

The interviews were conducted by the first four authors in a private room and were recorded with the interviewees' permission.

### 2.5. Data processing

The interviews were immediately transcribed word by word and were coded. After analyzing each interview, the next one was performed.

### 2.6. Data analysis

The data were analyzed using conventional content analysis and were processed using Graneheim and Lundman method [21]: The extracted codes were managed using MAXQDA10 software.

### 2.7. Rigor of study

In order to confirm data accuracy, the following criteria mentioned by Lincoln and Guba [22] were used: credibility, dependability, confirmability, and transferability. In so doing, the following techniques were employed: spending enough time for data collection and analysis in order to gain a deep understanding of the participants, prolonged engagement with the data and frequent modification of the codes, reviewing the interviews and initial codes by the participants, reviewing the interviews and the categorization process by the research team, and thick description of all research processes from the beginning to the end.

### 2.8. Ethical consideration

The study was conducted after obtaining the required licenses and an ethics code (971974) from the National Agency for Strategic Research in Medical Education (NASR). Participants were provided with information about the researcher and the study objectives. They signed consent for recording the interviews and they were ascertained about the confidentiality of their information. They assured that the recorded interviews removed after the end of the study.

## 3. Result

The participants' demographic characteristics have been presented in Table 1.

The results of content analysis revealed three themes, six categories, 11 sub-categories, and 547 codes.

- 1 Barriers to safe pregnancy, including three categories of worries during pregnancy, present problems against access to services, and need for support.
- 2 Accountability multidimensional training, including two categories of need for training and mother's preference of safe pregnancy services,
- 3 Threats and opportunities of distance learning, including two categories of barriers and facilitators.

**Table 1.** Demographic and fertility characteristics of the study participants.

Variable		F	%	Mean ± SD
Woman's age	20–24	2	13	30.1 ± 6.3
	25–29	6	41	
	≥30	7	46	
Age at marriage	<18	4	27	
	18–28	11	73	
	29–35	0	0	
Age at the first delivery	<18	2	13	
	18–28	9	60	
	29–35	4	27	
Woman's education level	Primary/high school	4	27	
	Diploma	8	53	
	Bachelor's degree	3	20	
BMI				24.96 ± 3.53
Gestational age				15.40 ± 11.7
Number of children	0	3	20	
	1	7	47	
	2	3	20	
	≥3	2	13	
Planned pregnancy	Yes	13	86	
	No	2	14	

### 3.1. Barriers to safe pregnancy

These barriers consisted of worries against pregnancy, access to services, and need for support.

#### 3.1.1. Worries during pregnancy

Pregnancy and delivery are stressful experiences for mothers. In this context, fear of delivery is among the mothers' worries, which may result from lack of knowledge about the delivery process. In this regard, one of the participants maintained: "I don't know what I should do on the day of delivery, because I don't know what is going to happen, I have no experience. Many of my friends talk to me, but I'm still a timid person. I haven't watched a natural delivery video yet. I say I'll be relaxed if I undergo cesarean section" (**participant 2**).

Another participant with a six-year history of infertility also talked about the fear of delivery: "I'm worried about delivery now. I can't accept natural vaginal delivery. I've spent a lot of money for having a child during these six years, the ways I went through, what others said, I was getting old, and I was worried. Now, I can't accept natural delivery" (**participant 9**).

The mothers were also worried about giving birth to a sick child. In this respect, a participant who suffered from diabetes said: "I suddenly think I have diabetes and this may affect my baby" (**participant 1**).

Another participant with a hyperactive child stated: "My first child is hyperactive and I'm really hurt. I also have a lot of stress for this one; I say this will also be like the first one, it will be hurt, I like to have someone to tell me what to do and how to spend my pregnancy period" (**participant 4**).

The mothers were also worried about the costs of pregnancy and child care. In this regard, one of the participants with congenital heart disease maintained: "I have congenital mitral valve prolapse for which I referred to a specialist. I need to have a cardiac consultation, as well, but it costs a lot. My husband and I say pregnancy is costing too much; how are we going to raise our child?" (**Participant 2**).

Another category of the barriers against safe pregnancy was the need for support, particularly on the part of the husband. In this context, husband's unawareness of the changes occurring during pregnancy and delivery caused problems in the marital life and feeling of loneliness and insecurity among mothers. One of the participants stated: "Men have to know many things. For example, they should know the feelings, feeling of

nausea and vomiting. They shouldn't expect women to work as they did in the past. They should cooperate and understand their wives. If the man doesn't understand his wife, she will feel lonely and will have difficulty tolerating the pregnancy period" (**participant 6**).

Another barrier against safe pregnancy was access to services. In this regard, many participants complained about para clinical expenditures, services accessibility, time-consuming access to services, lack of specialists, lack of information about service providing centers, and long distance. One of the participants maintained: "Specialists are scarce and are not present in these centers. Doctors' opinions are needed in some cases. "I have to wait for the doctor to ask my questions, I have to say something to the doctor, the doctor should be there all the time, not just at a specific time" (**participant 3**).

### 3.2. Accountability multidimensional training

This theme consisted of mothers' preferences and educational needs. The mothers' educational needs included utilization of preferably offline applications, need for training hours in the health center, utilization of Interactive Voice Response (IVR), educational aids such as CDs, and some information for increasing awareness about pre-pregnancy, pregnancy, and postpartum. One of the participants stated: "Now everything can be done via the internet. It's not like the past that no one was aware of anything. Today, all people have smartphones. There should be an application for pregnant women. I install the application on my smartphone. It informs me about the symptoms that I have in this month, what happens, the changes. It's easily accessible. You can also use it when the weather is snowy or rainy and you can't go to the center" (**participant 7**).

Another subcategory was the mothers' educational needs from before pregnancy up to after delivery. Concerning pre-pregnancy training, one of the participants said: "Planned pregnancy is better. Your pregnancy is devoid of stress and you're ready for a new member psychologically. Husbands have to be ready, as well, they have to be prepared for pregnancy and have the necessary skills for growing a child" (**participant 3**).

Other educational needs during pregnancy included the need for training regarding laboratory tests and screening services, gender attitude, delivery processes, exercises during pregnancy, week-by-week changes during pregnancy, and common problems during pregnancy. Moreover, educational needs after delivery included breastfeeding,

infant care, acceptance of maternal and paternal roles, and exercises after delivery.

### 3.3. Threats and opportunities of distance learning

This theme consisted of deterrents and facilitators. The deterrents included low literacy level, access to the internet, cost of access to the internet, fear of the dangers of mobile phone radiation, fear of the dangers of using the internet, tendency to receiving services in person, and economic problems. One of the study participants maintained: "Honestly, I don't use the internet because I'm pregnant and they don't let me do so. My husband has disconnected the internet. I used the internet before, but now; I'm worried that it may be harmful for my baby" (participant 8).

Another participant said: "I use my smartphone less frequently because they say it's not good. They say it's bad for the baby because of its radiation" (participant 9).

The facilitators of safe motherhood training included the need for fast response, accessible services, receiving services 24 h a day, and understandable information that is briefly presented in healthcare centers due to time restrictions. In this regard, one of the participants stated: "I think there should be an understandable training method, which is accessible all the time and provides the information we need. The centers are usually very crowded and we can't ask our questions. There should be a channel for us to gain enough information" (participant 10).

## 4. Discussion

Mothers' fertility and health are affected by a set of economic, social, and cultural factors.

The important barriers against safe pregnancy included problems against access to prenatal services, such as distance, high costs, lack of specialists, stress, and lack of sufficient information about the service providing center. Results of study in Ghana showed the obstacles of receiving appropriate prenatal care in rural region were inadequate medical equipment and essential medicines, infrastructural challenges, shortage of skilled staff, high informal costs of essential medicines [23]. Results of a study in Iran showed the main reasons for not referring to receive prenatal services included unwillingness (25%), long waiting hours, lack of financial means, and inappropriate physical space of the center (16.7%) [24]. A result of qualitative study in Ghana showed the cause of delay in seeking prenatal visit was: Women's lack of autonomy to seek care without prior permission, perceived quality care of traditional birth attendants, stigmatization of unplanned pregnancies and cultural beliefs associated with late disclosure of childbirth [25]. In another study, the effective factors in selection of pregnancy and delivery care services were the household's economic status, education level, hospital care quality, household size, information about modern facilities, traditional beliefs and social taboos, access to family planning services, receiving prenatal services, high costs of modern services, lack of awareness, trust in the traditional system, distance, lack of access to modern services, disapproval of older family members, and lack of transportation facilities [26]. In another research conducted in Delhi in 2015, 54% of the suburban women had not received care services during puerperium, which was attributed to long waiting hours (28.6%) and lack of financial means (20%) [27].

Another issue mentioned in the current study was lack of information about the location of service provision, which was consistent with the results obtained by Khayat et al. in 2018. They mentioned that not having information about the center and lack of transportation facilities were the main reasons for not following up prenatal problems, such as hypertension and preeclampsia [24].

Another theme revealed in the present study was accountability multidimensional training. The participants pointed to multidimensional educational needs in terms of safe motherhood. Education helps people get self-sufficient and be able to help others live a healthier life. Individual learn through various techniques and conditions [28]. In the

present study, the participants referred to direct (in person) as well as indirect (virtual education through IVR, available channels, internet, and applications) training methods for meeting their needs with respect to safe motherhood. Thorndike et al stated that individuals learn through various methods and conditions [29] and that learning is the cornerstone of education. In addition, adults should be trained such a way that the training meets their educational needs, because adults are trained based on their internal motivations and needs. Thus, they select self-oriented training methods, because they are responsible for their learning [30]. Moreover, promotion based on personal abilities, learning until achieving proficiency, private learning, and using supplementary methods were the foundations of individual learning. Thus, Personalized System Instruction (PSI) was suggested [31]. The educational content responding to pregnant women's needs could also be introduced as a supplementary factor. This involves hasty and stereotypical visits as well as discriminatory behaviors, which result in the loss of trust [32, 33]. In the present study, accountability education could be considered as a wheel; in case of lack of responsive multidimensional training, other safe motherhood stages will not move.

The last theme obtained in the current study was the threats and opportunities of distance learning. In this context, the facilitators included time saving and need for identification of high-risk mothers, while the deterrents included illiteracy, inability to use the application, not having access to the internet, and wrong beliefs about using the internet. Electronic consultation and education can be done via electronic media, including internet, intranet, extranet, audiovisual tapes, satellite, TV, and CDs. According to Clark and Mayer, electronic education through digital apparatuses such as computer systems and mobile phones could improve learning [34]. To date, access to health information through the internet has become a primary source. In fact, internet plays a silent role in people's lives and has different features. As an instance, individuals' identities remain unidentified, which results in their higher self-manifestation. In other words, individuals give information about themselves when they are offline, which exerts positive effects on their health status. In fact, individuals' anonymity has changed the internet into a safe environment for helping others. Furthermore, people can get information from a virtual consultant with real conditions without geographical and time restrictions [35]. Mobile technology has also changed communication pathways. Undoubtedly, medical sciences have been greatly influenced by mobile accessibility. Surveys have indicated that healthcare providers considerably make use of this instrument for informing purposes in both clinical and training fields. Application of mobile phones in the field of health has resulted in the use of this instrument in medical software [36]. However, a problem mentioned in this regard was illiteracy and lack of knowledge about using applications, which was in line with the results of other studies. For instance, 46.8% of the suburban women in Mumbai and 43.6% of their husbands were illiterate, while 53.2% of the women and 56.4% of their husbands were literate [37]. However, the trainings are provided at gynecology clinics at limited times and are not usually carried out completely or effectively due to crowdedness and time restrictions. The information can be provided through applications more easily and effectively and remain for a longer time period [38].

### 4.1. Research limitations

This study was national study on the Iranian women of childbearing age, this may provide a basis for comparison but because of the chosen research approach, the research results may lack generalizability.

## 5. Conclusion

The study results revealed information and educational limitations about pregnancy and delivery among suburban pregnant women. Accordingly, these women were less probable to be present in healthcare centers and receive the required information compared to their peers due



to the specific conditions of suburbs, lack of facilities, lack of specialists, time restrictions, and financial problems. Hence, provision of accessible training grounds can help eliminate a considerable part of *these problems*.

## Declarations

### Author contribution statement

Zohreh Mahmoodi, Sara Esmaelzadeh: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Kourosh Kabir, Mohsen Arabi, Zahra Mehdizadeh- Tourzani: Contributed reagents, materials, analysis tools or data; Wrote the paper.

Mansoureh Yazdkhasti, Mahnaz Akbari Kamrani: Performed the experiments; Wrote the paper.

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### Data availability statement

Data included in article/supplementary material/referenced in article.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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