CAUSES OF CESAREAN SECTION FROM PERSPECTIVES OF OBSTETRICIANS AND MIDWIVES: A QUALITATIVE STUDY

Samereh Ghelichkhani[1], Seyedeh Zahra Masoumi[2], Khodayar Oshvandi[3], Farideh Kazemi[4], Mohammad Reza Ebadian[5]

[1-4]Mother and Child Care Research Center, Midwifery Department, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan - Iran.
[5]Besat Hospital, Hamadan University of Medical Sciences, Hamadan - Iran.
Address for correspondence:
Seyedeh Zahra Masoumi
Associate Professor, Mother and Child Care Research Center, Midwifery Department, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadn - Iran.
E-mail: Zahramid2001@gmail.com
Date Received: June 07, 2020
Date Revised: November 11, 2020
Date Accepted: November 20, 2020

ABSTRACT

Objective: To investigate the causes of cesarean section from the perspective of midwives and obstetricians.

Methodology: This qualitative study was carried out using conceptual content analysis method. In this study, participants were selected via purposive sampling method and this process continued until data saturation. Accordingly, 12 midwives and 7 obstetricians were enrolled into the study. A semi-structured individual interview was conducted with each participant. Data analysis was performed by Cheevakumjon method and conceptual content analysis was used to extract the concepts . After reading the text of the data, key sentences and concepts were derived and finally categorized.

Results: Total of three themes, "attitudes of obstetricians and midwives", "social-supportive factors" and "resources" were identified. The identified categories included; attitudes of obstetricians and midwives (negative attitudes toward vaginal birth, positive attitudes towards cesarean section), social-supportive factors (hospitals, community, midwives and obstetricians, negative experiences, authorities' support for the medical team and resources), financial factors, human resource, facilities and equipment, and educational factors.

Conclusion: Normal vaginal delivery conditions can be provided for pregnant women by increasing the access of all pregnant women to free health services, appropriate equipment, availability of midwives and obstetricians and existence of International standards on patient-to-physician ratio.

Key Words: Cesarean section, Vaginal birth, Midwifery, Qualitative study

This article may be cited as: **Ghelichkhani S, Masoumi SZ, Oshvandi K, Kazemi F, Ebadian MR. Causes of cesarean section from perspectives of obstetricians and midwives: a qualitative study. J Postgrad Med Inst 2020; 34(4): 231-42**

INTRODUCTION

Cesarean section is considered to be the most common surgery as well as one of the most common midwifery procedures in the world. Under specific circumstances, this type of surgery can save the lives of many mothers and babies[1]. According to the World Health Organization (WHO), the rate of cesarean section must not exceed 10-15% anywhere in the world. However, in the last 20 years, the rate of cesarean section has been 30% in the world and even up to 35% in most countries[2]. In Iran, according to the results of a survey of population and health indicators in 2018, 35% of deliveries in the country and 42% in urban areas were performed via cesarean section[2]. It is worth noting that, nearly 40% of cesarean deliveries in Iran are performed without any indication, only because of the request of mothers[3].

Studies conducted in developed and developing countries have reported that obstetricians and midwives are more interested in cesarean section, as compared with the population[4]. In Iran, the tendency towards cesarean section has been reported to be between 57% and 62% among obstetricians and between 65% and 77% among midwives[5]. The preferences and tendency of the childbirth attendants play an important role in maternal priorities and mothers request for cesarean section. Physicians are the key people who play a key role in patients' decision to determine the type of childbirth. Physicians are the most important persons for most mothers, hence it seems reasonable to follow their views and recommendations. It highlights the significant role of physicians in women's decision-making regarding vaginal childbirth and caesarean section[6]. The attitudes of physicians and midwives and the degree of psychological support received by women are important because they have a significant impact on delivery in women[7].

According to similar studies, midwives are an important group of health care providers delivering services to pregnant women and in many countries they are regarded as the main agents in labor ward that play an important role in providing information and training to parents; thus, when they have a positive view towards cesarean section, it is not expected to observe a decline in the rate of cesarean. It might be due to the fact that, for many women it is not easy to decide on the type of delivery and their decision may be influenced by many factors. These factors include social factors, family factors, medical advice from a physician or midwife, past experience of childbirth as well as the relative risk and benefits of vaginal delivery against cesarean section in their current pregnancy[8]. It is of great importance to assess midwives' and physicians' attitude towards delivery because they act as the main health care providers for pregnant women. In recent years, despite policies and strategies of government to reduce the rate of cesarean, this goal has not been achieved that might be due to inappropriate performance of service providers[9]. Nowa days, it is known that the type of delivery is one of the most important factors affecting women's health indices. In addition, numerous interventions have been adopted to prepare pregnant women for delivery and promote the culture of natural and safe childbirth. However, the expected decrease in the rate of cesarean section has not been met yet. Since qualitative research has unique capacity to reflect the thoughts, beliefs, and attitudes of people via in-depth examination of experiences, this study aimed to investigate the the causes of cesarean section from the perspective of midwives and obstetricians.

METHODOLOGY

Using conceptual content analysis method, this qualitative study was carried out on midwives and obstetricians from June 2018 to July 2019. The interviews were conducted by a researcher with a master's degree working at Fatemieh Hospital, Hamadan.

In this study, the subjects were selected via purposive sampling method and this process continued until data saturation. The obstetricians and midwives were selected from among those working in Fatemieh Hospital. Inclusion criteria were midwives and obstetricians who had worked in the maternity ward of Fatemieh Hospital in Hamadan, Iran for at least one year and had performed at least 50 deliveries in the form of normal vaginal delivery independently.

The participants were informed about the interview schedule a few days prior to the interview to make themselves prepared for the study. After explaining the objectives of the research and obtaining informed consent from each participant, a semi-structured individual interview was started with a general questions; "What is your perspective towards the type of delivery?" The interviews were conducted in a quiet and convenient place, in a room of the hospital labor and delivery ward in a way to ensure maximum comfort for the participants. The questions were approved by the faculty members of the School of Nursing and Midwifery. Each interview was done face to face and lasted for approximately 30 to 45 minutes. For data reliability, detailed and accurate scene recording and quality audio recording were used to record utterances, and data analysis was performed with the help of colleagues outside the research so that the views of the researchers did not affect data analysis. For the validity of the obtained data, the participants' opinions on the validations, interpretations and results were again received. After each interview session, the recorded voices of the interviews were carefully transcribed after several listenings, using Word 2010 software. All interviews were recorded with the permission of the participants.

Data collection continued until information saturation and finally, 12 midwives with at least a bachelor's degree and 7 obstetricians who had medical education (MD) were enrolled into the study, so that maximum diversity was considered in terms of perspective. Data analysis was performed according to Cheevakumjon method. First, the data were reviewed line by line. The purpose or question of research on the type of delivery selected by pregnant women based on physicians' experiences was then extended to a set of questions that identified specific types of data content. We divided and developed a classification method. After that, the text of the data was read and the key sentences and concepts contained in it were extracted and the final classification was performed. Finally, for more credibility and trust, the results of the analysis were presented to the interviewees and qualitative research experts, their opinions were collected and the final categories review was performed using the opinions of the interviewees. if the selected codes contradicted the understood meanings of the interviews, the appropriate codes were selected in the opinion of the experts by forming a panel of experts to re-check with these individuals.

Data were coded in three levels and semantic units were identified and coded. At this stage, the initial codes were generated as live codes and implicit codes. Then, at the second stage, the units were categorized and finally, at third stage of coding, themes were extracted from the identified categories. The three themes obtained were; attitude of midwives and obstetricians, social-supportive factors and resources.

In this study, there have been biases such as the effect of researchers on accountability, selection bias, access to different sources or types of data for different researchers, researchers' natural inclination towards certain types of people, plans, data, preferences, and

value commitments of researchers. In order to eliminate them, the researcher actively examined and became aware of these biases and tendencies and took steps in the direction of monitoring and controlling them. Also, by reviewing the data and results by the participants, actions were taken to identify and remove them.

Data analysis was performed using MAX.Q DA 10 software. Credibility of data was confirmed via peer and member checking. Peer checking was performed by two reproductive health specialists; they checked the transcribed interviews and the extracted codes and categories and they reached consensus over the mentioned items. In order to perform member checking, the transcribed interviews and extracted codes were presented to two participants to ensure consistency between the findings and the participants' experiences. Sufficient time was also given to collect the data, and the researcher had worked on the subject for a long time.

The Research Ethics Review Board Hamadan University of Medical Sciences, School of nursing and midwifery, approved the study procedures (IR.UMSHA.REC.1397.179). Women volunteered to participate in this study and written consent was obtained from study participants.

RESULTS

After the initial coding, a total of 2203 initial codes were extracted. Then based on the similarities between the initial codes, the main codes were named. At this stage, a total of 201 key codes were obtained. Similar main codes were merged to form 25 subcategories. The process of integration and categorification continued and the main categories and themes were formed. Accordingly, the results of qualitative study were categorified into 11 categories and 3 themes. These themes and categories were mostly derived from the results of the interviews.

Theme: "Attitude of midwives / obstetricians"

This theme consists of two categories: 1) Negative attitudes toward vaginal birth. 2) Positive attitudes toward cesarean section.

1. Category: "Negative attitudes towards vaginal birth"

This category consists of two subcategories, including "fear of the side effects of vaginal birth on neonates" and "fear of the side effects of vaginal birth on mothers".

The sub category of "fear of the side effects of vaginal birth on neonates" was among the items mentioned by the participants. Which was obtained from the results of major interviews (60%) :

Interviewee 6: "Well, many mothers are scared of damages to the fetus during childbirth".

Interviewee 15: "Mothers who are not trained, are still afraid of the compression of neonate's head in the birth canal".

The subcategory of "fear of the side effects of vaginal birth on mothers" was among the items mentioned by many participants. This was obtained from the results of major interviews (70%):

Interviewee 6: "There are many mothers who are scared of ruptures in the genital area".

Interviewee 4: "There are many things, other than pain, that scare mothers, such as postpartum sexual problems, rupture, and bleeding".

2. Category: "Positive attitudes toward cesarean section"

This category consists of two subcategories, including "benefits of cesarean section delivery for neonates" and "benefits of cesarean section delivery for mothers".

The subcategory of "benefits of cesarean section delivery for neonates" was among the items mentioned by the majority of the participants. Which was obtained from the results of major interviews (65%):

Interviewee 9: "We are recently facing mothers who are worried because of their level of awareness; for example, they say that if something goes wrong, it will take time to make me ready for surgery".

Interviewee 12: "Cesarean section is a life-saving treatment in times of danger, and everyone knows it".

The subcategory of "benefits of cesarean section delivery for mothers" was among the items mentioned by most of the participants. This was obtained from the results of major interviews (57%):

Interviewee 1: "They can choose their day of birth".

Interviewee 13: "Some mothers believe that not suffering the pain is an advantage".

Interviewee 15: "They are less stressed; they get referred to hospital comfortably and go back home with a baby, as they say".

Theme: "social-supportive factors"

This theme consists of five categories, namely, hospitals, community, midwives and obstetricians, negative experiences, authorities support for the medical team.

3. Category: "Hospitals"

This category consists of two subcategories, including "lack of interoperability between treatment team" and "lack of respect for pregnant women in hospitals".

The subcategory of "lack of coordination between

treatment team" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (80%):

Interviewee 1: "When obstetricians and a midwife argue with each other in the presence of a patient, it is expected to observe patients' distrust towards the system".

Interviewee 11: "Previously, midwives were in charge of the childbirth and there was an accepted level of agreement between midwives and obstetricians. However, presently they quarrel continuously and each group tries to undermine the other group".

Interviewee 4: "Mother gets confused when she observes contradictions".

The subcategory of "lack of respect for pregnant women in hospitals" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (75%):

Interviewee 10: "Well, they hear something in the delivery preparation classes, however, they observe something else when they attend the delivery ward".

Interviewee 13: "Pregnant women do not have a clear picture of the labor rooms. When they attend the rooms, they observe a number of women set close to each other, all of whom are crying and shouting. It is not good at all".

4. Category: "community"

This category consists of two subcategories, "improper process of informing mothers" and "impact of social institutions".

The subcategory of "improper process of informing mothers" was among the items mentioned by many participants. This was obtained from the results of major interviews (77%):

Interviewee 9: "We do not work on mothers' way of thinking, our advices are not accurate, and the information we provide does not address their stress".

Interviewee 8: "Mothers have a number of stereotypes about childbirth and hospitals that they have acquired from people around. It is necessary to change them during the time of delivering pregnancy care services".

The subcategory of "impact of social institutions in hospitals" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (68%):

Interviewee 9: "The education and training system do not even allow to provide training on puberty in high schools, though this type of training is needed".

Interviewee 7: "Why do they only remember vaginal birth once in a year? There are always advertisements about junk food all over the country, even in the most remote villages. Do women know the benefits of natural births? The media is not helping".

5. Category: "Midwives and obstetricians"

This category consists of three subcategories, including "inadequate coverage of companion midwife services", "poor quality of trainings during pregnancy", and "inadequate relationship of obstetricians with pregnant women".

The subcategory of "inadequate coverage of companion midwife services" was among the items mentioned by majority of the participants. This was obtained from the results of major interviews (85%):

Interviewee 6: "Companion midwife has been introduced to help manage stress and pain; I agree with this program. However, they have a low level of motivation".

Interviewee 2: "Some obstetricians deteriorate the position of companion midwife at the presence of patients, though pregnant women are really happy with their services because companion midwives are effective in reducing women's pain. Hence, the authorities must modify obstetricians view toward midwives".

The subcategory of "poor quality of trainings during pregnancy" was among the items mentioned by many participants:

Interviewee 7: "Mother must trust herself and her abilities. These classes must enhance maternal self-management".

Interviewee 5: "Well, these classes certainly helped in some cases, but it is necessary to determine the percentage of increase in vaginal birth".

The subcategory of "inadequate relationship of obstetricians with pregnant women" was among the items mentioned by many participants. This was obtained from the results of major interviews (59%):

Interviewee 14: "A woman may hardly try to make an appointment with a physician to discuss her sexual problems, fear of childbirth, and everything else. However, when she visits physician's office, she has to express her problems in the presence of three other women and she may even fail to talk about her problem. As a physician, am I allowed to ignore people's right and conduct group visits?"

Interviewee 6: "If physicians help midwives to change the attitudes, it is possible to increase the number of natural births".

6. Category: "Negative experiences"

This category consists of two subcategories, including "previous experiences and views of those around the pregnant women" and "failure of family members to support vaginal childbirth".

The subcategory of "previous experiences and views of those around the pregnant women" was among the items mentioned by many participants. This was obtained from the results of major interviews (88%):

Interviewee 7: "A husband stopped her wife from vaginal childbirth, just because her sister has had a miscarriage".

Interviewee 3: "Many mothers are affected by people around, in a way that we cannot affect them".

The subcategory of "failure of family members to support vaginal childbirth" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (60%):

Interviewee 19: "A mother who has had a miscarriage herself cannot allow her daughter to have a vaginal birth".

Interviewee 13: "They prefer their husbands to attend training classes. This type of programs must be enhanced".

7. Category: "Supporting authorities of the medical team"

This category consists of three subcategories, including "lack of legal support for obstetricians and midwives", "unclear professional status of obstetricians and midwives", and "neglecting the position of midwives".

The subcategory of "lack of legal support for obstetricians and midwives" was among the items mentioned by many participants. This was obtained from the results of major interviews (74%):

Interviewee 18: "Both vaginal birth and cesarean section have side effects; do our systems know this? Do they help when a woman faces a problem? No. We don't even have obstetricians in related judicial courts".

Interviewee 19: "If there is a problem, the insurance and legal system do not support specialists. Hence, I would prefer to discharge the patient earlier".

The subcategory of "unclear professional status of obstetricians and midwives" was among the items mentioned by many participants. This was obtained from the results of major interviews (55%):

Interviewee 6: "Midwives' job description has become less clear, and this has damaged their self-esteem".

Interviewee 18: "It is very awful that midwives are not allowed to carry out private and vaginal childbirths. It is very bad for patients when people interfere in each other's tasks".

The subcategory of "neglecting the position of midwives" was among the items mentioned by many participants. This was obtained from the results of major interviews (69%):

Interviewee 21: "They say there is not enough staff, but they force midwives to work in the pharmacy or in the second shifts, where they are only in charge of nursing".

Interviewee 17: "None of the hospital's top executives are midwives and so they are not supporting us. Our problems are not understood and under such a situation we have to work without enough staff and with many problems".

Theme: "Resources"

This theme consists of five categories; financial factors, human resource, facilities and equipment and educational factors.

8. Category: "Financial factors"

This category consists of two subcategories, including "family income" and "inadequate budget of hospitals".

The subcategory of "family income" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (85%):

Interviewee 1: "Most high-income families are interested in cesarean section".

Interviewee 15: "I saw myself that they gave a lot of money to a physician to prove an indication".

The subcategory of "Inadequate budget of hospitals" was among the items mentioned by the majority of the participants:

Interviewee 9: "The hospitals that are located in suburbs have budget problems for beautification, for delivery equipment".

Interviewee 13: "Distribution of equipment in hospitals is not the same in terms of budget. Many places are not optimized and private spaces are not constructed".

9. Category: "Human resources"

This category consists of two subcategories, including "inadequate number of midwives" and "inadequate number of obstetricians".

The subcategory of "inadequate number of midwives" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (88%):

Interviewee 6: "We do not have officially recruited midwifery staff in the shifts. The number of staff is very limited. We do not have enough time to spend for each pregnant women".

Interviewee 9: "We all are familiar with standard procedures, but the recruitment of midwifery staff is very limited".

The subcategory of "inadequate number of obstetricians" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (65%):

Interviewee 12: "There are no obstetricians in districts. When a patient presents with a minor problem, she is referred to large cities. Hence, from the earliest stages, they all prefer to have caesarean section, rather than facing these problems".

Interviewee 16: "The number of obstetricians at the hospitals is very small and limited. Sometimes they are much tired and busy, and do not have enough time to spend for mothers and carry out vaginal childbirth".

10. Category: "Facilities and equipment"

This category consists of two subcategories, including "inappropriate distribution of equipment required for physiological delivery in hospitals" and "lack of LDR space in third level hospitals".

The subcategory of "inappropriate distribution of equipment required for physiological delivery in hospitals" was among the items mentioned by the majority of the participants as obtained from the results of major interviews (73%):

Interviewee 11: "Equipment in the province is not integrated. Patients gather in a referral center and consequently there is a shortage of equipment and facility for a safe delivery".

Interviewee 13: "In small districts, most patients are referred to large cities; hence there is a need for specialized care facilities and equipment".

The subcategory of "lack of LDR space in third level hospitals" was among the items mentioned by the majority of the participants as obtained from the results of major interviews (96%):

Interviewee 17: "Why there is no LDR in a hospital like Fatima Hospital in Hamedan with 900 monthly deliveries?"

Interviewee 9: "Labor rooms are not private and proper. When pregnant women are hospitalized in a shared room, observe the pains and problems, their attitude towards vaginal childbirth changes and their fear increases".

11. Category "Educational factors"

This category consists of three subcategories, including "insufficient knowledge of the gynecology residents and midwives", "lack of professional skills in medical staff (obstetricians and midwives)", and "lack of proper implementation of standard protocols".

The subcategory of "insufficient knowledge of the gynecology residents and midwives" was among the items mentioned by the majority of the participants. This was obtained from the results of major interviews (60%):

Interviewee 5: "Gynecology residents and midwifery students who attend the ward do not have a proper attitude towards delivery, are not properly trained, and do not have a clear priority".

Interviewee 13: "It is necessary to further strengthen the practical skills of residents and midwives".

The subcategory of "lack of professional skills in medical staff (obstetricians and midwives)" was among the items mentioned by the majority of the participants , obtained from the results of major interviews (75%):

Interviewee 10: "Unfortunately, our expectations of a midwife or resident are not met. We try to reduce episiotomy but most mothers are scared. Which residency students can manage a childbirth without episiotomy?"

Interviewee 5: "They do not know how to manage difficult deliveries".

The subcategory of "lack of proper implementation of standard protocols" was among the items mentioned by the majority of the participants, obtained from the results of major interviews (60%):

Interviewee 8: "Familiarity with standards such as induction and episiotomy is very important in the labor room, and it must be more highlighted".

Interviewee 11: "In order to improve our labor rooms, we need to make protocols carefully and make the staff committed to perform them fully".

DISCUSSION

In this study, the experiences and views of obstetricians and midwives regarding the causes of cesarean section were categorized into three themes of midwives and obstetricians attitudes, social-supportive factors, and resources. In the interviews, the participants' perspective under the theme of attitude were classified into two categories, including negative attitudes toward vaginal birth and positive attitudes toward cesarean section. According to the results of the present study, obstetricians and midwives had a negative view of normal vaginal delivery due to fear of some side effects of natural childbirth in newborns and their mothers.

Table 1: Demographics of participants

Participant	Age	Level of education	Employment status	Type of hospital
1	50	Obstetricians	Employed	Governmental - Private
2	50	Obstetricians	Employed	Governmental - Private
3	40	Obstetricians	Employed	Governmental - Private
4	45	Obstetricians	Employed	Governmental - Private
5	38	Obstetricians	Employed	Governmental - Private
6	45	Obstetricians	Employed	Governmental - Private
7	43	Obstetricians	Employed	Governmental - Private
8	48	Midwife	Employed	Governmental
9	49	Midwife	Retired	-
10	38	Midwife	Employed	Governmental
11	36	Midwife	Employed	Governmental
12	38	Midwife	Employed	Governmental
13	34	Midwife	Employed	Governmental
14	38	Midwife	Employed	Governmental
15	49	Midwife	Employed	Governmental
16	48	Midwife	Employed	Governmental
17	44	Midwife	Employed	Governmental
18	42	Midwife	Employed	Governmental
19	40	Midwife	Employed	Governmental

Based on the results of other studies, the incidence of suffocation during childbirth, need for resuscitation, sepsis, childbirth injuries, and the need for hospitalization in intensive care unit are more common in vaginal delivery[10]. Hunkins et al. showed that brachial plexus injury was significantly more common in vaginal delivery than in cesarean section[11]. According to Filizet et al., vaginal delivery is responsible for pelvic floor muscle weakness and higher frequency of sexual dysfunction[12]. In addition, other risk factors such as episiotomy, epidural analgesia, labor induction, and advanced maternal age are also associated with obstetric anal sphincter injuries[13]. The interviewees reported the positive benefits of cesarean section for neonates and mothers, such as better and quicker management of high-risk conditions, experiencing a painless childbirth at a specified time and date, the role of cesarean section as a life-saving treatment in high-risk situations, and faster process of termination of labor for mothers. Other similar studies have shown that in case of the presence of maternal or fetal complications, cesarean section can reduce maternal and perinatal morbidity and mortality[14].

Under the theme of social-supportive factors, the participants reported the following categories as the factors leading to increased tendency towards cesarean section; factors associated with hospitals, community, midwives and obstetricians, negative experiences, and authorities support for the medical team. Concerning the category of "lack of interoperability between treatment team", other studies have shown that a good level of cooperation between maternity care providers is necessary to respond to women's preferences and affect their choice of maternity and midwifery care services and help to meet the needs of women and their families. The findings of previous studies have shown that in some settings, maternity care professionals tend to marginalize midwives via creating hierarchical relationships with them, and this type of behavior creates a conflict and makes a barrier to the implementation of their professional responsibilities. The professional collaboration and interoperability between midwives and other maternity care specialists such as obstetricians has proven to be crucial in meeting the needs of women and respecting their choices[15]. On the other category listed under this theme, the participants said that respecting pregnant women, which means ensuring privacy during childbirth and hospitalization, is the first step in improving pregnant women's satisfaction with childbirth and has a significant impact on mental health, comfort, satisfaction, and well-being[16]. This is consistent with the results of other studies reporting that during the delivery, the processes related to emotional and mental health of mothers have a greater impact on maternal satisfaction than the material aspects of care[17].

In the themes obtained in this study, the majority of interviewees reported the role of midwives in the

Table 2: . Subcategories, categories, and themes

Theme	Main categories	Subcategories
Attitude of midwives / obstetricians	Negative attitudes toward vaginal birth	Fear of the side effects of vaginal birth on neonates
		Fear of the side effects of vaginal birth on mothers
	Positive attitudes toward cesarean section	Benefits of cesarean section delivery for neonates
		Benefits of cesarean section delivery for mothers
Social-supportive factors	hospitals	Lack of interoperability between treatment team
		Lack of respect for pregnant women in hospitals
	Community	Improper process of informing mothers
		Impact of social institutions
	Midwives and obstetricians	Inadequate coverage of companion midwife services
		Poor quality of trainings during pregnancy
		Inadequate relationship of obstetricians with pregnant women
	Negative experiences	Previous experiences and views of those around the pregnant women
		Failure of family members to support vaginal childbirth
	Authorities support for the medical team	Lack of legal support for obstetricians and midwives
		Unclear professional status of obstetricians and midwives
		Neglecting the position of midwives
Resources	Financial factors	Family income
		Inadequate budget of hospitals
	Human resource	Inadequate number of midwives
		Inadequate number of obstetricians
	Facilities and equipment	Inappropriate distribution of equipment required for physiological delivery in hospitals
		Lack of LDR space in third level hospitals
	Educational factors	Insufficient knowledge of the gynecology residents and midwives
		Lack of professional skills in medical staff (obstetricians and midwives)
		Lack of proper implementation of standard protocols

coverage of midwifery services as an effective cause of cesarean section. Bohrenet al.'s study concluded that having a companion during labor improved maternal and neonatal outcomes. The presence of a companion during labor is considered as an important aspect in improving the quality of care during labor. In a similar study, the researchers showed that women who are under continuous support during labor are more likely to have spontaneous vaginal births and shorter deliveries; in addition, they are less likely to have negative birth experiences, require labor analgesics, requires epidural analgesia, undergo instrumental vaginal deliveries, undergo cesarean section, and have first-minute Apgar scores lower than five[18].

However, there are also different attitudes among physicians, midwives, and other service providers about supporting doula with a maternal team approach[19]. The attitudes of maternal team members towards doula are different. According to Klein et al., having more knowledge, awareness, and education is effective in creating a positive interoperability attitude among the delivery team members participating in doula program[20].

According to the results of other part of the interviews, most of the obstetricians and midwives reported the quality of prenatal training as a factor affecting the tendency of women towards cesarean section. Gupta et al. conducted a study on length of labor and concluded

that preparations during pregnancy reduced the length of various stages of childbirth[20]. Preparatory classes and psychological support for mothers, in general, reduced the rate of cesarean section to one-fourth[21].

The people participating in the study highlighted the impact of negative experiences and the perspectives of those around as factors that strongly influence the choice of cesarean delivery. Family members, friends, celebrities, popular culture, and the Internet may influence women's personal preferences over the type of delivery[22]. In this study, the participants reported the inadequate relationship between obstetricians and pregnant women as an important cause of increased cesarean delivery.

As stated by the participants, authorities' support for the medical team has an important effect on their attitudes. Accordingly, not accepting errors as a common phenomenon in medical processes in the community, lack of support from the medical system in the face of legal issues, obstetricians concerns during prolonged deliveries, and patients complaints are among the factors promoting the tendency toward cesarean section.

Legal action against obstetricians and midwives often leads to considerable concern and this group of specialists pays the highest rate of penalties[19]. Research in Iran has shown that largest number of complaints from 2005 to 2009 in Isfahan were about the services provided by general practitioners, anesthesiologists, obstetricians, midwives, general surgeons, orthopedists and nurses[23]. According to the results of a similar qualitative study, punishment laws and legal complaints faced by health care providers, including obstetricians, are a common issue in most parts of the world, but it should not be used as an excuse for making an easier choice for the physician and adopting a more dangerous method for mothers. However, cesarean section, as a choice, even without medical and midwifery indication, is among the methods of pregnancy termination[24]. Respecting the independent and free character of patients and their privacy is a principle in the field of medical ethics. Therefore, as a fundamental right, a pregnant woman can select her own favorite method of childbirth[25].

The results of the interview also showed that some of the participants believed that unclear professional status of obstetricians and midwives were among factors leading to cesarean section. The findings of other studies also indicated that professional challenges between midwives and obstetricians regarding professional factors, autonomy, professional territory, and work style are prevalent in most countries[15]. Midwives are dissatisfied with the hierarchical structure in which physicians are at the top, because physician's performance in the hierarchy undermines teamwork and motivations. On the other hand, studies have shown that proper cooperation between physicians and other health care providers in other countries has resulted in good outcomes both for patients and the health system[26].

In another part of the study, the interviewees reported the financial, human, equipment, and educational resources as important factors affecting the choice of cesarean delivery; the participants believed that possessing a source of income was associated with cesarean section. However, recent studies in the United States and other European countries have reported a negative relationship between economic conditions and cesarean section. The change in the impact of economic conditions on cesarean section has been clearly observed in Korea over the past decades. Studies have shown that now in Korea, cesarean section is mostly performed in areas with less prosperous economic conditions[27]. According to a similar study, reducing the number of delivery professionals at the time of delivery makes it more difficult for women to make a good decision, and this ultimately leads to choosing bad options, though their choice can be managed through proper planning. Lower access to maternity and gynecological facilities, especially in rural areas, can promote cesarean delivery which is due to the reduction in prenatal care opportunities. The positive correlation between deprivation index score and cesarean section indicates that mothers in deprived areas are more likely to undergo cesarean delivery[28].

In the past, higher levels of education and income were more strongly associated with cesarean delivery[29], and this is still observed in less developed countries[30]. However, recent studies in the United States and other European countries have reported a negative relationship between economic conditions and cesarean section. The change in the impact of economic conditions on cesarean section has been clearly observed in Korea over the past decades. Studies have shown that now in Korea, cesarean section is mostly performed in areas with less prosperous economic conditions[27].

The people participating in the study strongly believed that failure in the system of training obstetricians and midwives is one of the factors contributing to the lack of reduction in the rate of cesarean section. The participants said that the presence of non-skilled students in midwifery , lack of clinical training for midwives and obstetricians, insufficient skills of delivery professional in managing high-risk deliveries, incorrect induction, early hospitalization for cesarean delivery, and the utilization of residents and under-training staff were among the factors increasing the number of cesarean deliveries.

According to researchers, lack of competence, skills, and motivation, as well as the weaknesses of team mem-

bers are observed in both midwives and physicians. In the current educational system, people are not properly trained for conducting their roles and responsibilities; in addition, women and their perceptions of professional boundaries are not enhanced by their teamwork and quality of work[31].

CONCLUSION

Normal vaginal delivery conditions can be provided for pregnant women by increasing the access of all pregnant women to free health services, appropriate equipment, availability of midwives and obstetricians and existence of International standards on patient-to-physician ratio. Also, improving pregnancy education for mothers and their families, reducing inter-professional stress, using protocols and instructions of the Ministry of Health, strengthening the relationship between mothers and the medical team during pregnancy, strengthening the Doula midwifery program, improving legal protections for midwives and doctors and strengthening the clinical training of the treatment team is also appropriate to reduce cesarean section.

ACKNOWLEDGEMENT

This paper is the result of a research project conducted in Hamadan University of Medical Sciences, The researchers would like to express their thanks to the Research Deputy of the University for Financial Support and the participants for expressing their valuable experiences.

REFERENCES

1. Adedokun ST, Uthman OA. Women who have not utilized health Service for Delivery in Nigeria: who are they and where do they live? BMC Pregnancy Childhood 2019; 19:1-14. https://doi.org/10.1186/s12884-019-2242-6.
2. Heidari Z, Kohan S. The Comparison of Knowledge and Attitude of Midwifery and Nursing Students towards Natural Childbirth and Cesarean Section. J Midwif Reprod Health 2015; 3:437-43.
3. Tavassoli A, Dizaji AZ, Kelari F. Social Factors affecting to Elective Cesarean In Iran. Bioethics Health Law J 2017; 1: 41-6.
4. Copelli FHdS, Rocha L, Zampieri MdFM, Gregório VRP, Custódio ZAdO. Determinants of women's preference for cesarean section. Text Context Nursing 2015; 24:336-43.
5. Sadeghzadeh N, Amiri-Farahani L, Haghani S, Hasanpoor-Azghady SB. Iranian midwives' attitudes and beliefs toward physiological childbirth: a cross-sectional study. BMC Pregnancy Childhood 2019; 19: 352.
6. Bagheri A, Alavi NM, Abbaszadeh F. Iranian obstetricians' views about the factors that influence pregnant women's choice of delivery method: A qualitative study. Women Birth 2013; 26: e45-9.
7. Downe S, Finlayson K, Oladapo OT, Bonet M, Gülmezoglu AM. What matters to women during childbirth: a systematic qualitative review. PloS one 2018; 13:e0197791. Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0194906
8. Kaphle S, Hancock H, Newman LA. Childbirth traditions and cultural perceptions of safety in Nepal: critical spaces to ensure the survival of mothers and newborns in remote mountain villages. Midwifery 2013; 29:1173-81.
9. Siabani S, Jamshidi K, Mohammadi MM. Attitude of pregnant women towards Normal delivery and factors driving use of caesarian section in Iran (2016). BioPsychoSocial med 2019; 13:8.
10. Prado DS, Mendes RB, Gurgel RQ, Barreto IDdC, Cipolotti R, Gurgel RQ. The influence of mode of delivery on neonatal and maternal short and long-term outcomes. Rev Saude Publica 2018; 52:95.
11. Louden E, Marcotte M, Mehlman C, Lippert W, Huang B, Paulson A. Risk factors for brachial plexus birth injury. Children 2018; 5:46.
12. Woodley SJ, Boyle R, Cody JD, Mørkved S, Hay-Smith EJC. Pelvic floor muscle training for prevention and treatment of urinary and faecal incontinence in antenatal and postnatal women. Cochrane Database Syst Rev 2017; 12:CD007471.
13. Ozdemir FC, Pehlivan E, Melekoglu R. Pelvic floor muscle strength of women consulting at the gynecology outpatient clinics and its correlation with sexual dysfunction: A cross-sectional study. Pak J Med Sci 2017; 33:854-9.
14. Marschalek ML, Worda C, Kuessel L, Koelbl H, Oberaigner W, Leitner H et al. Risk and protective factors for obstetric anal sphincter injuries: A retrospective nationwide study. Birth 2018; 45:409-15.
15. Shakeri M, Mazloumzade S, Mohamaian F. Factors affecting the rate of cesarean section in Zanjan maternity hospitals in 2008. J Adv Med Biomed Res 2012; 20:98-104.
16. Keag OE, Norman JE, Stock SJ. Long-term risks and benefits associated with cesarean delivery for mother, baby, and subsequent pregnancies: Systematic review and meta-analysis. PLoS Med 2018; 15:e1002494.
17. Behruzi R, Klam S, Dehertog M, Jimenez V, Hatem M. 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 Childhood 2017; 17:200.
18. Smith V. Midwife-led continuity models versus other models of care for childbearing women. Pract Midwife 2013; 16:39-40.
19. Jha P, Larsson M, Christensson K, Svanberg AS. Satisfac-

tion with childbirth services provided in public health facilities: results from a cross-sectional survey among postnatal women in Chhattisgarh, India. Glob Health Action 2017; 10:1386932.

20. Ferrer MBC, Jordana MC, Meseguer CB, García CC, Roche MEM. Comparative study analysing women's childbirth satisfaction and obstetric outcomes across two different models of maternity care. BMJ Open 2016; 6:e011362.
21. Okumu C, Oyugi B. Clients' satisfaction with quality of childbirth services: a comparative study between public and private facilities in Limuru Sub-County, Kiambu, Kenya. PloS one. 2018 14;13:e0193593.
22. Sanders RA, Crozier K. How do informal information sources influence women's decision-making for birth? A meta-synthesis of qualitative studies. BMC Pregnancy Childhood 2018; 18:21.
23. Bohren MA, Berger BO, Munthe-Kaas H, Tunçalp Ö. Perceptions and experiences of labour companionship: a qualitative evidence synthesis. Cochrane Database Syst Rev 2019; 3:CD012449.
24. Families NPW. Continuous support for women during childbirth: 2017 cochrane review update key takeaways. J Perinat Educ 2018; 27:193-7.
25. Azimi K, Poorbakhtiar M, Taghizadeh Z, Soltani K, Ghadipasha M, Daneshparvar H. A Survey on various types of medical malpractice in relation with pregnancy and delivery, referred to relevant commissions of the Iranian Legal Medicine Organization. Iran J Forensic Med 2017; 23:132-41.
26. Vedam S, Stoll K, Schummers L, Fairbrother N, Klein MC, Thordarson D et al. The Canadian birth place study: examining maternity care provider attitudes and interprofessional conflict around planned home birth. BMC Pregnancy Childbirth 2014; 14:353.
27. World Health Organization. WHO recommendations non-clinical interventions to reduce unnecessary caesarean sections. WHO; 2018. Available at: https://www.who.int/reproductivehealth/publications/non-clinical-interventions-to-reduce-cs/en/
28. Rabiepoor S, Alipoor P, Mesgarzadeh M, Shirzadeh E. The effect of childbirth preparation training classes on attitude of women towards the delivery method. J Urmia Nurs Midwifery 2017; 15:567-74.
29. Rafiei M, Ghare MS, Akbari M, Kiani F, Sayehmiri F, Sayehmiri K et al. Prevalence, causes, and complications of cesarean delivery in Iran: A systematic review and meta-analysis. Int J Reprod BioMed 2018; 16:221-34.
30. Nolte A, Marshall J, Raynor M. Myles Textbook for Midwives 3E African Edition E-Book: 3rd Ed. Myles Textbook for Midwives. Elsevier Health Sciences; 2016. Available at: https://www.elsevier.com/books/myles-textbook-for-midwives-3e-african-edition-e-book/nolte/978-0-7020-6625-2.
31. Hossein BM, Mehrdad S, Mandana N, Mahbube N, Ali A. The frequency and reasons of medical errors in cases referred to Isfahan Legal Medicine Center. Dir Gen 2012; 9:101-9.
32. Johnson AL, Jung L, Song Y, Brown KC, Weaver MT, Richards KC. Sleep deprivation and error in nurses who work the night shift. J Nurs Admin 2014; 44:17-22.
33. Elnakib S, Abdel-Tawab N, Orbay D, Hassanein N. Medical and non-medical reasons for cesarean section delivery in Egypt: a hospital-based retrospective study. BMC Pregnancy Childhood 2019; 19:1-11.
34. Zakerihamidi M, Roudsari RL, Khoei EM. Vaginal delivery vs. cesarean section: A focused ethnographic study of women's perceptions in The North of Iran. Int J Community Based Nurs Midwifery 2015; 3:39-50.
35. Mirmolaei ST, Lamyian M, Simbar M, Vedadhir A, Gholipour A. Teamwork barriers and facilitators in the maternity wards: A qualitative study. J Hayat 2016; 21:1-29.
36. Patterson D. Interdisciplinary team communication among forensic nurses and rape victim advocates. Soc Work Health Care 2014; 53:382-97.
37. Kornelsen J. Solving the maternity care crisis: making way for midwifery's contribution. Br Columbia Cent Exce Women's Health; 2003. Available at: https://bccewh.bc.ca/wp-content/uploads/2012/05/2003_Solving-the-Maternity-Care-Crisis-Policy-Brief.pdf
38. Watkins V, Nagle C, Kent B, Hutchinson AM. Labouring Together: collaborative alliances in maternity care in Victoria, Australia—protocol of a mixed-methods study. Br Med J Open 2017; 7: e014262.
39. Nancarrow SA, Booth A, Ariss S, Smith T, Enderby P, Roots A. Ten principles of good interdisciplinary team work. Human Resour Health 2013; 11:19.
40. Khalili A, Shayan A, Khodaveisi M, Masoumi SZ, Soltani F, Havasian MR et al. Construction of professional ethics questionnaire in midwifery. Indian J Forensic Med Toxicol 2017; 11:237-40.
41. Kim AM, Park JH, Kang S, Yoon TH, Kim Y. An ecological study of geographic variation and factors associated with cesarean section rates in South Korea. BMC Pregnancy Childbirth 2019; 19:162.
42. Omani-Samani R, Mohammadi M, Almasi-Hashiani A and Maroufizadeh S. Cesarean section and socioeconomic status in Tehran, Iran. J Res Health Sci 2017; 17:394.
43. Ahmadi S, Kazemi F, Masoumi SZ, Parsa P, Roshanaei G. Intervention based on BASNEF model increases exclusive breastfeeding in preterm infants in Iran: a randomized controlled trial. Int Breastfeed J 2016; 11:30.
44. Milcent C, Zbiri S. Prenatal care and socioeconomic sta-

tus: effect on cesarean delivery. Health Economics Rev 2018; 8:7.

45. Fairhall N, Sherrington C, Kurrle SE, Lord SR, Lockwood K, Howard K et al. Economic evaluation of a multifactorial, interdisciplinary intervention versus usual care to reduce frailty in frail older people. J Am Med Dir Assoc 2015; 16:41-8.

CONTRIBUTORS

SG conceived the idea, wrote initial manuscript, made plan for the project, collected data and finalized the draft. SZM and KO helped in correction of the proposal, literature search, data collection, interpretation and supervision of the project. FK and MRE provided technical support, helped in data interpretation and provided guidance where needed. All authors contributed significantly to the submitted manuscript.