

# Comparison of anesthesia professionals' preferences of delivery method with other health professionals

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## Abstract

**Objective:** Work areas and clinical practices have an effect on cesarean rates, which are also high in health professionals. Anesthesia professionals and the health professionals who are far from surgical practices may have different views on delivery methods. In this study, it was aimed to investigate which delivery method between vaginal delivery and cesarean delivery was selected by the anesthesia professionals and the health professionals outside the operating room, and why they selected it.

**Material and methods:** 137 anesthesia professionals and 151 health professionals who had never worked in the operating room were included in this study. The participants' ages, professions and methods of delivery and reasons were questioned by the survey method.

**Results:** While 58.3% of all the participants preferred the cesarean delivery method at their first birth, 41.7% preferred vaginal delivery. The preference rates of anesthesia professionals for cesarean delivery (69.9%) were found higher than those of the professionals working outside the operating room (46.6%), ( $p < 0.05$ ). As the reason of preference for cesarean delivery, the option of "not putting the baby at risk" is higher among anesthesia professionals than the professionals outside the operating room ( $p < 0.05$ ). As the reason of vaginal delivery, "more physiological", "fear of anesthesia and surgery", "early recovery and desire to breastfeed baby" higher compared to anesthesia professionals ( $p < 0.05$ ).

**Conclusion:** Knowing, practicing and seeing the anesthesia and surgical procedures every day have given the idea that these practices are simple, comfortable and have low risks, so the cesarean delivery rate has increased in anesthesia professionals.

**Key words:** delivery method, cesarean, vaginal delivery, anesthesia professional

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## Introduction

The delivery process can cause women to face many risks during pregnancy and delivery and after delivery. Both cesarean and vaginal deliveries carry unique risks for both the mother and the baby [1,2]. Thus, decision on the type of delivery is one of the most important issues in the delivery process.

A decision should be made on the method of delivery by evaluating the condition of the mother and the baby in detail. Normal vaginal delivery can be selected, or in case of indications, surgical cesarean delivery methods can be carried out. Although absolute and relative indications have been defined for primary cesarean delivery, there have always been disputes on this issue in the literature [3]. While

the cesarean delivery is inevitable in absolute indications, the preference of the physician and especially the expectant mother has an effect on determining the delivery method in relative indications. In recent years, the increase in the demand for cesarean delivery other than medical indications is a non-ignorable fact [4,5]. When determining the method of delivery, women generally have difficulty in making decisions. Both delivery methods have advantages and disadvantages. The information and support which will be given to women in this challenging process can naturally help them make healthier and more accurate decisions. Especially in the third stage of pregnancy, expectant mothers should be adequately informed about vaginal delivery and cesarean delivery [6].

Those who have worked in the operating room for a long time can consider the surgical interventions they see every day, especially the cesarean section, as practices which are ordinary, simple and routine, and can select the method of delivery in this direction. However, on the contrary, they may avoid cesarean procedures as much as possible due to some reasons such as fatal surgical complications. Hence, the delivery method preferences of health professionals may be affected from where they work in the hospital. The number of the studies conducted on the subject is quite insufficient. When the literature was reviewed, no comprehensive studies investigating the reliability, risks, complications of the anesthesia and surgical interventions, and whether the comfort provided by the procedures and environments inside or outside the operating room or negative conditions affected the decision on the cesarean delivery were encountered.

The aim of this study is to compare the delivery method preferences of female anesthesia professionals working in the operating room with the female health professionals working outside the operating room together with the reasons.

### Material and methods

This study was carried out on female health professionals aged between 20 and 50, who were working in all the hospitals of Trabzon Province, in a multi-centered way after the local ethics committee approval and the written acceptance consents of the female health professionals were obtained. In the hospitals determined, 137 female anesthesia professionals (Group A), who had worked at least one year in the operating room, and 151 female health professionals (Group B), who had worked in internal branch services outside the operating room, were included in the study. Those above the age of 50, those with a disease that may affect the method of delivery, those who work both in the operating room and in the designated internal services, those with multiple pregnancies in their first deliveries, those who had problems with the fetus, umbilical cord or placenta and those with prolonged labor were not included in the study.

A questionnaire form consisting of three sections was prepared for the study, and this study was carried out via the face-to-face interview technique. The first section of the questionnaire includes questions about the participants' ages, work areas (inside or outside the operating room), and professions (doctor, nurse, other paramedic person).

In the second section of the questionnaire, the presence of specific conditions (multiple pregnancy, problems with fetus, umbilical cord or placenta, prolonged labor and presence of serious comorbidity that may affect the delivery method), which did not give an opportunity to select a delivery method, were questioned, and the presence of any of these conditions led to the exclusion of the participant from the scope of the study.

In the third section of the questionnaire, there are questions for identifying the information related to the delivery method preference, and more than one answer can be given to these questions.

As the reason for preference of normal vaginal delivery, the following options were presented:

- Fear of anesthesia
- Fear of surgery
- The desire to recover earlier
- The desire to breastfeed the baby earlier
- Less bleeding
- Lower risk of infection
- Being a more physiological method

As the reason for preference of cesarean delivery, the

following options were presented:

- Not to go through delivery pain
- To protect the baby from the risks that may occur with vaginal delivery
- Fear of episiotomy
- General fear of vaginal delivery
- Fear of urine or stool incontinence
- Fear of rectal prolapse
- Instinct to protect sexual life

With the questions in the third section of the questionnaire, it was questioned which one of the normal vaginal delivery and cesarean delivery methods the participants preferred in their first delivery, and why they selected it.

The data were analyzed on Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) Version 23.0, using number and percentage values, and Chi-square, Fisher's exact and Student's t tests. The data were evaluated in the 95% confidence interval with  $p<0.05$  significance level.

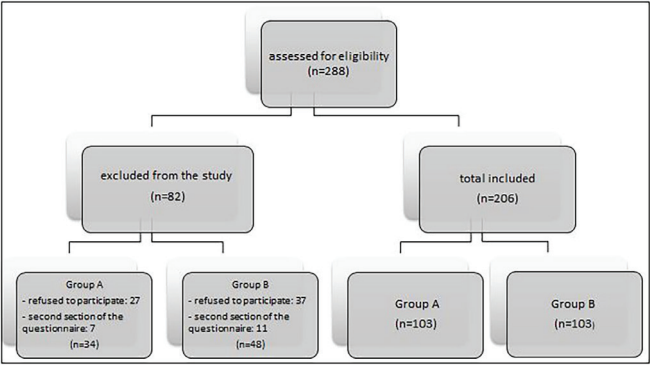
### Ethical principles

This study was performed with the approval of the NonInterventional Clinical Research Ethical Committee of the University of Karadeniz Technical University (reference number: 2015/140).

### Results

A total of 34 anesthesia professionals in the operating room were excluded from the study due to the answers of 7 individuals for the questions in the second section of the questionnaire and the rejection of 27 individuals to participate in the study. A total of 48 professionals working outside the operating room were excluded from the study due to the answers of 11 individuals for the questions in the second section of the questionnaire and the rejection of 37 individuals to participate in the survey. This study was carried out with a total of 206 participants as 103 individuals in both groups (Figure 1).

**Figure 1** -Diagram of participant progress through study



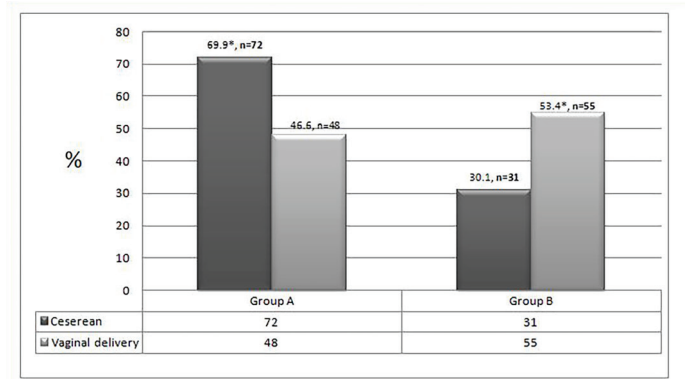
Considering the distribution of the participants by age, 42 were between the ages of 20-29, 127 were between the ages of 30-39, and 37 were between the ages of 40-50. Of the 206 participants included in the study, 73 were paramedic person, 72 were doctors and the remaining 61 were nurses. No significant difference could be found between the participants' ages, work areas and professions (Table 1).

**Table 1** Profession of participant according to working area

	Group A	Group B	Total n (%)
Medical doctor (n)	35	37	72 (35%)
Nurse (n)	33	28	61 (29.6%)
Paramedic person (n)	38	35	73 (35.4 %)

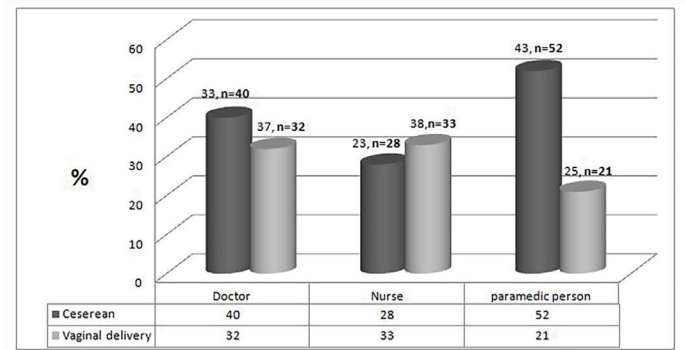
While 120 of all the participants included in the study preferred the cesarean delivery method at their first birth, the remaining 86 preferred normal delivery. When a comparison was made according to the type of delivery, it was observed that 72 of those who preferred cesarean delivery at their first birth were anesthesia professionals, and the remaining were professionals working outside the operating room; and 31 of those who preferred vaginal delivery were anesthesia professionals, and the remaining 55 were professionals working outside the operating room. This difference is statistically significant. When the difference between the first delivery preferences was compared according to their work areas, the cesarean preference rate of anesthesia professionals in the operating room was found to be higher than the professionals working outside the operating room ( $p=0.001$ ) (Figure 2).

**Figure 2** -Distribution of cesarean and vaginal deliveries rate according to working area



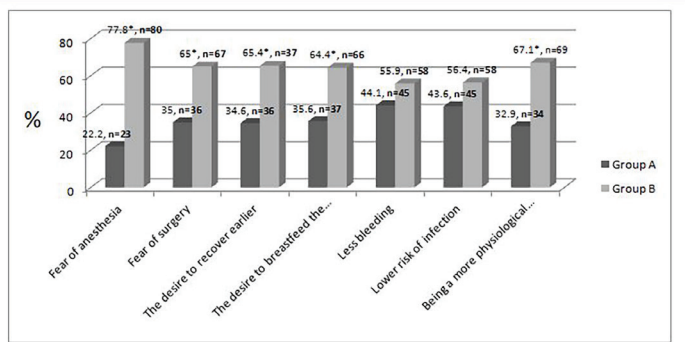
When the first birth preferences of the participants included in the study were examined, it was determined that 52 of 120 people who preferred cesarean delivery were paramedic person, 40 were doctors, 28 were nurses, and the rate of cesarean delivery in paramedic person was statistically higher than doctors and nurses ( $p<0.05$ ) (Figure 3).

**Figure 3** -Comparison of the first delivery method according to profession



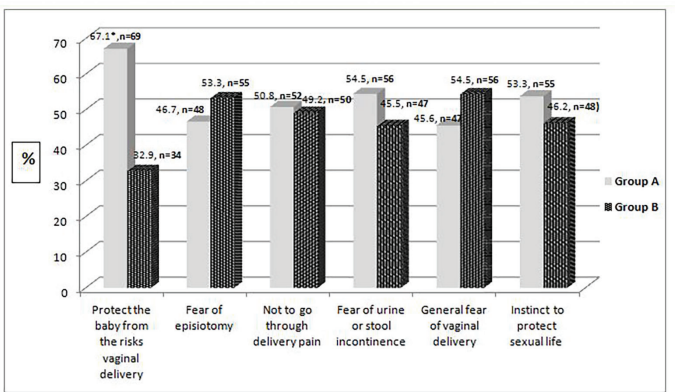
The answers given to the question about why the participants who preferred normal vaginal delivery at their first birth preferred this delivery method are as follows: Being more physiological (81%), to recover earlier (61%), to breastfeed the baby early (53%), it has a lower risk of infection (45%), expectation of less bleeding (39%), fear of surgery (23%), fear of anesthesia (10%). Among the reasons of the professionals working outside the operating room for preferring normal vaginal delivery method, “its more physiological characteristic”, “fear of anesthesia and surgery”, “early recovery” and “the desire for breastfeeding the baby earlier” were statistically more frequent compared to the anesthesia professionals ( $p<0.05$ ) (Figure 4).

**Figure 4** -Distribution of the reasons for preferring vaginal delivery according to working area



For the question about why those who preferred cesarean delivery at their first birth selected this delivery method, the following answers were given: not to put the baby at risk (66%), not to go through pain (54%), fear of vaginal delivery (49%) and fear of episiotomy (25%), fear of urine or stool incontinence (20%), instinct to protect sexual life (10%). When compared according to the work areas, the option of "not to put the baby at risk" was statistically more frequent in anesthesia professionals working in the operating room than the professionals working outside the operating room ( $p<0.05$ ) (Figure 5).

**Figure 5** -Distribution of the reasons for preferring cesarean delivery according to working area



## Discussion

This study, in which we compared the anesthesia professionals in the operating room and the health professionals outside the operating room, has shown that the rate of delivery by the cesarean method is higher in the anesthesia professionals in the operating room. In addition, the occupational group with the highest rate of delivery by the cesarean method was observed to be comprised of paramedic persons.

Since anesthesia professionals routinely see both their own practices and surgical procedures every day, their fear of these practices may be less. As a result, by ignoring the possible risks of both practices, anesthesia professionals prefer the cesarean method more than those working outside the operating room in this study. On the other hand, the rate of vaginal delivery was found to be higher in those working outside the operating room compared to anesthesia professionals. When we look at the first delivery method according to professions, it is seen that paramedic person prefer the cesarean method more than doctors and nurses. In parallel with the education received, it is an undeniable fact that doctors and nurses have more information about the delivery process, and the cesarean rate was found lower in them compared to the paramedic person. However, it is interesting that cesarean deliveries are higher than



normal deliveries among the medical doctors. We think that the idea of not endangering the baby in the slightest negativity and overcoming this situation with the cesarean method is effective here.

In general, the physiological structure of the female body is suitable for normal vaginal delivery. Vaginal delivery can be carried out successfully with adequate support and appropriate intervention. However, in cases such as head-pelvis incompatibility, disorders of the baby's posture, dystocia, fetal distress, large baby, and previous cesarean delivery, normal delivery can lead to serious problems for the mother or the baby or both. In such negative cases, cesarean delivery is preferred to eliminate the available risk [6]. Cesarean delivery, which requires surgical intervention, is lifesaving for the mother and the baby, if it is deemed necessary, however, it can increase the maternal morbidity and mortality rates 4 times compared to vaginal delivery. In addition to increasing the mortality, the cesarean method also has many disadvantages such as delayed breastfeeding and later start of the relationship between the mother and the baby, delayed maternal recovery, and increasing the risks associated with subsequent births [7-9]. The method of first delivery influences the cesarean rates significantly. Even though the idea of "once a cesarean-always a cesarean", which was put forward before the 2000s, is still discussed today, it still affects the selection of the second delivery method [10]. As a preference of pregnant women or obstetricians, selection of the cesarean method is still high in deliveries after the cesarean deliveries. In their study on the first and second cesarean deliveries, Diejomaoh et al. found the general cesarean delivery rate as 34.7% in their studies on first and second cesarean births, and stated that the previous delivery method played an important role in decreasing the high cesarean rates [11]. As it is understood from here, in order to decrease the cesarean rate, it is necessary to conduct studies that focus on the first delivery method of pregnant women.

When the researches about delivery methods are examined, it is seen that women generally preferred vaginal delivery until 2000s. However, at the beginning of this century, the cesarean method, which used to be an operation carried out to save the lives of women, has started to be considered as low-risk surgical interventions to save the life of the fetus over time. It has also started to be seen increasingly as a method of delivery that facilitates the life of both the mother and the baby and doctors. As a result of this perspective, it has been reported that there is an increase in cesarean delivery rates in health professionals without medical indications [12]. In parallel with this idea, in our study on 206 individuals, it was observed that approximately 60% of the participants preferred cesarean delivery at their first birth and the normal vaginal delivery rate remained at the level of 40%. These high cesarean rates, which are observed and increasing in health professionals, are an important medicosocial problem to be examined.

Even though it has been reported by the World Health Organization (WHO) that cesarean rates should be around 10-15%, a remarkable increase attracts attention in the cesarean deliveries all over the world. While cesarean rates were around 30% in the United States, Italy, France, Germany and Korea in 2010, recently, they have reached 45-50% especially in Turkey and Korea [13,14]. As in the whole world, a serious increase is seen in cesarean delivery rates in Turkey. According to the data of Turkey Demographic and Health Survey (TDHS), the cesarean delivery rate in Turkey was 21.2% in 2003, however, it reached 52% in 2018 [15]. In their paper, Karabel et al. attributed the

cesarean delivery rates much higher than the medical indications to the lack of trust between doctors, patients and health system, and also to women's fears, social and cultural beliefs [16]. As a result of the better determination of the indications and closer pregnancy follow-ups, it has been reported by the WHO that a 10% increase in the cesarean delivery rate is related to a decrease in maternal and infant mortality, but an increase more than 10% is not significant [17]. According to the TDHS 2018 report, 38% of cesarean decisions were made before the birth pain started whereas 14% were given after the pain. The fact that unplanned cesarean deliveries are so high suggests that a significant part of cesarean deliveries is not essential and mandatory [15]. The overall high cesarean rate in our study supports this research. On the other hand socioeconomic and educational status may effects caesarean delivery rate. In a cross-sectional study in India, it was stated that cesarean rate varied from 3% to 70% according to regions and socioeconomic groups [18].

When the long- and short-term effects of the cesarean section on mothers and babies are examined, it is reported that this surgical intervention, which is lifesaving when necessary, brings along many negativities [19]. In addition to these scientific facts, the fact that the cesarean section, which does not have any medical indications, is a surgical intervention that would interrupt the normal flow of people's lives, fear of anesthesia and surgery still keeps people distant from surgical procedures when not mandatory, normal vaginal delivery has less risks for the mother and it is a physiological process causes the expectation for a lower cesarean delivery rate. However, in our study, even though cesarean rates were high in both groups, anesthesia professionals in the operating room were found to be higher than those working outside the operating room. It was determined that the most effective factors in the preference of cesarean delivery were the thought of not putting the baby at risk, normal delivery pain and delivery process and fear of episiotomy, respectively. It was observed that the risks of the cesarean section for the mother were ignored by the anesthesia professionals due to the idea that it was simple procedure. The cesarean delivery average in the professionals outside the operating room (46.6%) was lower than the cesarean delivery average of overall Turkey (52%), however, the rate in anesthesia professionals (69.9%) was much higher than the average of the whole country, which supports this view of ours.

In the study conducted by Al-Mufti et al. on health professionals and published in 1996, it was reported that factors such as fear of harming the baby, fear of delivery pain, and fear of pelvic relaxation that may occur later came to the forefront as the reasons for choosing the cesarean method, which was observed at a high rate in the study [12]. Despite the historical process, we see that, with the observation of the similar reasons for cesarean preference in our study, fear and concerns continue in the same way. On the other hand, there is an epidural labour analgesia method, which is widely used all over the world today, for delivery pain and fear of episiotomy that directs mothers to preferring the cesarean method. It has been reported that epidural analgesia allows for safe vaginal delivery even in patients with severe comorbidity [20]. Today, there are anesthesiologists who can apply epidural analgesia in every country and hospital, and this method can be applied to the expectant mothers who would like to have it. Despite all these, this rate is higher among anesthesia professionals working in the operating room. They may think that anesthesia and surgical procedures as simple and easy. This thought may lead them more easily to cesarean delivery as a delivery preference.

Normal vaginal delivery is preferred due to faster recovery in the next period, quicker interaction and communication with the baby, and cultural reasons. In addition, it has been stated that factors such as the consideration of vaginal delivery as a more natural and healthier method for the baby, expectation of a less painful postpartum period, and fear of surgical operation are among the reasons for preferring normal delivery [9,21]. In our study group, the reason for preferring normal delivery was its more physiological characteristic, earlier recovery, desire to breastfeed the baby earlier and fear of surgery.

In this study, where we investigated the cesarean tendencies of those working inside and outside the operating room, there are some limitations. Execution of the study only in one city, low number of participants in such a study, and different sociocultural and educational levels of the participants can be counted among these limitations.

## Conclusion

We are of the opinion that anesthesia professionals are more likely to give birth with the cesarean method, which results from the idea that cesarean is a delivery method that is seen every day, easy to apply, has low risks and is a comfortable method. Still, this opinion should be supported by multicentered studies including more participants, different countries and regions.

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**Authors contributions:** Engin Erturk: Design of the study writing the article. Ali Akdogan: Conducting surveys and writing the article. Adem Arslan: Conducting surveys and writing the article.

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