RESEARCH ARTICLE

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DELIVER PREFERENCE AND INFLUENCING FACTORS IN WOMEN GIVING BIRTH

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ABSTRACT

This study was planned to determine the birth preferences of women with vaginal, cesarean and both vaginal and cesarean delivery experience. A total of 600 women were sampled. The reasons for choosing vaginal birth of women participating in our work are to be natural and suitable for baby, less pain and bleeding in postpartum period, easier return to normal life and earlier discharge. In our study, the reasons for choosing cesarean birth were determined as indications and doctor's decision, less pain and more comfort, baby safety, no perineal tears, short duration of operation and easy management.

Keywords: Birth preference, cesarean birth, fear of birth, vaginal birth, pain

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1. INTRODUCTION

Pregnancy and birth, together as a psysiological event, are important sources of stress for women. During this period, women are concerned about how the birth type will happen. Because the way of delivery is one of the important issues that should be decided during pregnancy (Gozukara, & Eroglu, 2008; Kocak, & Ozcan, 2018).

To determine the optimal birth preference for every pregnant woman; it is critical to provide high quality, patient-centered care in obstetrics. Although vaginal birth continues to be the most common form of birth, cesarean rates in the world are increasing day by day (Hamilton, Hoyert, Martin, Strobino, & Guyer, 2013; United States Department of Health and Human Services, 2013).

Cesarean rates in Brazil also began to increase in the mid-1990s. In 2009, cesarean rates exceeded normal birth rates and reached 52% in 2010 (Domingues, et al., 2014). The United States has reported that about 1.3 million women have delivered by cesarean section each year (Shorten, Shorten, Keogh, West, & Morris, 2005). Cesarean rates on the numbers that WHO has proposed are 35-45% in USA, Taiwan, Australia, UK, New Zealand and Canada (Chen, & Hancock, 2012).

Cesarean delivery is also common in Turkey. Cesarean ratios, which were 37% according to 2008 TNSA data, increased to 48% compared to 2013 data (TNSA, 2013). These rates are much higher in the world than in the 15% recommended by the World Health Organization in Turkey (Domingues, et al., 2014).

It is noteworthy that, in studies conducted with pregnant women or postpartum women, women prefer mostly vaginal birth. Factors such as new clinical guidelines aiming at lowering the rate of caesarean section, prenatal counseling, inclusion of patients in birth selection are attributed to this increase (ACOG, 2014).

The International Federation of Gynecology and Obstetrics (FIGO) states that the cesarean section should be done for medical reasons, not on demand. The American Association of Gynecology and Obstetrics (ACOG) stated in 2008 that they did not find cesarean section as appropriate before the 39th week of pregnancy (ACOG, 2010). It is emphasized that, except for medical reasons, cesarean section should be avoided from non-indication cesarean sections when considering the heavy burdens brought to mother and baby health (Ozkana, Sakal, Avcı, Civil, & Tunca, 2013).

The studies have shown that factors such as education level of mother, socio-economic background, advanced age, hospital, living in urban area, physician working in private sector, the thought of necessity of old cesarean cases to be delivered by cesarean section also increase the birth rate by cesarean section. Another important reason that has a role in increasing the rate of cesarean section is the mother's request (Domingues, et al., 2014; Ozcan, Arar, & Cakır, 2018; Ozkana, Sakal, Avcı, Civil, & Tunca, 2013).

In a study conducted, cesarean rates were reported as 26.4% in low-risk nulliparous women and 89.9% in low-risk women who had previously delivered cesarean (Hamilton et al., 2013). Especially vaginal birth after cesarean section and elective cesarean section are very controversial issues. In this case, women should be educated about these issues and the choice of birth should be decided together (Shorten, Shorten, Keogh, West, & Morris, 2005; Takegata, Haruna, Morikawa, Yonezawa, Komada, & Severinsson, 2018).

Pregnancy causes both stress and depression in women. By postponing their birth preferences, women stated that this ambiguity would be an advantage in terms of depression and anxiety. In

a study that assessed the birth preferences of pregnancies during the 28th week of pregnancy, it is stated that women still did not decide. In the study, the determined birth preference during early weeks or even during the first pregnancy checks was suggested to remove uncertainties and to help person to be self-prepared (Shorten, & Shorten, 2014).

Co-operation with health personnel is recommended according to the specific characteristics and values of pregnant women (Kaimal, & Kuppermann, 2012). Although women often state that they want to participate in the prenatal decision-making process, there is a controversial issue where the patient preferences are included (Moffat, et al., 2007).

For this reason, women-centered care is important in determining the birth preference. Women-centered care includes informing the woman about the birth option before the cesarean section and explaining the risks of cesarean section. Women-centered care deals with maternal and infant health and includes three goals. These; selection, maintenance and control (Chen, & Hancock, 2012). When considering the form of birth, the woman's cultural and social values, reproductive planning, and personal needs should be considered together with the participation of the woman (Kingdon, et al., 2009; NIH, 2006).

The reduction of cesarean birth rates and the support of women for vaginal birth are important objectives. Pregnant woman's choice of birth should be questioned, how vaginal birth should be perceived, potential outcome should be assessed (Yee, et al., 2015).

Studies conducted up to now have focused on which birth choice preferences and possible effects to women especially during pregnancy period. This study was planned to determine the birth preferences of women with vaginal, cesarean and both vaginal and cesarean delivery experience.

2. MATERIALS AND METHODS

This study is descriptive and cross-sectional. The population of the study consists of women who applied to a public hospital and gave birth. The study sample consisted of women who applied to the hospital within the specified time period. During this time, approximately 550 women were interviewed. The women were divided into three groups according to the type of birth. A total of 600 samples were completed to synchronize the groups. 200 women in cesarean section, 200 women in vaginal delivery group and 200 women in both cesarean and vaginal delivery groups were included. In order to carry out the study, permission of the institution and the ethics committee was obtained. The data were collected within a period of 6 months between 15.01.2018/15.07.2018.

Criteria to be included in the study are being in the 18-50 age range, the woman accepting to participate voluntarily, the woman does not have cognitive problems, and the woman has given birth.

Before the study, each woman was interviewed face-to-face, the purpose of the study was explained to participants and their informed verbal approval was taken. Questionnaires were filled out one by one by the requesting women themselves or the researchers who read questions.

2.1. Data Collection Tools

In the study, a questionnaire consisting of a total of 42 questions covering the socio-demographic characteristics of women and their obstetric characteristics such as birth, pregnancy, abortion, abortion, birth type, pre- and post-natal and postnatal problems and experiences were created by researchers.

2.2. Implementation Permit of the Research

For the implementation of the research, the permission was obtained from Gümüşhane Unıversıty Scıentıfıc Research and Publıshıng Commıttee (Approval Number= 95674917-604.01.02-E.825).

2.3. Statistical Analysis

Obtained data were evaluated with statistical package program and error checks, tables and statistical analyzes were performed. Percentage, mean and chi-square tests were used for statistical evaluation.

3. RESULTS

The average age of the women is 36.42±8.91 (*min*=18, *max*=60) and the marriage age is 20.64±3.58. Some socio-demographic characteristics of women are given in Table 1.

Table 1. Some socio-demographic characteristics of women

Women's educational status	***n***	***%***	**Husband's educational status**	***n***	***%***
Primary-secondary education	273	47.9	Primary-secondary education	199	33.7
High school	192	33.8	High school	251	42.4
Bachelor-prelicense	104	18.3	Bachelor-prelicense	141	23.9
Total	569	100.0	Total	591	100.0
The place life mostly passed	***n***	***%***	**Income status**	***n***	***%***
Village	150	25.3	Less income than expenses	120	20.6
District	135	22.8	Income equal expenses	399	68.7
Province	307	51.9	More income than expenses	62	10.7
Total	592	100.0	Total	581	100.0

47.9% of women had primary and secondary education, 42.4% of their husbands had high school graduates. 51.9% spent mostly their lives in province and 68.7% have equal income to their expenses.

As a result of evaluation of participants' pregnancy and birth stories; the mean pregnancy number was 3.62±2.86 (*min*=1, *max*=25), the mean number of the births was 2.77±1.64 (*min*=1, *max*=12), the mean miscarriage number was 1.17±1.79 (*min*=0, *max*=19) and the mean abortion number was 0.61±0.7 (*min=0, max=3*).

51.3% of the women stated that they had been educated about birth, 51% of the educated ones were took education from health personnel, 30.9% were informed from their friends and close environment, and 50.8% stated that their births were at home. Participants' birth preferences are given in Table 2.

Table 2. Deliver preferences of the participants

Deliver type and preferences		
Deliver type	***n***	***%***
Vaginal delivery	200	33.3
Cesarean section	200	33.3
Vaginal / cesarean delivery	200	33.4
Total	600	100.0
Preference before birth	***n***	***%***
Vaginal delivery	455	82.9
Cesarean section	54	9.9
Not decided	40	7.2
Total	549	100.0
Preference after birth	***n***	***%***
Vaginal delivery	440	75.5
Cesarean section	115	19.7
Vaginal / cesarean delivery	28	4.8
Total	583	100.0

82.9% of the women stated that they preferred vaginal before giving birth, and 75.5% stated that they preferred vaginal birth after giving birth. Of the participants, 45.7% stated that normal birth and intervention when needed were the most appropriate type of birth in terms of mother and baby health, and 82.0% stated that the most important factor in determining the type of birth was baby health.

44.7% of the women stated that the type of delivery affected the infant care, 37.9% stated that the delivery type affected the sexual life and 72.3% stated that their ideas about the delivery type were asked. 83.1% of the participants stated that they went to regular health checks, 37.7% had problems with breastfeeding, 62.8% received postpartum care, 59.8% received postpartum care from midwives and nurses. Table 3 shows the vaginal and cesarean birth preferences of women.

Table 3. The reasons why women prefer vaginal or cesarean delivery

Reasons of birth preference		
Vaginal delivery preferences*	***n***	***%***
Becoming a natural event	276	46.0
More suitable for baby	187	31.2
Less pain and bleeding after birth	147	24.5
Easier return to normal life	141	23.5
Early discharge	66	11.0
Cesarean section preferences*	***n***	***%***
Indication status and doctor's decision	148	24.6
Less pain and more comfort	81	13.5
Safety of baby	63	10.5
Perineal rupture does not occur	24	4
Having a short transaction	15	2.5
Easy to manage	5	0.8

more than one answers given

46.0% of the women stated that they preferred cesarean delivery with vaginal birth due to a natural event, 24.6% with indications and doctor's decision. Table 4 summarizes the ways of giving birth and getting postpartum care, problems with breastfeeding, sexual life and infant care.

Table 4. Women's preferences for giving birth and problems with postpartum care, breastfeeding, sexual life and infant care

Delivery Type	**Postpartum care***					
	Yes		**No**		**Total**	
	n	***%***	***n***	***%***	***n***	***%***
Vaginal delivery	91	46.0	107	54.0	198	100.0
Cesarean section	129	65.2	69	34.8	198	100.0
Vajinal and cesarean birth	153	77.3	45	22.7	198	100.0
					X^2: 21.196, p: 0.000	
Delivery Type	**Breastfeeding problems***					
	Yes		**No**		**Total**	
	n	***%***	***n***	***%***	***n***	***%***
Vaginal delivery	66	33.3	132	66.7	198	100.0
Cesarean section	93	47.0	105	53.0	198	100.0
Vajinal and cesarean birth	65	32.8	133	67.2	198	100.0
					X^2: 10.851, p: 0.004	
Delivery Type	**Effect on sexual life***					
	Yes		**No**		**Total**	
	n	***%***	***n***	***%***	***n***	***%***
Vaginal delivery	47	26.0	134	74.0	181	100.0
Cesarean section	67	35.4	122	64.6	189	100.0
Vajinal and cesarean birth	100	51.3	95	48.7	195	100.0
					X^2: 26.277, p: 0.000	
Delivery Type	**Effect on infant care**					
	Yes		**No**		**Total**	
	n	***%***	***n***	***%***	***n***	***%***
Vaginal delivery	60	31.4	131	68.6	191	100.0
Cesarean section	105	53.6	91	46.4	196	100.0
Vajinal and cesarean birth	97	48.7	102	51.3	199	100.0
					X^2: 21.196, p: 0.000	

****percentage line was used.***

There was a significant correlation between the type of the delivery and postpartum care ($X^2=21.196$, $p=0.000$), problems with breast feeding ($X^2=10.851$, $p=0.004$), effect on sexual life ($X^2=26.277$, $p=0.000$) and effect on infant care ($X^2=21.196$, $p=0.000$). It was determined that the situations of taking postpartum care, problems with breastfeeding, effect on sexual life and infant care were common in cesarean section. Table 5 compares the type of delivery with prenatal and postnatal preferred types of delivery.

Table 5. Comparison of the type of delivery with prenatal and postnatal preferred types of delivery.

Delivery Type	Preference before giving birth*					
	Vaginal Delivery		Cesarean Section		Not decided	
	n	*%*	*n*	*%*	*n*	*%*
Vaginal delivery	178	39.1	12	22.2	3	7.5
Cesarean section	142	31.2	32	53.3	10	25.0
Vajinal and cesarean birth	135	29.7	10	18.5	27	67.5
Total	455	100.0	54	100.0	40	100.0
						X^2: 45.505, p: 0.000
Delivery Type	**Preference after giving birth***					
	Vaginal Delivery		**Cesarean Section**		**Vaginal or Cesarean**	
	n	***%***	***n***	***%***	***n***	***%***
Vaginal delivery	183	41.6	12	10.4	1	3.6
Cesarean section	129	29.3	65	56.5	0	0.0
Vajinal and cesarean birth	128	29.1	38	33.1	27	96.4
Total	440	100.0	115	100.0	28	100.0
						X^2: 100.344, p: 0.000

column percentage used.

There was a statistically significant relationship between the delivery type of women and their preferences of before *(X^2=45.505, p=0.000)* and after *(X^2=100.344, p=0.000)* they give birth. It was determined that women generally preferred vaginal birth before and after they give birth. Regardless of the type of their delivery, women generally preferred vaginal birth before and after they give birth.

A further significant difference was found between the educational status of women and the way of giving birth (*X^2=46.437, p=0.000*). Cesarean rates are higher among women with a bachelor's degree, and cesarean delivery rates are increasing as education level increases. There was no significant difference between the working status of women and the way of giving birth (*X^2=7.820, p=0.098*). There was a significant difference between the place where the life passed and the way of birth (*X^2=18.755, p=0.001*). Cesarean rates are significantly higher for women living in the province than for those living in the village. There was a significant difference between the status of receiving education about delivery and the way of giving birth (X^2=38.011, p=0.000). Cesarean rates are higher among women who receive education about birth. There was a significant difference between birth place and delivery type (*X^2=87.809, p=0.000*). Vaginal birth rates are higher among women who have a home birth story.

4. DISCUSSION

Examination of specific indications for caesarean delivery has a wide clinical picture ranging from a situation in which vaginal birth is contraindicated (such as a full placental previa) to a complete implementation depending on the preference of the patient (Kaimal & Kuppermann, 2012; Nakamura-Pereira, Esteves-Pereira, Gama, & Leal, 2018). These clinical tables need to be evaluated very well. Cesarean delivery should be assessed properly and the patient should be supported in cases such as cesarean delivery without any problems for vaginal delivery, deterioration or decrease of fetal heart rate in vaginal birth (ACOG, 2010; Barber, Lundsberg, Belanger, Pettker, Funai, & Illuzzi, 2011). It is very important that the informed consent of the woman is taken in this process in order to make the most appropriate decision for the woman between the patient and the health personnel and to evaluate the risks, benefits and alternatives (ACOG, 2010). As mentioned in the studies, it is important to take the idea of the patient in this process and 72.3% of the women in our study stated that they have taken their ideas about birth preference.

Women's educational status is lower than their peers. Cesarean rates are higher among women with higher education levels. Studies have indicated that higher education level is a cesarean section indication (Ozkana, Sakal, Avcı, Civil, & Tunca, 2013). Cesarean rates are higher among women who live in province and who had the birth story in the hospital. Studies have reported the need for taking into account the women's health and health stories, educational status, socio-demographic characteristics, previous medical experiences and how their health outcomes were assessed as well as their preferences of vaginal delivery or cesarean section (Arcia, 2013; Wu, Kaimal, Houston, Yee, Nakagawa, & Kuppermann, 2014; Yee & Simon, 2010). Some of the factors that influence women's birth preferences have also been identified in our study. Factors among women with vaginal birth are low educational level, living in a village, birth story at home.

Nearly half of the women stated that they were trained about birth, and nearly half of the trainees were trained by health care workers, and the majority were trained by their friends and close environment.

In our study, although 82.9% of the women before the birth and 75.5% of the women after the birth stated that their preference was vaginal delivery, only 33.9% of the women had vaginal deliveries. In most of the conducted studies, it was stated that women were usually prefer vaginal birth (Fuglenes, Aas, Botten, & Oian, 2012; Karlstrom, Nystedt, Johansson, & Hildingsson, 2010). In the study of Wu et al, although vast majority of women prefer vaginal birth, it was stated that the 26-36th week pregnant women still had no a planned vaginal or cesarean delivery type (Wu, Kaimal, Houston, Yee, Nakagawa, & Kuppermann, 2014). In the study conducted by Yee et al, 59-75% of women who delivered by cesarean section stated that they wish to give vaginal delivery if they do give birth again. The average of natural, spontaneous, uncomplicated vaginal delivery preference scores was reported to be high risk tolerance for unplanned cesarean section. It has been suggested that uncomplicated cesarean delivery and vaginal birth are regarded as equivalent. Because women's perception as vaginal birth also includes major perineal lacerations. In this sense, the importance of patient education and counseling is emphasized. Women should be given extensive training covering maternal and neonatal outcomes. In addition to increasing the quality of obstetric care, focus on patient education and patient preferences has also been shown to reduce cesarean rates (Yee et al., 2015).

The reasons for choosing vaginal birth of women participating in our work are to be natural and suitable for baby, less pain and bleeding in postpartum period, easier return to normal life and earlier discharge.

In a conducted study, women preferred vaginal birth even though cesarean rates were high. It was stated that vaginal delivery is especially faster and easier to heal. In the preference for delivery type, positive experiences, positive birth stories in or around the family are effective. Mostly, primiparous women were scared of vaginal birth (Attanasio, Kozhimannil & Kjerulff, 2018; Domingues et al., 2014).

In our study, the reasons for choosing cesarean birth were determined as indications and doctor's decision, less pain and more comfort, baby safety, no perineal tears, short duration of operation and easy management.

In the study conducted by Domingues et al., Cesarean delivery preferences include being more secure for the baby, lack of knowledge of women, having gestation with assisted reproductive techniques and prevention of perineal injuries. To provide the best practices during antenatal care, women need to be provided with the necessary training, confidence and empowerment. It is also stated that it is important to avoid early referral to the hospital. Since vaginal birth is

preferred and cesarean delivery rates are high, it is necessary for the pregnant women to be supported for vaginal delivery (Domingues et al., 2014).

In vaginal birth, psychological support is offered to relieve women's anxieties in response to pre-existing negative birth stories (Kringeland, Daltveit & Moller, 2010). It is important to provide guidance to vaginal delivery by pharmacologic and non-pharmacologic methods to women who want caesarean section due to birth pain (NICE Clinical Guideline, 2011).

In the conducted study, it was stated that the rate of cesarean section in the primiparous women was worryingly high. Because cesarean section will be preferred in the future pregnancies. Studies have shown that vaginal birth after cesarean section is successful in 70% of cases, but only 14.8% of them prefer vaginal delivery after cesarean section and 62% of them prefer cesarean section without any indication. In this study made in Brasil, it was stated the acceptance of physicians as once a cesarean always a cesarean (Domingues et al., 2014).

Newborns born with caesarean section have more newborn deaths, longer hospital stay, shortness of breath problems, surgical damage and breastfeeding problems (Chen & Hancock, 2012; Heinzmann et al., 2009; MacDorman, Declercq, Menacker, & Malloy, 2008). Tachypnea in babies born to cesarean is twice as much as those in vaginal deliveries (Chen, & Hancock, 2012). The likelihood of uterine rupture in recurrent cesarean sections is also increasing (Chen & Hancock, 2012; Rossi & D'addario, 2008).

In a study of birth preferences at the 6th week of the long-term postpartum period, it was stated that the majority of women (82.3%, n=192) preferred cesarean delivery for fear of vaginal birth. The reason for this is attributed to inadequate support by counseling programs (Pang et al., 2008). Some of the reasons for choosing birth with elective cesarean are the potential risks of birth (anal / urinary incontinence, perineal disorders, pain during labor, long duration of action and superficial tears). Unlike gynecologists, urogynecologists and colorectal surgeons have emphasized that these risks are minimal and it is emphasized that midwives who are the closest consultant to share this information with pregnant women is an important factor in their decisions on the type of delivery (Turner, Young, Solomon, Ludlow, Benness, & Phipps, 2008).

In studies, it should be noted that the reasons for preferring cesarean birth due to rectal trauma and sexual dysfunction are myths (Chen, & Hancock, 2012; Klein, 2005). As a result of our study, it was determined that especially cesarean section women had more sexual problems and breastfeeding problems, difficulties in baby care and more postnatal care.

5. CONCLUSION

Although the vast majority of women prefer vaginal birth, the cesarean delivery was made due to reasons such as health status, fears, requests. For a healthier generation, it is important that women are supported in vaginal birth. For this, it is important for midwives, nurses and obstetricians who give care in the first step to inform the patients about the birth options and to look at their preferences and attitudes. Psychological support for those with negative birth stories and fears, encouragement of women, alternative options are needed.

Author Contribution

Study conception and design: HO, NKB, RHA

Data collection: HO, NKB, RHA

Data analysis and interpretation: HO, NKB, RHA

Drafting of the article: HO, NKB, RHA

Critical revision of the article: HO

Conflict of Interest: The authors declare no conflict of interest.

Ethical Statement

The name of the ethics committee is Gümüşhane Unıversıty Scıentıfic Research and Publıshıng Commıttee.
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