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Araştırma Makalesi/Research Article *2022 - 4(2)*

Women's Delivery Mode Preferences and Influencing Factors*

Kadınların Doğum Tercihleri ve Etkileyen Faktörler

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Öz

Amaç: Araştırmanın amacı, kadınların doğum şekli tercihlerini ve etkileyen faktörleri belirlemektir.

Gereç ve Yöntem: Kesitsel tipteki bu araştırma 363 gebe ile altı aile sağlığı merkezinde yürütüldü. Veriler Gebe Tanıtım Formu, Prenatal Kendini Değerlendirme Ölçeği' nin Doğuma Hazır Oluşluk ve Doğum Korkusu alt boyutları ve Bilinçli Farkındalık Ölçeği kullanılarak toplandı. Verilerin değerlendirilmesinde tek değişkenli analizler ve lojistik regresyon analizleri kullanıldı.

Bulgular: Araştırmaya katılan gebelerin %62.3'ü vajinal doğumu tercih ettiğini ifade etti. İkili lojistik regresyon modeline göre gebelerin önceki doğum şekli (OR:25.51, p:0.000) yaşadığı yerleşim yeri (OR:3.59, p:0.022) ve doğum korkusu (OR:2.82, p:0.031) doğum şekli tercihlerinde belirleyici bulundu. Primipar kadınlarda ise doğum korkusu (OR:6.42, p:0.000), yaş (OR:3.44, p:0.033) ve çalışma durumu (OR:2.95, p:0.034) doğum şekli tercihi üzerinde belirleyici bulundu.

Sonuç ve Öneriler: Araştırma sonunda hem tüm gebelikler hem de primipar gebelikler için doğum korkusu doğum şekli tercihinde en temel belirleyici olarak bulundu. Bu doğrultuda gebelerin gebelikleri süresince etkili danışmanlık alabilecekleri ve doğum korkularını konuşabilecekleri birimlerin oluşturulmasının, karar verme süreçlerini sağlıklı bir şekilde yönetmelerine yardımcı olabileceği düşünülmektedir.

Anahtar Kelimeler: Gebe, korku, doğum şekli.

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Abstract

Objective: The aim of the study was to determine women's delivery mode preference and influencing factors.

Material and Method: This cross-sectional study comprised 363 pregnant women. The study conducted in six family health centers in Turkey. Data were collected with "Pregnant Introductory Form," "Preparation for Labor and Fear of Labor Scales," and "Mindful Attention Awareness Scale". Univariate and logistic regression analyses were used for data analysis.

Results: 62.3% of pregnant women stated that they prefer vaginal birth. In the binary logistic regression model, the previous birth type (OR:25.51, p:0.000) place of residence (OR:3.59, p:0.022), and fear of labor (OR:2.82, p:0.031) were found decisive on delivery mode preference of pregnant women. However, fear of labor (OR:6.42, p:0.000), age (OR:3.44, p:0.033) and working status (OR:2.95, p:0.034) were found to be decisive for primiparous women.

Conclusion: Fear of labor was the most fundamental determinant for both primiparous and all pregnancies. It is thought that establishing units where pregnant women can get effective counseling during pregnancy and talk about their fears of childbirth may help them manage their decision-making process in a healthy way.

Keywords: Pregnant women, fear, delivery mode.

INTRODUCTION

Pregnancy and the birth process are critical periods. It is very important for the woman and her family to decide on how to give birth in a healthy way (Taşkın, 2016). Women have to negotiate a complex array of decision-making processes involved in preparing for birth. This involves aspects of care, including different approaches toward birth preparation, choice of birth environment, and exploration of the mode of labor, all framed within women's individual perceptions, unique aspirations, and wishes (Sanders & Crozier, 2018).

Every birth has certain characteristics that should be decided on the basis of the circumstances, and when the mode of delivery is decided, each pregnancy should be assessed considering the individual special conditions and acted on according to this principle (Abdel et al., 2016). During pregnancy process, if suitable counseling is provided to the pregnant woman by health workers, it can be ensured that the pregnant woman decides on a healthy and appropriate delivery mode. Medical reasons should take precedence in deciding between vaginal birth or cesarean section because cesarean section is performed if vaginal birth is not safe or if vaginal birth increases the risk of mortality and morbidity in the pregnant woman or baby (Smith et al., 2019). In addition to the requirements of health conditions, pregnant women decide on the mode of delivery according to many factors, such as the fear of labor; preparation for labor; level of awareness; orientation of family, friends, and health personnel; income level; education status; and previous birth type and experiences (Azami-Aghdash et al., 2014; Karabulutlu, 2012; Akarsu & Mucuk, 2014). According to the literature fear and pain are the leading causes of cesarean section (Akarsu & Mucuk, 2014; Ergöl & Kürtüncü, 2014; Torloni et al., 2013; Başar & Sağlam, 2018). In these studies, the factors, associated with the delivery mode preference, were generally considered separately, but the factors that were thought to affect the mode of delivery were not evaluated together in same research.

Mindfulness is generally defined to include focusing one's attention in a nonjudgmental or accepting way on the experience occurring in the present moment (Kabat-Zinn, 2009). Mindfulness is known to decrease psychological distress. Its possible benefits in pregnancy have rarely been explored. There are relevant studies in the literature, such as studies on the fear of birth, determinants of cesarean section, and level of being ready for birth, as well as educational studies focused on developing mindful attention awareness in pregnancy (Krusche et al., 2018; Braeken et al., 2017; Karabulutlu, 2012; Dunn et al., 2012; Haines et al., 2012).

Studies on the factors affecting the birth type preferences of pregnant women are generally structured on a single factor that is thought to affect the delivery mode preferences of pregnant women. Studies conducted on more than one factor that are predicted to affect the mode of delivery and to identify the most decisive of these factors are limited. This study was carried out to evaluate the effects of pregnant women's fear of birth, their readiness for birth, their level of mindful awareness and some socio-demographic and obstetric characteristics on the birth preference of pregnant women.

Research Questions

- Does the preparation for labor of pregnant women affect their delivery mode preference?
- Does the fear of labor of pregnant women affect their delivery mode preference?

- Does the mindful attention awareness level of pregnant women affect their delivery mode preference?
- What are the factors affecting the delivery mode preference of pregnant women?

MATERIAL AND METHODS

The Aim and Type of the Study: The cross-sectional study was carried out to evaluate the effects of pregnant women's fear of birth, their readiness for birth, their level of mindful awareness and some socio-demographic and obstetric characteristics on the birth preference of pregnant women.

The Targeted Population and Sample of The Study: This study was conducted at six Family Health Centers (FHCs) located in Manisa province between January and November 2016. The study population comprised N:4881 pregnant women who enrolled in these FHCs. Keeping the preference of delivery mode prevalence at 50% (unknown prevalence), the sample size was calculated using Openepi software (Dean et al., 2013). When the sample group was determined, the stratification of the FHC regions as high, medium, and low socioeconomic level was taken as the basis. The numbers of the FHCs were written on papers and two FHCs were selected from each stratum via draw. Pregnant women enrolled in family health centers were included in the study population using stratified random sampling method to comprise all socioeconomic stratifications of population in Manisa. The study sample was n:363 pregnant women. The inclusion criteria were being during pregnancy period (gestational age of week 42 or less) and be willing to participate in the study. The exclusion criterias of the study were determined as being illiterate, unable to understand Turkish language and having indications for cesarean section (e.g., placenta previa, macrosomia, preeclampsia).

Data Collection Tools: Three data collection tools were used in the study.

Pregnant Introductory Form: This form prepared by the researchers in the direction of the literature was a data collection tool comprising 14 questions for examining the obstetric features of the pregnant women, their preference of the delivery mode, and sociodemographic characteristics.

Preparation for Labor and Fear of Labor Subscales of the Prenatal Self-Evaluation Scale: This scale developed to evaluate the adaptation of pregnant womens to the pregnancy process and motherhood (Lederman & Lederman, 1979). Each item in both the subscales is measured by a 4-point evaluation. Adaptation to the pregnancy is assessed on the basis of the results of the scores, which range from 1 to 4. The lowest is 10 points and the highest is 40 points that can be obtained in both the subscales. Low scores indicate a high adaptation to pregnancy. In the reliability and validity of prenatal self-evaluation questionnaire for Turkish population Cronbach's alpha value for the Preparation for Labor Subscale was 0.72 and the Fear of Labor Subscale was 0.84 (Beydağ & Mete, 2008). In current study, Cronbach's alpha values of subscales in order of were determined as 0.65 and 0.71.

Mindful Attention Awareness Scale (MAAS): This measuring tool is a 15-item scale that measures the general tendency to be aware of and be careful about immediate experiences in daily life. MAAS has a single-factor structure, with items rated from 1 (almost always) to 6 (almost never), and gives a single total score. High scores on the scale indicate high mindful attention awareness. In validity and reliability study for Turkish population, Cronbach's alpha

internal consistency coefficient calculated according to item analysis was found to be 0.80, and test–retest correlation was found to be 0.86 (Ozyeşil et al., 2011). In this study, Cronbach's alpha values of subscales were determined as 0.74.

Data Collection: The data of the study were collected by the researchers by face-to-face interview method.

The Dependent and Independent Variables of The Study: The dependent variable of the study is the delivery mode preference of the pregnant women, and the independent variables are the factors (age, place of residence, perceived income level, having health insurance, educational level, educational level of husband, working status, previous delivery mode, Fear of Labor Subscale score, Preparation for Labor Subscale score, Mindful Attention Awareness Scale score) that are thought to affect the delivery mode preference.

Data Assessment: For data analysis, statistical software SPSS, version 21, was used (IBM SPSS Statistics for Windows, Armonk, NY:IBM Corp.). The significance level was considered at 0.05. Because the scale scores were not normally distributed, nonparametric tests were used for data analysis (Kolmogorov–Smirnov test p=0.001). Logistic regression analyses explaining the birth-type preferences of pregnant women were performed. It is known that when the goodness of fit level improves, −2 log likelihood value is expected to decrease. Enter method was applied in the logistic regression analysis. For the model's explanation power, the modified Nagelkerke (R2) value, which is the modified Cox & Snell (R2) value, was used because it is easier to interpret and change the range from 0 to 1 (Cokluk, 2010). Confidence level was taken at 95% and $p<0.05$ was considered statistically significant. The logistic regression model for all pregnancies showed that the previous delivery mode is a very strong determinant. Therefore, it was decided to perform another logistic regression analysis explaining the preference of the delivery mode of primiparous women in order to determine the factors affecting the decision-making process of primiparous women without the previous delivery mode as a determinant.

Ethical Considerations: The necessary formal permissions were obtained from Ethics Committee (reference number: 20478486-01 date: 06.01.2016) and Public Health Directorate (reference number: 54532031 date: 28.01.2016) for conducting the research. For the scales used in this study, permission was obtained from the authors via e-mail. During the data collection phase, the participants who volunteered to participate in the survey were asked to read and sign the informed consent form.

Limitation of the Study: Foremost limitation in this study, data on private health institution follow-up were not evaluated. Another limitation of the study is that the findings reflect the preferences based on the declarations of the pregnant women and do not include delivery method outcomes. We recommend to researchers take into account these limitation in future studies.

RESULTS

Sociodemographic characteristics, Preparation for Labor Subscale, Fear of Labor Subscale, and MAAS scores of pregnant women are given in Table 1. The mean age of pregnant women was 27.69±5.31 years, 62.3% of them stated the preference of the delivery mode as vaginal birth, and 37.7% stated the preference as cesarean birth (Table 1).

Table 1. Characteristics and Preparation for Labor Subscale, Fear of Labor Subscale and Mindful Attention Awareness Scale Scores of Pregnant Women (n= 363)

Characteristics		**n**	**%**
Age	≤ 28	210	57.9
(X ± SD: 27.69±5.31, Median= 28.00)	>28	153	42.1
Longest Living Place	District	88	24.2
	Province/ rural	275	75.8
Perceived İncome Level	Low/middle	235	64.7
	High	128	35.3
Having Health İnsurance	No	39	10.7
	Yes	324	89.3
Educational Level	< High school degree	203	55.9
	≥ High school degree	160	44.1
Educational Level of Husband	< High school degree	167	46.0
	≥ High school degree	196	54.0
Working Status	Not working	259	71.3
	Working	104	28.7
Previous Labor Type*	Normal birth	129	58.6
	Caesarean section	91	41.4
Parity	Multiparous	143	39.4
	Primiparous	220	60.6
Preference of Delivery Mode	Normal birth	226	62.3
	Caesarean section	137	37.7
Preparation for Labor Subscale Scores	20.88 ± 4.08** (Range: 11.00–30.00)	21.00*** (IR:6.00)	
Fear of Labor Subscale Scores	22.70 ± 4.15** (Range: 13.00–33.00)	23.00*** (IR:6.00)	
Mindful Awareness Scale Scores	58.52 ± 10.56**(Range: 37.00–79.00)	59.00***(IR:17.00)	

* Percentages are calculated according to the number of multiparous (n = 220); **Mean ± standard deviation *** Median (Interquatile range)

The results of the logistic regression model describing the preference of the delivery mode of pregnant women are given in Table 2. The most determinative variable among the predictive variables of the preference of the delivery mode of pregnant women was the previous mode of delivery (β=3.24). The odds for the preference for cesarean section of pregnant women who had a previous cesarean were 25.51 times higher (95% CI:10.61–61.35) than those of pregnant women who had a previous vaginal birth (p=0.000). The second strong determinative variable among the predictive variables of the preference of the delivery mode of pregnant women was the place of residence (β=1.28). The odds for the preference for cesarean section of pregnant women who live in a province/rural area were 3.59 times higher (95% CI:1.14–11.27) than those of pregnant women who live in a district (p=0.022). Another determinative variable among variables that predict the delivery mode of pregnant women was the fear of labor (β=1.04). The odds for the preference for cesarean section of pregnant women who had a higher fear of labor score were 2.82 times more (95% CI:1.08–7.31) than those of pregnant women who had a lower fear of labor score (p=0.031). It was found that age, perceived income level, having health insurance, educational level of the pregnant woman and her husband, working status, Preparation for Labor scores, and MASS scores were not determinative variables on the preference of the delivery mode of pregnant women (p>0.05). The initial −2 log likelihood value of the model was found to be 167.607, and the −2 log likelihood value of the finally constructed model was found to be 152.339. Nagelkerke (R2) value was found to be 0.652.

Table 2. Results of the Logistic Regression Model Describing Pregnant Womens' Preference of The Delivery Mode (n=363)

	β	S.E.	p	Exp (β)	95% CI for Exp (β)	
Characteristics					**Lower**	**Upper**
Age						
≤28 (ref.)	0.19	0.45	0.663	1.21	0.51	2.91
>28						
Place of Residence						
District	1.28	0.58	0.022	3.59	1.14	11.27
Province/rural areas (ref.)						
Perceived Income Level						
Low/middle (ref.)	0.64	0.46	0.174	1.89	0.76	4.71
High						
Having Health Insurance						
No (ref.)	0.75	0.87	0.393	2.12	0.38	11.76
Yes						
Educational Level						
<High school degree (ref.)	0.60	0.54	0.270	1.82	0.63	5.30
≥High school degree						
Educational Level of Husband	0.23	0.53	0.671	1.25	0.44	3.54
<High school degree (ref.)						
≥High school degree						
Working Status						
Not working (ref.)	0.60	0.53	0.262	1.82	0.65	5.11
Working						
Previous Delivery Mode *						
Vaginal birth (ref.)	3.24	0.45	0.000	25.51	10.61	61.35
Cesarean section						
Preparation for Labor Subscale Scores	0.72	0.47	0.134	2.06	0.81	5.21
≤Median (21.00) (ref.)						
>Median						
Fear of Labor Subscale Scores	1.04	0.49	0.031	2.82	1.08	7.31
≤Median (23.00) (ref.)						
>Median						
Mindful Attention Awareness Scale Scores	0.61	0.46	0.183	1.84	0.75	4.50
>Median (59.00) (ref.)						
≤Median						
Constant	−5.33	1.08	0.000	0.00		
Nagelkerke R^2 = 0.652			*−2 Log likelihood: 152. 339 (p = 0.001**)*			

* Calculated according to the number of multiparous (n = 220); ** p value of logistic regression model; S.E.: Standard error; ref: Reference value.

When the model was evaluated, it was seen that fear of labor (ß=1.86), age (ß=1.23), and working status (ß=1.08) of primiparous women had a high effect on the preference of the delivery mode (Table 3). When the model was evaluated according to the value of Nagelkerke R2, it was determined that 40.2% of variance in the preference of the delivery mode of primiparous women was explained by the model. It was found that the odds for the preference for cesarean section of primiparous women who had a higher fear of labor score were 6.42 times more (95% CI:2.03–20.22) than those of pregnant women who had a lower fear of labor score (p=0.000). The age of primiparous women was the second strong determinative variable that had an effect on the preference of the delivery mode. The odds for the preference for cesarean section of primiparous women over the age of 28 years were 3.44 times more (95% CI:1.11–10.64) than those of the women 28 years old or younger (p=0.033). When the working status of primiparous women was assessed, it was found that the odds for the preference for cesarean section of primiparous women who were working in any job were 2.95 times more than those of primiparous women who did not work in any job (p=0.034).

Table 3. Results of the Logistic Regression Model Describing Primiparous' Preference of the Delivery Mode (n=143)

Characteristics	B	S.E.	p	Exp (β)	95% CI for Exp (β)	
					Lower	Upper
Age						
≤28 (ref)	1.23	0.57	0.033	3.44	1.11	10.64
>28						
Educational Level						
<High school degree (ref.)	0.87	0.54	0.110	2.39	0.82	6.92
≥High school degree						
Working Status						
Not working (ref.)	1.08	0.50	0.034	2.95	1.10	7.94
Working						
Preparation for Labor Subscale Scores	0.26	0.50	0.601	1.30	0.49	3.44
≤Median (21.00) (ref.)						
>Median						
Fear of Labor Subscale Scores						
≤Median (23.00) (ref.)	1.86	0.58	0.000	6.42	2.04	20.22
>Median						
Mindful Attention Awareness Scale Scores	0.77	0.55	0.162	2.17	0.74	6.34
>Median (59.00) (ref.)						
≤Median						
Constant	-3.55	0.63	0.000	0.03		
Nagelkerke R2 = 0.402			*−2 Log likelihood: 131.183 (p = 0.001*)*			

* p value of logistic regression model; S.E.: Standard error; ref: Reference value

DISCUSSION

According to our findings, 62.3% of pregnant women stated the preference of the delivery mode as vaginal birth, and 37.7% stated the preference as cesarean birth. In some studies, vaginal birth preference rates were found to be 78.7%, and 78.2% (Shi et al., 2016; Mortazavi & Mehrabadi, 2021). There are similar findings related this issue in different studies conducted in our country (Karabulutlu, 2012; Akarsu & Mucuk, 2014; Başar & Sağlam, 2018). These study findings reflect only the preference of the delivery mode as stated by pregnant women. It is surprising that real vaginal birth rates are lower than those. If pregnant women are not demanding cesarean deliveries, physicians must shoulder some of the responsibility for high cesarean rates. It is thought that cesarean delivery can be planned according to the time frame desired by both the doctor and the pregnant and the doctors' fear of malpractice is effective in this result

According to the model applied for all pregnant women, three of the predictor variables were significantly associated with the preference of the delivery mode of pregnant women. The likelihood of preferring cesarean birth for those pregnant women residing in province/rural areas was 3.59 times more than that of those pregnant women residing in a district. This finding can be explained by the fact that the individuals living in a province are more advantageous than those living in a district in terms of economics and reaching the health services (Anselmi et al., 2015). In contrast, in this study, most of the pregnant women living in a district were 28 years old or younger (Pearson chi-square statistic, p=0.046); thus, this may have played a deceptive role in the findings regarding the preference of the delivery mode of pregnant women.

In this study, the likelihood of preferring a cesarean section for pregnant women who had a previous cesarean was found to be higher than that of pregnant women who had a previous vaginal birth. This finding is in line with the results of a study (Karabulutlu, 2012). As a rule, those who have a previous birth with a cesarean section should undergo cesarean section for their next birth as well; this is the most important reason why women prefer cesarean delivery in their later births (Azami-Aghdash et al., 2014; Karabulutlu, 2012; Akarsu & Mucuk, 2014). Despite the high success rates of vaginal birth after cesarean birth, both pregnant women and doctors do not want to take risks; therefore, vaginal births cannot be performed at the desired rates (Akarsu & Mucuk, 2014; Başar & Sağlam, 2018). Moreover, in the literature, it has been reported that cesarean birth is preferred more by multiparous than primiparous women. Similar to our study, two studies have found that cesarean sections are preferred more by multiparous than primiparous women (Shi et al., 2016; Ryding et al., 2016).

Considering the findings of primiparous women; among the factors analyzed, age, working status, and fear of labor were found to have a significant association with the preference of the delivery mode of primiparous women. It was found that the likelihood of preferring cesarean birth for primiparous women over 28 years old was more than that of primiparous women 28 years old or younger. This finding can be explained by an increase in pregnancy complications and, indirectly, an increase in the indications of cesarean delivery. This outcome is in line with the findings in related literature (Shi et al., 2016; Ryding et al., 2016). It was found that the likelihood of preferring cesarean birth for primiparous women who were working in any job was more than that of others who did not work in any job. Similar to these findings, in a study it is reported that working in any job has an effect on pregnant women's delivery mode preference, and working women prefer to have cesarean birth (Melesse et al.,

2020). However in a study no significant difference was detected between the preference of the delivery mode and working status (Karabulutlu, 2012). This different results of the studies can be explained by differences in the characteristics of the studied sample groups. We think that working women are more likely to prefer cesarean section because these women delay marriage and pregnancy, which then occurs at older ages, and older ages increase the risk of cesarean section (Akarsu & Mucuk, 2014).

Our study revealed that the fear of labor is significantly associated with the preference of the delivery mode of both all pregnant women and primiparous women. Particularly in primiparous women, it is the strongest determinant on the preference of the delivery mode. Table 3 indicates that primiparous women who have a higher fear of labor are more likely to prefer cesarean section than primiparous women who have a lower fear of labor, which is consistent with the results of most studies in the literature (Akarsu & Mucuk, 2014; Başar & Sağlam, 2018; Haines et al., 2012; Shi et al., 2016).

CONCLUSION AND RECOMMENDATIONS

Preparation for labor, fear of labor, and mindful attention awareness levels has an effect on birth preferences of pregnant women, but fear of labor is the most fundamental determinant for both primiparous and all pregnancies. Previous delivery mode, the place of residence, age, and working status of pregnant women are also other significant variables on delivery mode preference.

In accordance with the results of this research, it is recommended that individual counseling units can be established in prenatal clinics and primary health care centers in the period of preparation for labor to help pregnant women about their fears. In addition, considering the results of the studies in the literature on childbirth education classes, it would be beneficial to expand the childbirth education classes and to make these childbirth education classes accessible to all pregnant women for a healthy pregnancy and birth process,

Ethical Considerations: The necessary formal permissions were obtained from Ethics Committee (reference number: 20478486-01 date: 06.01.2016) and Public Health Directorate (reference number: 54532031 date: 28.01.2016) for conducting the research.

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