

# Determinants of Fear of Childbirth in Pregnant Women with a History of Cesarean Delivery

## Sezaryen Doğum Öyküsü Olan Gebelerde Doğum Korkusunun Belirleyicileri

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### Abstract

**Objectives:** In this study, it was aimed to examine the fear of childbirth (FOC) and the factors associated with FOC in pregnant women who had a history of cesarean section in their previous pregnancies.

**Materials and Methods:** The study included pregnant women who were followed up in the pregnant outpatient clinic, had a history of previous cesarean section, and were between the 24<sup>th</sup> and 40<sup>th</sup> weeks of their current pregnancies. A sociodemographic and clinical information form, which included information about age, education level, current pregnancy and previous pregnancies, psychiatric and internal disease history, and sexual functions, was filled in for all pregnant women in the study. All pregnant women completed the Beck depression inventory (BDI) and Beck anxiety inventory (BAI).

**Results:** One hundred and thirty-one pregnant women were included in the study and 74.4% of them declared that they experienced significant FOC. It was determined that the pregnant women with FOC experienced statistically significantly more fear during vaginal examination, reported pain/contraction during sexual intercourse, expressed fear that they would experience pain/contraction during sexual intercourse and higher scores of BDI, BAI. In logistic regression analysis, it was found that education level, fear in vaginal examination, and fear of pain during sexual intercourse predicted the FOC.

**Conclusion:** A high rate of FOC is also seen in pregnant women with a history of cesarean section, and vaginismus is an important risk factor for FOC in these women. Questioning vaginismus in all pregnant women will contribute to both pregnancy follow-ups and decreasing the rates of elective cesarean section.

**Key Words:** Cesarean Section, Fear Of Childbirth, Pregnancy, Vaginismus

### Öz

**Amaç:** Bu çalışmada önceki gebeliklerinde sezaryen doğum öyküsü olan gebelerdeki doğum korkusu ve doğum korkusu ile ilişkili etkenlerin incelenmesi amaçlanmıştır.

**Gereç ve Yöntem:** Çalışmaya gebe polikliniğinde takip edilen, daha önce sezaryen doğum öyküsü olan ve şimdiki gebeliklerinin 24.-40. haftaları arasında olan gebeler dahil edildi. Çalışmaya dahil edilen tüm gebeler için yaş, eğitim düzeyi, şimdiki gebelik ve önceki gebelikler ile ilgili bilgiler, psikiyatrik ve dahili hastalık öyküsü, cinsel işlevlerle ilgili bilgilerin olduğu sosyodemografik bilgi formu dolduruldu ve klinik bilgileri kaydedildi. Tüm gebeler Beck depresyon ölçeği (BDÖ), Beck anksiyete ölçeğini (BAÖ) doldurdular.

**Bulgular:** Çalışmaya 131 gebe dahil edildi ve %74,4'ü doğum korkusu yaşadıklarını beyan etti. Doğum korkusu yaşayan gebelerin istatistiksel olarak anlamlı oranda daha fazla vajinal muayene sırasında korku yaşadığı, cinsel ilişki sırasında ağrı/kasılma bildirdiği ve cinsel ilişki sırasında ağrı/kasılma

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yaşayacağına dair korku ifade ettiği; BDÖ ve BAÖ puanlarının daha yüksek olduğu saptandı. Lojistik regresyon analizinde eğitim düzeyi, vajinal muayenede korku, cinsel ilişki sırasındaki ağrı korkusunun doğum korkusunu predikte ettiği bulundu.

**Sonuç:** Sezaryen öyküsü olan gebelerde de yüksek oranda doğum görülmektedir ve bu gebelerde vajinismus doğum korkusu açısından önemli bir risk faktörüdür. Vajinismusun tüm gebelerde sorgulanması hem gebelik takipleri hem de elektif sezaryen oranlarının düşürülmesine katkıda bulunacaktır.

**Anahtar Kelimeler:** Sezaryen Doğum, Doğum Korkusu, Gebelik, Vajinismus

## Introduction

Pregnancy and childbirth are the most important events in a woman's life. Women experience various emotions during their pregnancy; in addition to positive feelings about having a child, they also experience worries about themselves and their baby during pregnancy, childbirth or postpartum period. Fear of childbirth (FOC) may be present throughout the entire pregnancy, being more intense in the last trimester (1). FOC, also called tocophobia in the literature, indicates a state of anxiety beyond what is expected about what may happen at the time of birth and a clear view has not emerged as to what level it can be called a phobic reaction (2).

The frequency and severity of the FOC varies between societies (3,4). It is reported that the frequency of FOC is higher in eastern societies than in western societies (5) and the rate of FOC was found to be 42% in a study conducted in Turkey (6).

There are many risk factors for FOC, such as advanced age, low education level, low socioeconomic level, having symptoms of depression or anxiety, being nulliparous or multiparous (4,7,8). In a study, it was reported that the FOC was higher in pregnant woman who complained of pain during sexual intercourse (4). Considering that women who are afraid of experiencing pain during sexual intercourse may prefer cesarean section by avoiding vaginal delivery and it may be associated with an increase in the number of elective cesarean sections. It seems important to examine the relationship between vaginismus and FOC.

The FOC seen in pregnant women can also have many undesirable physical and psychological consequences. It has been reported that severe FOC may lead to negative consequences such as avoidance of pregnancy, termination of pregnancy, higher pain perception during delivery, an increase in the number of emergency or elective cesarean sections, postpartum depression and post-traumatic stress disorder, and problems in mother-baby attachment (9). The importance and necessity of detecting the FOC in pregnant women and appropriate intervention emerges considering the possible negative consequences.

Today, it is thought that persistent and untreated FOC may be an indication for cesarean delivery when increased rates of cesarean rate in all societies is considered (10). It is noteworthy in women who preferred cesarean delivery due to the FOC in their previous pregnancies, the FOC continued in the postpartum

period and in their subsequent pregnancies. This supports that cesarean delivery is not a solution for the FOC (11). It is important to evaluate the reasons for the choice of pregnant women who prefer cesarean section due to the increase in the number of elective cesarean sections, which is stated to be one of the important negative consequences of the FOC.

Considering that women who had a cesarean delivery in the past may also experience FOC in their current and subsequent pregnancies, it is clearly seen that these women should be evaluated in many dimensions in terms of FOC. Although there are many studies in the literature investigating the frequency and possible causes of FOC in pregnant women who are expected to give vaginal childbirth, the rate and causes of FOC have not been adequately investigated in pregnant women who know that they will also have a cesarean section in their current pregnancies due to having had a cesarean section in the past.

In this study, it was aimed to examine the FOC and the factors associated with FOC in pregnant women who had a history of cesarean section in their previous pregnancies. The hypothesis of the study is that there are several factors related with FOC in pregnant women who have a history of cesarean section in their previous pregnancies, similar to those who do not have a history of cesarean section.

## Materials and Methods

### Study Sample

The study included pregnant women who were followed up in the obstetric outpatient clinic of Dr. Zekai Tahir Burak Women's Health and Obstetrics Training and Research Hospital, had a history of previous cesarean section, and were between the 24<sup>th</sup>-40<sup>th</sup> weeks of their current pregnancies. The pregnant women were informed about the study. After they agreed to participate in the study they signed the informed consent form. There was no exclusion criteria in the study. The study was approved the ethics committee of Dr. Zekai Tahir Burak Women's Health Training and Research Hospital (date: 27.05.2013, approval no: 41).

### Procedure

Socio-demographic information form was filled in for all pregnant women included in the study and their clinical information was recorded. The sociodemographic information form includes information about age, education level, current

pregnancy and previous pregnancies, history of psychiatric and internal diseases, and sexual functions. All pregnant women completed the Beck depression inventory (BDI) (12,13), and Beck anxiety inventory (BAI) (14,15).

### Statistical Analysis

The analysis of the data was made with the SPSS 26 program and it was studied with a confidence level of 95%. Skewness and kurtosis values were calculated to examine the compliance of inventory scores, demographic and pregnancy-related variables with normal distribution. The obtained kurtosis and skewness values between +3 and -3 are considered sufficient for the normal distribution (16,17). According to the results, demographic/pregnancy-related variables and BAI and BDI scores showed normal distribution. For categorical variables, the data left blank by the pregnant women were accepted as missing data and analyzes were made accordingly. N (%) statistics are given for categorical (qualitative) variables, mean and standard deviation (mean $\pm$ SD) statistics are given for numerical (quantitative) variables.

Chi-square test was used for categorical variables and t-test was used for continuous variables in the comparison of groups with and without FOC. Factors affecting FOC were analyzed with the Logistic Regression test and  $p < 0.05$  was considered statistically significant.

### Results

The study included 131 pregnant women who had a history of previous cesarean section, and were between the 24<sup>th</sup>-40<sup>th</sup> weeks of their current pregnancies. The mean age of the sample was 29.48 $\pm$ 5.52. Of the women, 22.7% were under the age of 25, 25.82% were between the ages of 25-29, 31.8% were between the ages of 30-34, and 19.7% were aged 35 and over. The mean week of gestation was 32.45 $\pm$ 4.66. The gestation week was below 32 weeks in 36.1%, between 32-36 weeks in 39.8%, and between 37-40 weeks in 24.1% of pregnant women.

There was a history of curettage in 20.0% of the pregnant women, abortion in 32.3%, and stillbirth in 12.0%. In the whole sample, there were 18 (13.5%) pregnant women who had a vaginal delivery in one of their previous pregnancies.

While pregnant women having been examined five or less times during pregnancy constitute 12% of the sample; the rate of pregnant women who had six or more examinations was 88%. 49.6% of the pregnant women stated that they had at least one vaginal examination during their follow-up, and 54.4% of the pregnant women who had a vaginal examination reported that they experienced fear during vaginal examination. 14.5% of women received training on pregnancy and childbirth during pregnancy. Socio-demographic and pregnancy-related variables are shown in Table 1.

When pregnant women with and without FOC were compared, it was found that pregnant women with FOC experienced statistically significantly more fear during vaginal examination, reported pain/contraction during sexual intercourse, and fear of experiencing pain/contraction during

**Table 1: Socio-demographic and pregnancy-related variables**

	Mean $\pm$ SD
Age	29.48 $\pm$ 5.52
Duration of marriage	97.07 $\pm$ 45.79
Gestational week	32.45 $\pm$ 4.66
Total number of pregnancies	3.13 $\pm$ 1.3
Number of examinations during pregnancy	9.21 $\pm$ 4.11
Beck depression inventory	15.3 $\pm$ 10.23
Beck anxiety inventory	10.74 $\pm$ 6.73
	N (%)
Level of education	
Middle school and below	65 (49.6)
High school and above	66 (50.4)
Working status	
Yes	14 (10.5)
No	119 (89.5)
History of internal disease	
Yes	32 (24.8)
No	97 (75.2)
History of psychiatric disease	
Yes	17 (13)
No	114 (87)
Having problems in previous childbirths	
Yes	40 (30.1)
No	93 (69.9)
Having problems with the current pregnancy	
Yes	54 (40.9)
No	78 (59.1)
Vaginal examination during pregnancy	
Yes	66 (49.6)
No	67 (50.4)
Experiencing fear in the vaginal examination during pregnancy	
Yes	37 (56.9)
No	28 (43.1)
Pain/contraction during sexual intercourse	
Yes	66 (50.4)
No	65 (49.6)
Fear of pain during sexual intercourse	
Yes	58 (45.7)
No	69 (54.3)
Declaration of fear of childbirth	
Yes	99 (74.4)
No	34 (25.6)
Reasons for fear of childbirth*	
Possible complications with the mother	68 (68.7)
Possible medical problem in the baby	48 (48.5)
Other	18 (18.2)

\*Multiple choice question  
SD: Standard deviation

sexual intercourse ( $p<0.05$ ). Anxiety and depression inventory scores are significantly higher in women who are afraid of childbirth. There was no difference between the two groups in terms of other variables. The analyzes comparing the socio-demographic characteristics and pregnancy-related variables of pregnant women with and without FOC are shown in Table 2.

In the logistic regression analysis to evaluate the factors determining the FOC; level of education, fear of vaginal examination, fear of pain during sexual intercourse affect the FOC statistically significantly ( $p<0.05$ ). It was determined that the FOC was 11.0 times higher in those with a secondary school education level and below, 11.5 times more in those who was afraid of vaginal examination, and 28.1 times more in those who were afraid of pain during sexual intercourse. The effect of other variables on FOC was not statistically significant ( $p>0.05$ ) (Table 3).

## Discussion

In this study, it was aimed to evaluate the risk factors associated with FOC in pregnant women with a history of cesarean section in the past. In clinical practice, it has been observed that women with a history of cesarean section in their previous pregnancies also have concerns about what may happen at the time of delivery in their subsequent pregnancies, and they have fears about childbirth. The continuation of FOC in the subsequent pregnancies of women who preferred cesarean section due to FOC coincides with these clinical observations (11).

In studies about FOC in pregnant women in many countries, including our country, the severity of FOC is evaluated using the A version scale of the WIJMA Delivery Expectation/Experience Questionnaire. Since pregnant women with a history of cesarean section in the past were not included in the sample of the study in which this questionnaire was developed, it cannot be used to evaluate the severity of FOC in this group (18,19). WIJMA-A is the only questionnaire whose validity-reliability studies have been conducted to evaluate the FOC in our country (19). The study was conducted in accordance with the original questionnaire and pregnant women with a history of cesarean section were not included in the study. Of the 131 pregnant women included in our study who had a history of cesarean section in the past, 74.4% stated that they were afraid of childbirth. Although the severity of the FOC of the pregnant women in this sample cannot be evaluated objectively, it is seen that the rate of FOC is higher than other studies conducted in Turkey (6,20).

It is stated in the literature that there are many risk factors for FOC such as advanced age, low education level, low socioeconomic level, having symptoms of depression or anxiety,

being nulliparous or multiparous (4,7,8). While it is thought that the lack of experience about childbirth in primiparous women plays a role in the FOC, it has been suggested that past negative childbirth experiences in multiparous women cause FOC in subsequent pregnancies (21,22). The high rate of FOC in this study conducted with multiparous pregnant women with a history of cesarean section may suggest that past negative experiences of cesarean section may cause FOC. However, the fact that there was no difference between the two groups with and without FOC in terms of experiencing medical problems in previous pregnancies indicates that the FOC is not related to procedures or complications during previous deliveries. Despite the previous cesarean section experience, which was perceived as uneventful by the pregnant, it comes to mind that the pregnant women who have FOC in their current pregnancies may also have experienced FOC in their previous pregnancies and may have preferred cesarean delivery because of the FOC. Although the reasons for the previous cesarean section of the pregnant women are not known in this study, it is estimated that the study population includes a group of women who preferred cesarean section in their previous pregnancies due to FOC. Continuing to have FOC in the subsequent pregnancy despite a perceived uneventful past cesarean section experience suggests that the experience of cesarean section does not have a positive effect on the FOC in subsequent pregnancies. This result seems to be compatible with studies reporting that cesarean section is not a solution for FOC (11).

Another risk factor of FOC is vaginismus. In a study, the rate of painful sexual intercourse was found to be 29.6% in the whole group and experiencing moderate to severe dyspareunia in the first intercourse in multiparous women was found to be one of the predictors of the FOC (4). Vaginismus/genital-pelvic pain/penetration disorder (DSM-5) is described as persistent or recurrent difficulty with vaginal penetration, pain during vaginal intercourse, fear of experiencing vulvovaginal pain during or where penetration is anticipated, or marked tension/contraction of the pelvic floor muscles during vaginal penetration attempt (23).

Vaginismus/genital-pelvic pain/penetration disorder is also considered as a reflex contraction of the pelvic floor muscles associated with the phobic avoidance response in situations such as vaginal delivery and vaginal examination which are thought to cause pain in addition to the one experienced during sexual intercourse (24). It is also reported that women with vaginismus may neglect their routine pregnancy examinations due to the fear of experiencing pain during vaginal examination (24), and they may prefer cesarean section at a higher rate due to the fear of experiencing pain during vaginal delivery (25-27). If vaginismus is overlooked or untreated, it may lead to a cesarean section decision without a medical indication. In

**Table 2: Comparison of pregnant women with and without fear of childbirth in terms of socio-demographic characteristics, pregnancy-related variables and clinical features**

	Fear of childbirth (+) Mean $\pm$ SD	Fear of childbirth (-) Mean $\pm$ SD	t	p <sup>a</sup>
Age	29.36 $\pm$ 5.51	30.12 $\pm$ 5.6	-0.691	0.491
Marriage duration (months)	99.15 $\pm$ 45.11	93.18 $\pm$ 48.48	0.654	0,514
Gestational week	32.73 $\pm$ 4.52	31.82 $\pm$ 5.07	0.974	0.332
Number of examinations during pregnancy	9.26 $\pm$ 4.14	9.06 $\pm$ 4.09	0.248	0.804
Total number of pregnancies	3.07 $\pm$ 1.26	3.35 $\pm$ 1.41	-1,095	0.276
BAI	16.52 $\pm$ 10.77	11.76 $\pm$ 7.56	2,813	0.006*
BDI	11.32 $\pm$ 7.16	9.06 $\pm$ 5.03	2,017	0.047*
	N (%)	N (%)	$\chi^2$	p <sup>b</sup>
Level of education				
Middle school and below	50 (76.9)	15 (23.1)	0.298	0.585
High school and above	47 (71.2)	19 (28.8)		
History of internal disease				
Yes	21 (65.6)	11 (34.4)	1,169	0.280
No	75 (77.3)	22 (22.7)		
History of psychiatric disease				
Yes	12 (70.6)	5 (29.4)	0.017	0.896
No	86 (75.4)	28 (24.6)		
Curettage				
Yes	16 (80)	4 (20)	0.116	0.733
No	83 (73.5)	30 (26.5)		
Miscarriage				
Yes	29 (67.4)	14 (32.6)	1,136	0.287
No	70 (77.8)	20 (22.2)		
Vaginal delivery				
Yes	12 (66.7)	6 (33.3)	0.273	0.602
No	87 (75.7)	28 (24.3)		
Stillbirth				
Yes	11 (68.8)	5 (31.3)	0.063	0.802
No	88 (75.2)	29 (24.8)		
Vaginal examination during pregnancy				
Yes	52 (78.8)	14 (21.2)	0.889	0.346
No	47 (70.1)	20 (29.9)		
Experiencing fear in the vaginal examination during pregnancy				
Yes	33 (89.2)	4 (10.8)	4,624	0.032*
No	20 (64.5)	11 (35.5)		
Education during pregnancy				
Yes	14 (73.7)	5 (26.3)	0.001	0.999
No	83 (74.1)	29 (25.9)		
Pain/contraction during sexual intercourse				
Yes	59 (89.4)	7 (10.6)	12,297	<0.001*
No	40 (61.5)	25 (38.5)		
Fear of pain during sexual intercourse				
Yes	51 (87.9)	7 (12.1)	8,521	0.004*
No	44 (63.8)	25 (36.2)		
Having medical problems in previous pregnancies				
Yes	31 (77.5)	9 (22.5)	0.099	0.753
No	68 (73.1)	25 (26.9)		
Medical problem in current pregnancy				
Yes	41 (75.9)	13 (24.1)	0.001	0.999
No	58 (74.4)	20 (25.6)		

<sup>a</sup>: t-test in independent groups, <sup>b</sup>: Chi-square test, BDI: Beck depression inventory, BAI: Beck anxiety inventory

**Table 3: Risk factors of fear of childbirth (logistics regression analysis)**

Variable	B	se.	p	Odds ratio	95% CI Odds		Wald
					Lower	Higher	
Age	-0.601	0.631	<b>0.341</b>	0.548	0.159	1,888	0.907
Marriage duration (months)	0.349	0.512	<b>0.495</b>	1,418	0.520	3,865	0.466
Gestational week	-0.365	0.518	<b>0.481</b>	0.694	0.251	1,916	0.497
Total number of pregnancies	-0.293	0.547	<b>0.592</b>	0.746	0.255	2,179	0.287
BAI	0.892	0.652	<b>0.171</b>	2,440	0.680	8,751	1,874
BDI	-0.005	0.841	<b>0.995</b>	0.995	0.191	5,177	0.000
Education level (Secondary school and below)	2,402	1,109	<b>0.030*</b>	11,041	1,257	96,978	4,693
History of internal disease (Yes)	0.695	1,055	<b>0.510</b>	2,004	0.253	15,853	0.434
Problem in current pregnancy (Yes)	-1,350	0.926	<b>0.145</b>	0.259	0.042	1,592	2,126
Fear of vaginal examination (Yes)	2,445	1,143	<b>0.032*</b>	11,525	1,226	108,309	4,573
Pain/contraction during sexual intercourse (Yes)	-1,487	1,214	<b>0.221</b>	0.226	0.021	2,441	1,500
Fear of pain during sexual intercourse (Yes)	3,337	1,432	<b>0.020*</b>	28,130	1,700	465,453	5,432

\*p<0.05, BDI: Beck depression inventory, BAI: Beck anxiety inventory, CI: Confidence interval

this study, it was determined that the rates of fear of vaginal examination during pregnancy, pain during sexual intercourse, contraction and fear of pain during sexual intercourse were higher in those with FOC. In addition, it was determined that experiencing pain during vaginal examination and fear of experiencing pain during sexual intercourse were the predictors of FOC. The fact that vaginismus-related conditions were seen at a higher rate in pregnant women and that these factors were predictors of FOC in this study suggests that these pregnant women may have preferred cesarean section in their previous pregnancies because of fear of vaginal delivery. This reveals the importance of screening for vaginismus symptoms in pregnant women. In addition, the importance of considering vaginismus should not be overlooked in pregnant women who do not come for pregnancy follow-ups and who show avoidance behavior related to vaginal examination.

When the pregnant women with and without FOC were compared, it was observed that depression and anxiety scores were higher in those with FOC. It has been stated in the literature that high depression and anxiety scores are risk factors for FOC (28). Another risk factor reported to be associated with FOC in the literature is low education level (29) and it was found that the level of education is a predictor of the FOC in pregnant women with secondary school and below education in this study.

### Study Limitations

The limitations of the study include not knowing the indications for cesarean section in previous pregnancies and not conducting a psychiatric evaluation with the pregnant women in order to diagnose vaginismus.

### Conclusion

Considering the results of the study, it is seen that pregnant women with a history of cesarean section have a high rate of FOC and similar risk factors as those without a history of cesarean section. For this reason, it is important to question the FOC in all pregnant women, regardless of the planned delivery method, and to try to determine the factors that cause and maintain the FOC. Although there is a new scale which was developed to evaluate the FOC by including pregnant women with a history of cesarean section (10), in our country there is no valid and reliable scale evaluate the FOC in pregnant women with a history of cesarean section. For future studies, it seems important to introduce new scales into Turkish that will guide the evaluation of FOC in pregnant women with a history of cesarean section.

Another important finding of this study that the high rate of FOC was related with vaginismus in pregnant women who know that they will have a cesarean section because of history of previous cesarean section. This reveals the importance of questioning the symptoms of vaginismus in pregnant women who preferred cesarean section in their past or current pregnancies. Diagnosing vaginismus in pregnant women who may have had an elective cesarean section in their previous pregnancies to avoid vaginal delivery may not only enable the treatment of this sexual dysfunction, but also provide support for pregnant women who may neglect routine pregnancy examinations in order to avoid vaginal examination due to fear of pain, and enable them to have regular pregnancy follow-up.

## Ethics

**Ethics Committee Approval:** The study was approved the ethics committee of Dr. Zekai Tahir Burak Women's Health Training and Research Hospital (date: 27.05.2013, approval no: 41).

**Informed Consent:** After they agreed to participate in the study they signed the informed consent form.

**Peer-reviewed:** Externally peer-reviewed.

## Authorship Contributions

Surgical and Medical Practices: E.Ö.E., M.İ.Y., Concept: E.Ö.E., M.İ.Y., D.Ş., Design: E.Ö.E., M.İ.Y., D.Ş., Data Collection or Processing: E.Ö.E., M.İ.Y., Analysis or Interpretation: E.Ö.E., M.İ.Y., D.Ş., Literature Search: E.Ö.E., M.İ.Y., Writing: E.Ö.E., M.İ.Y., D.Ş.

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