

# Fear of Childbirth and Breastfeeding Self-Efficacy and Predictors of Breastfeeding Self-Efficacy in Pregnant Women

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Received: 2023-11-07

Accepted: 2024-01-30

Published Online: 2024-01-30

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This study was presented in the 2nd  
International 4th National Birth  
Preparation Education and Training  
Congress held in Izmir in October 2022.



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## ABSTRACT

**Objective:** The purpose of this study was to determine the relationship between the fear of childbirth (FOC) and prenatal breastfeeding self-efficacy, the factors affecting them, and the factors that predict breastfeeding self-efficacy among Turkish pregnant women.

**Methods:** The research was a descriptive and cross-sectional type. The study was conducted with 228 pregnant women who came to the obstetrics outpatients' department at 28-40 weeks of gestation. Data were collected using an Individual Description Form, the Wijma Delivery Expectancy/Experience Scale (W-DEQ), and the Prenatal Breastfeeding Self-Efficacy Scale (PBSES).

**Results:** The mean age of the pregnant women was 28.09±4.29. The W-DEQ scores of the pregnant women were 66.50±11.38, and their PBSES scores were 63.71±4.43. More than half of the pregnant women (59.1%) experienced severe and clinical FOC. Prenatal breastfeeding self-efficacy was significantly lower in pregnant women with severe and clinical FOC compared with those with mild and moderate FOC ( $p<0.001$ ). There was a very low level negative correlation between FOC and PBSES ( $r=-0.277$ ,  $p<0.001$ ). W-DEQ, education level, duration of marriage, feeling about pregnancy and duration of breastfeeding were determined as predictors of PBSES ( $p<0.05$ ,  $R^2:0.472$ ).

**Conclusion:** It was found that the majority of pregnant women experienced levels of severe and clinical FOC and their prenatal breastfeeding self-efficacy perceptions were moderate. Health professionals should provide education and counseling to pregnant women to reduce the fear of childbirth experienced by pregnant women and to improve their prenatal breastfeeding self-efficacy. In this way, mother-child health will be protected both during pregnancy and in the postnatal period.

**Keywords:** Fear of childbirth, fear, pregnant women, breastfeeding, breastfeeding self-efficacy.

## INTRODUCTION

Birth is a time in motherhood when physical, psychological, and social changes take place [1]. Women have both positive and negative expectations and experiences of pregnancy and birth. This is because pregnancy and birth include many factors such as happiness, pain, expectations, and experiences. Pregnant women may experience fear of birth for such reasons as being

in an unfamiliar environment, not being able to protect their privacy, or not being able to manage the birth process [1, 2]. Fear of childbirth (FOC) has been defined as anxieties about birth which upset a pregnant woman's daily life and health [3]. Fear of childbirth is a complex and multi-directional problem relating to a pregnant woman's specific birth experiences and expectations [1, 4]. Determining the factors relating to FOC and

at-risk pregnant women is important for establishing suitable interventions. Increased fear relating to birth may cause such problems as an increase in the severity of pain, a lengthening of the birth process, and the use of anesthesia [3, 5]. It has been reported that not receiving education and counseling before giving birth and having negative perceptions and experiences regarding birth increase the FOC [6, 7]. It has been reported in studies that 20.8-86% of pregnant women [6, 8-10], and in Türkiye 47-70.4%, experience FOC of varying severity and clinical levels [4, 11]. FOC can reach a mild clinical level and can cause an extension of the birth process [5, 10].

Breastfeeding self-efficacy is a woman's thoughts on breastfeeding, whether or not to choose to breastfeed, the emotional and psychosocial difficulties experienced, and the skill of coping with these difficulties [12-15]. Pregnancy is a time when many physiological, psychological, and social changes are experienced. One of the topics that it is important to pay attention to during pregnancy is breastfeeding. The period of pregnancy is important for most women's breastfeeding because they decide the time before birth and how they will feed their babies [7, 16]. Breastfeeding is more preferred by women with high self-efficacy [14-16]. Pregnant women's self-efficacy regarding breastfeeding affects the suckling process. Women with high breastfeeding self-efficacy show a more positive attitude to problems that they encounter with breastfeeding [15, 17, 18]. It has been reported in studies that when the Prenatal Breastfeeding Self-Efficacy Scale (PBSES) was applied to pregnant women, they had a prenatal breastfeeding self-efficacy at a medium or high level of 70-112 [15, 19, 20-23], and it is reported that pregnant women in Türkiye

generally have prenatal breastfeeding self-efficacy at a medium level [18, 19, 24]. It has been reported that women's breastfeeding self-efficacy is higher in women with a high education or income level and increasing age, and in those with a greater number of children. It can therefore be said that a country's sociocultural and economic differences affect women's prenatal breastfeeding self-efficacy [15, 18, 19, 23, 25]. Low breastfeeding self-efficacy can cause women to leave breastfeeding early and shorten the period of breastfeeding, and can hurt breastfeeding success and the breastfeeding process [15, 17, 18, 26]. Breastfeeding is the perfect way of strengthening the bond between mother and baby, and of providing the baby with mother's milk, for which there is no alternative [27]. For this reason, pregnant women's breastfeeding self-efficacy is important and should be evaluated.

The emotional and psychological changes experienced during the birth process also affect prenatal breastfeeding self-efficacy. Studies have reported that women who have experienced anxiety and depression during pregnancy leave breastfeeding early and that it reduces their will to breastfeed [28-30]. FOC is also a significant emotional symptom experienced in pregnancy and is an important factor affecting coping with difficulties [31, 32]. Thus, there is a possibility of a fall in the breastfeeding self-efficacy of pregnant women who have an FOC, a reduction in their willingness to breastfeed and a reduction in the length of time they breastfeed. In this regard, determining FOC and breastfeeding self-efficacy during pregnancy and establishing the predictors affecting breastfeeding self-efficacy will allow the identification of pregnant women with a high FOC or who are at risk regarding starting to breastfeed or leaving off early, and allow health care providers to perform more holistic care and interventions with pregnant women. Also, healthcare providers (especially nurses and midwives) will be able to allow pregnant women with an FOC to have more positive birth experiences, to be more willing to breastfeed, and to extend the period of breastfeeding in light of this information. Healthcare providers (especially nurses and midwives) will be able to give education and counselling to pregnant women, to raise their breastfeeding self-efficacy, and reduce their fear of birth. This will contribute to mother and child health.

We aimed to determine the relationship between the fear of childbirth and prenatal breastfeeding self-efficacy, the factors affecting them, and the factors that predict breastfeeding self-efficacy among Turkish pregnant women.

### Main Points:

- Fear of childbirth affects more than half of pregnancies in Türkiye and only 41% of women breastfeed in the first six months postpartum. Poor fear of childbirth control leads to poor prenatal and postnatal breastfeeding self-efficacy, and to poor maternal and neonatal outcomes.
- Our study provides basic recommendations regarding prenatal management of women with fear of childbirth, its effect on prenatal breastfeeding self-efficacy, and the factors that predict prenatal breastfeeding self-efficacy. The study contributes to increasing the awareness of healthcare providers about fear of childbirth and prenatal breastfeeding self-efficacy and influencing factors.

## MATERIALS AND METHODS

A descriptive and cross-sectional study was conducted with pregnant women at 28-40 weeks of gestation who came for routine control to the obstetrics outpatients' department of a training and research hospital in İzmir in western Türkiye between July and September 2022. The population of the study consisted of 1032 pregnant women who came to the obstetrics outpatients' department for routine control between January and December 2021. A total of 284 pregnant women were invited to participate in this study. Among the pregnant women, seven had multiple pregnancies, eight had their babies transferred to another hospital, five had a diagnosis of psychiatric illness in the previous six months, 11 had a communication barrier, eight were illiterate, five left the answers to the questions incomplete, and 12 were not included in the study because they did not agree to participate voluntarily.

The sample of the study finally consisted of 228 pregnant women (80.3%) who came to the obstetrics outpatients' department for routine control, were in the 28-40th gestational week, had a single healthy fetus, did not have a risky pregnancy, had no condition that prevented breastfeeding, did not have a diagnosis of psychiatric disease, spoke Turkish, were literate and volunteered to participate in the study between July and September 2022. A simple random sampling method was used for the pregnant women.

The power of the study was calculated using the program G.Power-3.1.9.2. At the end of the study, post-hoc power analyses showed that with an effect size of 0.80, a 95% confidence interval and 5% error for the multiple linear regression analyses, results showed that 228 pregnant women were sufficient to complete the study, and the power of the study calculated as post-hoc was calculated as 1.00 [33].

The data of the study were collected using an Individual Description Form, the Wijma Delivery Expectancy/Experience Scale (W-DEQ) version A, and the Prenatal Breastfeeding Self-Efficacy Scale (PBSES). All forms were given by face-to-face interview and filled out by the patients. The completion of forms took approximately 20 minutes. The Individual Description Form was prepared by the researchers based on previous studies [8, 10, 15, 17, 20, 24]. The form consisted of 16 questions about the socio-demographic, obstetric, and breastfeeding characteristics of the pregnant women.

The Wijma Delivery Expectancy/Experience Scale (W-DEQ version A) was developed by Wijma, Wijma, and Zar [34] in 1998 to measure the fear of childbirth (FOC) experienced by pregnant women. The scale consists of 33 items. The scale is of a six-way Likert type. Scores on the scale range between 0 and 165. A high total score indicates a high level of FOC. A score of  $\leq 37$  indicates mild FOC, 38-65 indicates moderate FOC, 66-84 indicates severe FOC, and  $\geq 85$  indicates clinical FOC [34]. The Turkish validity and reliability of the scale were tested by Körükcü, Kukulcu, and Firat [35] in 2012. The Cronbach alpha value of the scale was 0.89. In this study, the Cronbach alpha value of the scale was 0.81.

The Prenatal Breastfeeding Self-Efficacy Scale (PBSES) was developed by Wells, Thompson, and Kloebler-Tarver [21] in 2006 to determine the breastfeeding self-efficacy perceptions of pregnant women. The scale consists of 20 items, and is a five-way Likert type scale. Scores range from 20 to 100, the highest perceived self-efficacy. The scale has four subgroups. These are skills and demands required for breastfeeding (8 items), gathering information about how to breastfeed (5 items), breastfeeding around other people and feelings of embarrassment during breastfeeding (4 items), and social pressure when breastfeeding (3 items). The Cronbach alpha value of the scale was found to be 0.89 [21]. The Turkish validity and reliability of the scale was tested by Aydın and Pasinlioğlu [20] in 2018. The Cronbach alpha value of the scale was 0.85. In this study, the Cronbach alpha value of the scale was 0.79.

After obtaining ethical approval from the university and the study hospital, the first researcher contacted the relevant nursing and midwifery departments at the hospital, asking for to support in this study. The researchers interviewed pregnant women who came to the obstetrics outpatients' department of a training and research hospital for routine control. Before handing out the forms, the researchers gave explanations about the purpose of the study, the benefits to be obtained from the research and the time they would spend for the interview, and obtained verbal and written consent from the pregnant women. Informed consent was obtained from all of the women included in the study. After signing the consent forms, the pregnant women who were recruited filled out the individual description form, the Turkish version of W-DEQ and the PBSES. Filling out the forms took approximately 20 minutes. Researchers were available to explain the pregnant women's questions. All forms were given by face-to-face interview and filled out by the pregnant women.

Before the study was conducted, ethical approval was obtained from Izmir Katip Çelebi University Non-Interventional Clinical Research Ethics Committee (Decision No: 0267, Date: 26.05.2022) and permission was obtained from the hospital where the study was conducted (Decision No: 2022/72, Date: 07.07.2022). The women were informed about the research, and their verbal and written informed consent was obtained. The research was conducted in accordance with the principles of the Declaration of Helsinki.

### Statistical Analysis

The analysis of the data obtained from the research was carried out in the SPSS 25.0 statistical program package. The conformity of the data to normal distribution was evaluated using the kurtosis and skewness values and the Kolmogorov-Smirnov test. Categorical variables were presented as numbers (n) and percentages (%), and continuous variables were described using means and standard deviations (SD) (min-max). The difference between the groups according to the scale scores was examined with a t-test (two groups) and the One-Way ANOVA test (three or more groups). Pearson correlation analysis was used to show the relationship between W-DEQ and PBSES. A multiple linear regression model was established to evaluate the effect of independent variables on the PBSES score. In addition, Multiple Linear Regression Analysis was performed to determine the predictors of PBSES. To calculate the effect size coefficient of determinations in the linear models, we employed

$R^2$  (Coefficient of determination). The results were evaluated at the 95% confidence interval and the significance level of  $p < 0.05$ .

### RESULTS

The socio-demographic, obstetric, and breastfeeding characteristics of the pregnant women are shown in Table 1. The mean age of the total of 228 pregnant women included in this study was  $28.09 \pm 4.29$  years, and the mean of their gestational weeks was  $32.48 \pm 2.22$  weeks. A majority of the women had a low educational level (71.1%), 65.4% were nonworking, 84.6% were living in a nuclear family, 76.8% had a low income, and 69.3% were multiparous.

Women with a lower level of education ( $p=0.004$ ), and their partners ( $p<0.001$ ), those with a low level of income ( $p=0.041$ ), those who were primiparous ( $p=0.003$ ) or had not given birth before ( $p=0.009$ ), those with no breastfeeding experience ( $p=0.007$ ), and mothers with 0-6 months of previous breastfeeding experience ( $p=0.007$ ) had a significantly higher FOC (Table 1). Women with a lower level of education ( $p<0.001$ ), and their partners ( $p<0.001$ ), those who lived in an extended family ( $p=0.010$ ), those in the first ten years of marriage ( $p<0.001$ ), those who felt uncertain about pregnancy ( $p=0.008$ ), those for whom the baby's gender didn't matter and those who wanted a baby girl ( $p<0.001$ ), and those who had not given birth before ( $p=0.043$ ) had a significantly lower PBSES score (Table 1).

**Table 1.** Comparison of socio-demographic, obstetrics and breastfeeding characteristics according to W-DEQ and PBSES scores

	Mean±SD		W-DEQ		PBSES	
			r	p	r	p
Age	28.09±4.29		0.023	0.733	0.004	0.955
Gestational week	32.48±2.22		-0.123	0.064	0.010	0.887
	n	%	Mean±SD	Test-p	Mean±SD	Test-p
<b>Education</b>						
Under high school	162	71.1	67.93±10.92	t=2.944	62.98 ±4.34	t=4.079
High school and above	66	28.9	62.96±11.81	<b>p=0.004</b>	65.50±4.16	<b>p&lt;0.001</b>
<b>Partner' Education</b>						
Under high school	102	44.7	69.15±9.48	t=3.325	62.33 ±4.32	t=-4.392
High school and above	126	55.3	64.34±12.34	<b>p&lt;0.001</b>	64.83±4.21	<b>p&lt;0.001</b>
<b>Work</b>						
Working	79	34.6	66.79±11.98	t=0.280	63.91 ±3.19	t=0.553
Not working	149	65.4	66.34±11.09	p=0.780	63.61±4.96	p=0.581

<b>Family type</b>						
Nuclear	193	84.6	66.58±11.53	t=0.263	64.08 ±4.23	t=2.685
Extended	35	15.4	66.05±10.67	p=0.793	61.68±4.96	<b>p=0.010</b>
<b>Income</b>						
Low	175	76.8	67.40±10.98	t=2.075	63.59±4.56	t=-0.801
Middle	53	23.2	63.50±12.25	<b>p=0.041</b>	64.11±3.99	p=0.425
<b>Marriage duration (year)</b>						
1-5	126	55.3	66.01±9.01	F=0.262	63.27±3.81	F=6.787
6-10	86	37.7	67.12±13.48	p=0.770	63.65±5.08	<b>p&lt;0.001</b>
11 and above	16	7.0	67.00±15.79		67.50±3.51	
<b>Pregnancy</b>						
Primiparous	70	30.7	69.11±5.76	t=3.039	63.41±3.93	t=-0.725
Multiparous	158	69.3	65.34±12.97	<b>p=0.003</b>	63.84±4.63	p=0.469
<b>Planning pregnancy</b>						
Yes	170	74.6	66.91±10.98	t=0.877	64.56±4.66	t=-1.644
No	58	25.4	65.29±12.51	p=0.383	63.42±4.32	p=0.104
<b>Do want pregnancy</b>						
Yes	196	86.0	66.52±11.45	t=0.068	63.68 ±4.47	t=-0.229
No	32	14.0	66.37±11.09	p=0.946	63.87±4.22	p=0.820
<b>Feeling about pregnancy</b>						
Positive	165	72.4	66.40±10.08	t=-0.184	64.15±4.59	t=2.696
Uncertain	63	27.6	66.76±14.34	p=0.855	62.55±3.76	<b>p=0.008</b>
<b>Desired gender</b>						
Girl	47	20.6	63.63±10.12	F=1.921	65.14±4.27	F=8.705
Boy	23	10.1	66.65±12.82	p=0.149	66.08±4.50	<b>p&lt;0.001</b>
It does not matter	158	69.3	67.32±11.45		62.94±4.26	
<b>Desired mode of birth</b>						
Vaginal	112	49.1	67.38±10.24	t=1.157	63.86±4.53	t=0.505
Cesarean section	116	50.9	65.64±12.37	p=0.249	63.56±4.34	p=0.614
<b>Breastfeeding experience</b>						
Yes	131	57.5	64.90±13.81	t=-2.737	64.19±4.55	t=1.950
No	97	42.5	68.64±6.31	<b>p=0.007</b>	63.06±4.19	p=0.052
<b>Breastfeeding duration*</b>						
0-6 months	53	40.5	68.88±10.43	F=5.195	62.77±4.10	F=8.322
7-12 months	62	47.3	61.32±16.52	<b>p=0.007</b>	63.62±3.24	<b>p&lt;0.001</b>
13-24 months	16	12.2	61.37±11.87		66.03±4.80	

W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire. PBSES: Prenatal Breast-Feeding Self-Efficacy Scale. SD: Standard deviation. r: Pearson correlation test. t: Independent two sample 't' test. F: One-Way Anova Test \*Calculated over: n=131

In the study, the W-DEQ score was 66.50±11.38 and the PBSES score was 63.71±4.43. PBSES sub-dimension scores are given in Table 2. The criterion for severe to clinical level FOC was fulfilled by 59.1% (n=135). Prenatal breastfeeding self-efficacy is compared according to the levels of FOC in Table 3. There was a low but significant level of negative correlation between FOC and gathering information about how to breastfeed ( $r=-0.419$ ;  $p<0.001$ ). FOC showed a very low-level but significant negative correlation between both breastfeeding in the presence of other people and feeling embarrassed during breastfeeding ( $r=-0.278$ ;

$p=0.042$ ) and the PBSES total score ( $r=-0.277$ ;  $p<0.001$ ) (Table 3).

Finally, a multiple linear regression analysis was used to detect any variation independently related to PBSES scores (Table 4). The best-fit regression model revealed five variables that explained 47% of the variance in PBSES scores in the antenatal periods. Maternal characteristics predicting breastfeeding self-efficacy included W-DEQ, education level, marriage duration, feelings about pregnancy, and breastfeeding duration ( $p<0.05$ ,  $R^2:0.472$ ).

**Table 2.** W-DEQ and PBSES sub-dimension and total scores

Scales	Mean±SD	Min-Max
W-DEQ	66.50±11.38	36-87
PBSES	63.71±4.43	50-75
PBSES sub-dimension		
Skills and demands required for breastfeeding	24.34±2.52	18-30
Gathering information about how to breastfeed	15.50±1.71	10-20
Breastfeeding around other people and feelings of embarrassment during breastfeeding	12.74±2.22	8-17
Social pressure when breastfeeding	11.12±1.50	8-14

W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire. PBSES: Prenatal Breast-Feeding Self-Efficacy Scale. SD: Standard deviation

**Table 3.** The relationship between the W-DEQ, the levels of FOC and the PBSES sub-dimension and total scores

FOC			Skills and demands required for breastfeeding	Gathering information about how to breastfeed	Breastfeeding around other people and feelings of embarrassment during breastfeeding	Social pressure when breastfeeding	PBSES
	n	%	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Mild to moderate level ≤65*	93	40.8	24.20±2.68	16.24±1.57	13.08±1.88	11.34±1.41	64.88±4.32
Severe to clinical level ≥ 66	135	59.2	24.44±2.41	14.98±1.62	12.51±2.41	10.97±1.54	62.91±4.34
Test-p			t=-0.692 p=0.490	t=5.869 p<0.001	t=2.042 p=0.042	t=1.852 p=0.065	t=3.377 p<0.001
W-DEQ		r	0.117	<b>-0.419</b>	<b>-0.278</b>	-0.104	<b>-0.277</b>
		p	0.077	<b>p&lt;0.001</b>	<b>p&lt;0.001</b>	0.118	<b>p&lt;0.001</b>

FOC: Fear of childbirth. W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire. PBSES: Prenatal Breast-Feeding Self-Efficacy Scale SD: Standard deviation; t: Independent two sample ‘t’ test. r: Pearson correlation test.

\*Two people at mild level were added to the moderate level and seven people in the clinical level were added to the severe level.

**Table 4.** Regression analysis of the effect of socio-demeographic, obstetric and breastfeeding characteristics on PBSES scores

Independent Variables	B	Standart Error	β	t	CI 95%		R	R <sup>2</sup>	Adjusted R <sup>2</sup>	p
Constant	70.517	1.996	-	35.335	66.549	74.486	0.687	0.472	0.441	0.000
W-DEQ	-0.100	0.028	-0.301	-3.532	-0.156	0.044				0.001
Education (High school and above)	1.847	0.996	0.163	1.855	-0.133	3.827				0.067
Marriage duration (11 and above year)	3.207	1.092	0.255	2.937	1.035	5.378				0.004
Feeling about pregnancy (Uncertain)	-2.743	0.804	-0.286	-3.412	-4.343	-1.144				0.001
Breastfeeding duration (0-6 months)	2.614	0.804	0.267	3.253	1.016	4.212				0.002

B:Unstandardized Coefficient. β:Standardized Coefficient. CI: Confidence Interval. W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire. R<sup>2</sup>: Coefficient of determination. Backward selected. Excluded Variables: Partner’ education, family type, desired gender.

## DISCUSSION

More than half of the pregnant women in the study (59.1%) experienced FOC at a serious clinical level. In a study by Nieminen et al. [8], 86% of pregnant women, and in a study by Barut and Uçar [4] 70.4%, experienced FOC at a higher, more serious clinical level. Serious clinical level FOC was experienced at a lower level by 20.8% of pregnant women in a study by Salomonsson et al. [9], 47% in a study by Bülbül et al. [11], and by 42.6% in a study by Dereje et al. [6]. In the present study, the total W-DEQ score was  $66.50 \pm 11.38$ , but it was higher ( $125 \pm 18.2$ ) in the study by Nieminen et al. [8]. In the study by Salomonsson et al. [9] it was higher at  $68.5 \pm 22.4$  and in the study by Bülbül et al. [11] it was lower, at  $48.7 \pm 19.3$ . It is thought that this difference is related to cultural factors, the geographical area where studies were carried out, the women's number of pregnancies, and their view of the act of birth. Also, in the present study, the W-DEQ score of primiparous women was significantly higher than that of multiparous women. A study by Toohill et al. [10] in Australia was similar to ours. Primiparous women are about to experience birth for the first time, and this fear of the unknown regarding birth together with what they have heard in the past may have increased their FOC. In the present study, the education level of both the pregnant woman and her partner significantly increased FOC. In addition, in this study, FOC in pregnant women with a low income level was significantly higher. Hildingsson et al. [3] and Salomonsson et al. [9] reported, similar to the present study, that pregnant women with a low level of education had a greater FOC. It may be said that the reason for this is that a low income increases economic anxieties and stress and thus the fear relating to birth.

Fear of childbirth was significantly higher in women who had not previously given birth, those who had not experienced breastfeeding, and those who breastfed for only the first six months (Table 1). The fact that women who have given birth and experienced breastfeeding have more knowledge and experience about the prenatal period may have caused them to view birth more positively and have a lower FOC.

Determination of breastfeeding self-efficacy among Turkish women during pregnancy and its predictors helps to establish low breastfeeding self-efficacy at an early stage and in the postpartum period, and to identify mothers who are at risk of leaving off breastfeeding early or not breastfeeding. Determining breastfeeding self-efficacy during pregnancy will allow healthcare providers to perform more comprehensive interventions with

pregnant women, and make mothers more willing to breastfeed their babies. In this study, the total PBSES score of Turkish pregnant women was  $63.71 \pm 4.43$ , which is lower than what is reported in other studies conducted in Türkiye [18, 19, 24]. Total PBSES scores were  $72.32 \pm 13.36$  in pregnant women in Spain [23],  $112.83 \pm 20.19$  in China [15], and  $70 \pm 11.9$  in Arabia [22]. Pregnant women's breastfeeding self-efficacy was found to be lower in the present study than in other studies. Breastfeeding self-efficacy shows whether a mother will breastfeed, how much effort she will put into breastfeeding, her thoughts on breastfeeding, and her skill at coping with the difficulties she will face in the breastfeeding process [13-15]. The differences in PBSES scores may derive from receiving inadequate information on breastfeeding in antenatal classes and during pregnancy, and from the pregnant women not being ready for the breastfeeding process. We also think that the communities where the studies were conducted and the beliefs and values of pregnant women regarding breastfeeding affect prenatal breastfeeding self-efficacy.

Further, breastfeeding self-efficacy may be related to difficulties experienced in different situations during pregnancy. One of these is the fear of childbirth experienced by pregnant women. In the present study, FOC was determined as an important predictor of pregnant women's breastfeeding self-efficacy. An increase of one unit of FOC experienced by the pregnant women reduced their PBSES scores by 0.1 units ( $B = -0.100$ ). Moreover, in this study, there was a significant but very low-level negative relationship between the breastfeeding self-efficacy and the FOC of pregnant women ( $r = -0.277$ ). More than half of the women (59.1%) experienced FOC at a serious clinical level. Comparing pregnant women experiencing FOC at a serious clinical level with those experiencing it at a mild or medium level, it is seen that their breastfeeding self-efficacy was significantly lower. Fear is an important factor affecting coping with difficulties. It reduces an individual's capacity to fight and produce effective solutions and causes a feeling of hopelessness [31, 32]. Thus, breastfeeding self-efficacy may be reduced in a pregnant woman who has an FOC, the process of breastfeeding may be negatively affected, and the breastfeeding duration may be shortened. This is because breastfeeding self-efficacy is an important factor affecting the results and continuation of breastfeeding [15-18, 26]. There are studies on the effect of emotional problems such as stress and anxiety on the breastfeeding process. Shao et al. [29] reported that women experiencing pregnancy-related anxiety had a higher risk of leaving off breastfeeding in the first

six months and that their duration of breastfeeding was shorter. Ystrom [30] reported that anxiety and depression levels were related to ceasing breastfeeding. Fairlie et al. [28] stated that high anxiety and depression levels lowered the probability of planning breastfeeding. Eker and Aydın Beşen [25] reported a significant correlation between FOC and PBSES scores.

It was determined in the present study that education level was a predictor of breastfeeding self-efficacy in pregnant women. An education level of high school and above increased PBSES scores by 1.85 units ( $B=1.847$ ). In a study by Aygor et al. [24], education levels of high school and above increased breastfeeding self-efficacy by 5.47 units. Studies by Konukoğlu and Pasinlioğlu [19] and Eker and Aydın Beşen [25] were similar to our study. Dennis [14] reported it in a study that mothers with a high level of education had higher breastfeeding self-efficacy than mothers with a low level of education. It may be said that as education level increased, pregnant women's levels of awareness of breastfeeding and their efforts to access more information on breastfeeding increased, which also increased their breastfeeding self-efficacy.

Another predictive factor of pregnant women's breastfeeding self-efficacy was years of marriage. A one-unit increase in years of marriage increased PBSES scores by 3.21 units ( $B=3.207$ ). As the years of marriage increased, the women's experience of breastfeeding also increased. A majority of the women in our study were multiparous (89.3%), and had experience of breastfeeding (57.5%). It has been reported in the literature that women with previous experience of breastfeeding have higher breastfeeding self-efficacy [15, 18]. It was also found in the present study that 57.5% of pregnant women with experience of breastfeeding had higher breastfeeding self-efficacy, but the difference was not significant. It is predicted that an increase in the duration of marriage will increase the probability of breastfeeding experience. Therefore, it is thought that an increase in the duration of marriage will increase prenatal breastfeeding self-efficacy.

In this study, another predictor of breastfeeding self-efficacy was the women's feelings about pregnancy. The PBSES scores of those with feelings of uncertainty about pregnancy were 2.74 points lower than the scores of those with positive feelings about pregnancy ( $B=-2.743$ ). Uncertainties about pregnancy and negative thoughts lower women's prenatal breastfeeding self-efficacy. In this study, the PBSES scores of those with positive

thoughts about pregnancy were significantly higher. In another study, a significant positive correlation was found between acceptance of pregnancy and PBSES scores [25]. Positive thoughts about pregnancy and taking to pregnancy made women more willing on the subject of breastfeeding.

In our study, another factor predicting breastfeeding self-efficacy was the duration of breastfeeding (0-6 months). A one-unit increase in breastfeeding duration increased PBSES scores by 2.61 units ( $B=2.614$ ). Women with previous experience of breastfeeding may look more positively on breastfeeding again, may cope better with difficulties relating to breastfeeding, and may have a higher breastfeeding self-efficacy. Also, breastfeeding strengthens the bond between mother and baby [27, 36]. For this reason, it may be said that as the duration of breastfeeding increases, breastfeeding self-efficacy also increases.

### Limitations

Our research has some limitations. First, the study sample consisted of pregnant women who came to the obstetrics outpatients' department over a period of only three months. A second limitation is that the sample of the research is limited to one hospital. Also, the form and scales used were filled in based on self-reporting.

### CONCLUSION

In conclusion, this study sheds light on the significant challenges faced by pregnant women, particularly the prevalence of a high level of fear of childbirth among more than half of the participants, with prenatal breastfeeding self-efficacy remaining at a moderate level. Our research has identified key predictors of prenatal breastfeeding self-efficacy, including the W-DEQ score, education level, marriage duration, feelings about pregnancy, and breastfeeding duration, which collectively account for 47% of the variance. These findings underscore the critical importance of addressing FOC and breastfeeding self-efficacy in maternal healthcare. Healthcare providers, especially nurses and midwives, play a pivotal role in supporting pregnant women throughout their journey, from the earliest stages of pregnancy to the postpartum period.

To enhance the well-being of expectant mothers and infants, we recommend several key actions. Firstly, healthcare providers, including nurses and midwives, should proactively monitor and respond to psychological changes experienced by pregnant women, collaborating with multidisciplinary teams when



necessary. Secondly, healthcare providers need to possess a deep understanding of the psychological changes and factors influencing prenatal breastfeeding self-efficacy, enabling them to identify at-risk pregnant women and provide tailored training and counseling. To achieve this, comprehensive training programs for healthcare professionals in these areas are essential. Lastly, healthcare providers should continue their support beyond pregnancy into the postpartum period, offering breastfeeding guidance and psychological support to promote the overall health and well-being of both mothers and their newborns.

This study was presented in the 2nd International 4th National Birth Preparation Education and Training Congress held in Izmir in October 2022.

**Acknowledgments:** We thank all pregnant women participated in this study.

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

**Funding:** : Authors declared no financial support.

**Informed Consent:** The women were informed about the research (informed consent), and their verbal and written consent was obtained. The research was conducted in accordance with the Principles of the Declaration of Helsinki.

**Ethical Approval:** Ethical approval was obtained from Izmir Katip Çelebi University Non-Interventional Clinical Research Ethics Committee (Decision No: 0267, Date: 26.05.2022) and permission from the hospital where the study was conducted (Decision No: 2022/72, Date: 07.07.2022). The study protocol was approved by the institutional review board of the Izmir Provincial Health Directorate. Permission was obtained from the researchers who conducted the Turkish validity and reliability of the scales used in the study. The purpose, nature, confidentiality, anonymity and right of women to refuse to participate in the study were explained to the participants. Written and verbal consent was obtained from woman who voluntarily agreed to participate in the study and met the inclusion criteria. Informed consent was obtained from all pregnant woman included in the study. The research was conducted in accordance with the Principles of the Declaration of Helsinki.

**Author Contributions:** Conception: E, D, T, Ö; M, K - Design: E, D, T, Ö; M, K - Supervision: E, D, T, Ö - Fundings: E, D, T, Ö; M, K -Materials: E, D, T, Ö; M, K - Data Collection and/or Processing: E, D, T, Ö; M, K - Analysis and/or Interpretation: E, D, T, Ö- Literature: E, D, T, Ö; M, K - Review: E, D, T, Ö; M, K - Writing: E, D, T, Ö; M, K - Critical Review: E, D, T, Ö; M, K.

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***How to Cite;***

Topaloğlu Ören ED, Kahveci M (2024) Fear of Childbirth and Breastfeeding Self-Efficacy and Predictors of Breastfeeding Self-Efficacy in Pregnant Women. *Eur J Ther*. 30(1):1-11. <https://doi.org/10.58600/eurjther1921>