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Fear of birth, prenatal attachment and prenatal breastfeeding self-efficacy in high-risk pregnant women

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Authors' contribution:

A. Study design/planning
B. Data collection/entry
C. Data analysis/statistics
D. Data interpretation
E. Preparation of manuscript
F. Literature analysis/search
G. Funds collection

Abstract

Background. Although pregnancy is a physiologic phenomenon, some conditions may endanger maternal or fetal health and thereby, turn pregnancy into a high-risk pregnancy and cause women experience stressful conditions. The aim of the study was to examine the relationship between fear of childbirth, prenatal attachment, and prenatal breastfeeding self-efficacy in women diagnosed with high-risk pregnancy.

Material and methods. The study was conducted with 262 pregnant women who applied to the high-risk pregnancy follow-up policlinic, had a gestational age of 20 weeks or more, agreed to participate in the study, and met the inclusion criteria. The Mann-Whitney U test and the independent sample t-test were applied in the study. Pearson correlation analysis was used to compare total scale score means.

Results. The mean age of 262 pregnant women who participated in the study was 30.22±6.01. There was no relationship between the Fear of Birth Scale and Prenatal Breastfeeding Self-Efficacy Scale (r=0.015), and a significant positive correlation (r=0.331) between the Prenatal Attachment Inventory and Prenatal Breast-Feeding Self-Efficacy scales.

Conclusions. At the end of the study, it was concluded that as the prenatal attachment levels of pregnant women increased, their prenatal breastfeeding self-efficacy also increased.

Keywords: prenatal attachment, fear of birth, high-risk pregnancy, self-efficacy, breastfeeding

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Introduction

Pregnancy is a complex and dynamic process during which physiological and psychological changes occur in women [1]. In some pregnancies, problems affecting the health of both the mother and the fetus can be seen, which is defined as a high-risk pregnancy [2]. Most women begin to experience one of

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the most stressful moments of their lives after learning about their pregnancy. Especially the last three months of pregnancy are more stressful than the first six months [3]. It is known that the approach of birth causes anxiety and fear to increase in some women, and the fear can even turn into tokophobia, which is called the fear of birth. Fear of birth can deteriorate the quality of daily life in women, inability to establish a bond between the mother and the baby in the prenatal period, inability to breastfeed, and obstetric complications [4].

In the prenatal period, which is defined as the period from the beginning of the pregnancy to birth, the development of the fetus continues, and an emotional bond is formed between the parent and the fetus. The bond formed is called prenatal attachment. In the case of adaptation to pregnancy and motherhood, the positive response also improves attachment [5]. Prenatal attachment is an essential element of maternal identity and enables the mother to adapt to the postpartum process [6]. Pregnant women at risk should be followed more closely to establish a safe mother-baby bonding [7].

Breastfeeding self-efficacy, a strong indicator of breastfeeding duration, should be evaluated during pregnancy. The physical, mental, and social conditions of the pregnant woman affect the perception of breastfeeding self-efficacy. Most expectant mothers decide how to feed their babies in the prenatal period. Attempts to increase the perception of breastfeeding self-efficacy during pregnancy will also increase the desire to breastfeed after delivery. Therefore, breastfeeding adequacy should be evaluated in the prenatal period [8].

Aim of the work

We found no study in the literature examining the effect of fear of childbirth on-prenatal attachment and breastfeeding self-efficacy in high-risk pregnant women. Therefore, in our study, we aimed at examining the relationship between fear of childbirth, prenatal attachment and prenatal breastfeeding self-efficacy in women diagnosed with high-risk pregnancy.

The following research questions were considered:

- Does fear of birth affect prenatal attachment?
- Does fear of birth affect prenatal breastfeeding self-efficacy perception?
- Is there a relationship between prenatal attachment and prenatal breastfeeding self-efficacy?

Material and methods

The study was reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. We used descriptive and cross-sectional studies. The study was conducted in the high-risk pregnant outpatient clinic of a pandemic hospital from March 1 to April 30, 2021.

Setting and participants

The research population was composed of pregnant women who were pregnant for 20 weeks or longer and applied to the high-risk pregnancy follow-up outpatient clinic by the researchers. We formed the sample group with 262 pregnant women who accepted to participate in the study, and met the inclusion criteria we determined.

The inclusion criteria:

- speaking and writing Turkish,
- being 18 years or older,
- being 45 years old, and under,
- no diagnosed psychiatric disease,
- no communication problems,
- receiving a risky pregnancy diagnosis,
- acceptance to participate in the study.

Measurement

The data was collected using the developed questionnaire. The first part of the questionnaire consists of the descriptive questionnaire for demographic information prepared by the researchers, the second part was the Fear of Birth Scale for Pregnant Women, the third part was the Prenatal Breastfeeding Self-Efficacy Scale and the last part was the Prenatal Attachment Inventory.

Descriptive questionnaire

The questionnaire included questions about demographic information such as age, education, employment status and health status of the pregnancy.

Fear of Birth Scale for Pregnant Women

The Fear of Birth Scale was developed by Haines et al. [9] to measure fear of birth. Its adaptation to Turkish was made by Serçekuş et al. [10]. On the scale, the participants were asked, "How do you feel about the upcoming birthright now?" In response to the question, they were asked to rate their emotions by marking them on two 100 mm lines defined as (a) "calm and anxious", (b) "no fear and severe fear". The cut-off point of the scale is 50 points. It has been defined that women who scored 50 and above experienced fear of birth. The scale can be applied to both pregnant women and their partners. In the original scale study, the Cronbach Alpha coefficient was found to be 0.920. We obtained the value as 0.88 for our study.

Prenatal Breast-Feeding Self-Efficacy Scale

The Prenatal Breast-Feeding Self-Efficacy Scale measures "finding information and support for pregnant women about breastfeeding", "coping with planning concerns", "preparing milk so that others can feed their baby", "breastfeeding in public", "debating breastfeeding with others" and "deciding to breastfeed when others do not approve". Responses on the scale are evaluated on a five-point Likert scale. The total score obtained from the scale varies between 19 and 95. The scale does not have a cut-off point, and as the score increases, self-efficacy in breastfeeding increases. It consists of four subgroups. The subgroups are: "requests", "information gathering", "breastfeeding", and "skills with other people". In the study conducted by Hazar and Akça [8], the Cronbach alpha coefficient of the scale was calculated as 0.86. We obtained the value 0.93 for our study.

Prenatal Attachment Inventory

The Prenatal Attachment Inventory is used to measure the level of attachment of pregnant women to their unborn babies. The total score obtained from the inventory varies between 21 and 84; a high score

means that the level of prenatal attachment is high, while a low score means that the level of prenatal attachment is low [11]. In the original study of the scale, the Cronbach Alpha value was found to be 0.84. We obtained the value 0.912 for our study.

Procedures and data collection

After finishing the examination at the obstetric clinic, pregnant women were informed about the study. Researchers provided a suitable physical environment for the pregnant women who agreed to participate in the study (COVID-19 pandemic measures: social distance, disinfection of pens, use of masks by pregnant and researchers). We then left them alone for 10 minutes to fill out the form. We collected the completed forms of the participants who filled out the form.

Statistical analysis

A computer environment and SPSS 23.0 package program were applied. We used numbers, percentages and averages in descriptive statistics. We checked whether the data obtained from the study showed normal distribution with the Kolmogorov-Smirnov test. The Independent T-test for parametric data and the Kruskal-Wallis and Mann-Whitney U-Test for non-parametric data were used. Pearson correlation analysis was applied to compare total scale score means. We used the Cronbach alpha value in the reliability analysis of the scale. We accepted the significance value $p<0.05$ in all statistics.

Results

The mean age of the pregnant women was calculated as 30.22±6.01, mean week of gestation as 30.87±5.56 and Body Mass Index value as 27.07±6.20. Most of the pregnant women had spontaneous (91.2%) and planned (67.2%) pregnancies. We found that 60.7% of the women had a nuclear family, 41.6% were primary school graduates, 69.1% had a balanced (equal) income and 15.6% were smokers. 90.8% of the pregnant women who participated in the study received social support during pregnancy, 93.9% planned to receive postpartum support, 91.8% had breastfeeding experience and breastfed their baby for an average of 14.22±8.91 months (Table 1).

Table 1 shows the most common reasons for maternal and fetal presentations of pregnant women who applied to the high-risk pregnancy outpatient clinic. Fetal Growth Restriction (20.6%), cervical insufficiency (19.1%), hypertensive pregnancy diseases (18.3%), and gestational diabetes (17.6%) were the most common causes (Table 1).

Table 1. Demographic and obstetric information of pregnant women

Sociodemographic variables mean ± SD		n	%
Age 30.22±6.01 (min: 18 – max: 48)			
Working status	**Yes**	53	20.2
	No	29	79.8
Family type	**Nuclear family**	159	60.7
	Extended family	103	39.3
Smoking status	**Yes**	41	15.6
	No	221	84.4
Educational status	**Primary education**	109	41.6
	High school/associate degree	108	41.2
	Bachelor and above	45	17.2
Income status	**High**	81	30.9
	Middle	181	69.1
Status of being related to spouse	**Yes**	25	9.5
	No	237	90.5
History of chronic illness before pregnancy	**Yes**	34	13
	No	228	87
Obstetric history			
Gestational week	30.87±5.56 (min: 20 – max: 38)		
Body Mass Index	27.07±6.20 (min: 16.61 – max: 54.95)		
Breastfeeding time of the previous baby (months)	14.22±8.91 (min: 1 – max: 40)		
Way of conceiving	**Spontaneous**	239	91.2
	Assisted reproductive technique	23	8.8
Planned pregnancy status	**Yes**	176	67.2
	No	86	32.8
Time between pregnancies	**First pregnancy**	84	32.1
	0-23 months	59	22.5
	24 months and above	119	45.4
Baby's gender	**Girl**	100	38.2
	Boy	132	50.4
	Not known	30	11.5
Previous method of birth	**Normal delivery**	78	29.8
	Cesarean section	92	35.1
Problems in previous birth	**Yes**	54	31.6
	No	117	68.4
Health problem in the previous baby	**Yes**	48	28.1
	No	123	70.9
Support status during pregnancy	**Yes**	238	90.8
	No	24	9.2
Availability of postpartum support	**Yes**	246	93.9
	No	16	6.1
Previous breastfeeding status	**Yes**	156	91.8
	No	14	8.2

Sociodemographic variables mean ± SD		n	%
Perinatology follow-up causes	Fetal growth restriction	54	20.6
	Cervical insufficiency	50	19.1
	Hypertensive diseases of pregnancy	48	18.3
	Gestational diabetes mellitus	46	17.6
	Poly/oligohydramnios	17	6.5
	Placenta previa/placental adhesion disorders	18	6.9
	Fetal anomaly suspicion/presence	14	5.3
	Maternal systemic disease	13	5.0
	Obesity	2	0.8

Among the pregnant women participating in the study, we found a significant relationship (p<0.05) between the smoking status and fear of birth (p=0.040), between those with good income and breastfeeding self-efficacy and skill sub-dimension (p=0.006), between the extended family structure and the fear of birth (p=0.014), between the nuclear family structure and breastfeeding self-efficacy and breastfeeding among others (p=0.019; p=0.000), between working in an income-generating job and breastfeeding self-efficacy (p=0.001) and all sub-dimensions (p=0.035; p=0.013; p=0.000; p=0.004) (Table 2).

Among the variables of high education level and having problems with their previous baby, breastfeeding self-efficacy scale (p=0.003), breastfeeding among others (p=0.000) and skill (p=0.000) sub-dimensions, those with previous breastfeeding experience and knowledge between the aggregation sub-dimension (p=0.042), we found there was a significant relationship between the Prenatal Attachment Inventory (p=0.012) in those who were pregnant for the first time and the time between pregnancies (p<0.05). When all scales were compared with those with planned pregnancy, we found that there was no relationship between them (p>0.05) (Table 2).

Table 2. Comparison of the total scores of the scales and sub-dimensions and the variables

Features		n	Prenatal Breastfeeding Self-Efficacy Scale					Prenatal Attachment Inventory	Fear of Birth Scale
			Requests	Information gathering	Breastfeeding in the presence of other People	Skill	Total points	Total points	Average Total Score
			Descriptives	Descriptives	Descriptives	Descriptives	Descriptives	Descriptives	Descriptives
Planned pregnancy status	Yes	176	36.477 [9-45]	14.846 [4-20]	9.840 [3-15]	11.130 [5-15]	72.295 [19-95]	61.789 [21-84]	63.187 [0-100]
	No	86	37.755 [1-45]	15.558 [4-20]	10.034 [3-15]	11.779 [3-15]	75.127 [35-95]	59.965 [33-84]	63.140 [0-100]
Test statistics		-	z=-1.029	t=-1.375	t=-0.431	z=-1.530	z=-1.228	t=1.180	t=-0.012
			p=0.304	*p*=0.171	*p*=0.667	*p*=0.126	*p*=0.219	*p*=0.240	*p*=0.990
Smoking status	Yes	41	36.829 [9-45]	14.292 [4-20]	9.902 [3-15]	11.414 [3-15]	72,439 [19-95]	63,268 [21-84]	70.610 [0-100]
	No	221	36.909 [9-45]	15.226 [4-20]	9.905 [3-15]	11.330 [3-15]	73.371[19-95]	60.805 [31-84]	61.787 [0-100]
Test statistics		-	z=-0.116	t=-1.259	t=-0.004	z=-0.248	z=-0.445	t=1.074	**t=2.100**
			p=0.908	*p*=0.214	*p*=0.997	*p*=0.804	*p*=0.657	*p*=0.288	***p*=0.040***
Income status	High	81	37.370 [9-45]	15.419 [4-20]	10.148 [3-15]	12.000 [3-15]	74.938 [19-95]	61.148 [21-84]	62.840 [0-100]
	Middle	181	36.685 [10-45]	14.928 [4-20]	9.795 [3-15]	11.049 [4-15]	72.458 [27-95]	61.209 [33-84]	63.315 [0-100]
Test statistics		-	z=-1.087	z=-1.295	t=0.770	**z=-2.722**	z=-1.737	t=-0.037	t=-0.139
			p=0.277	*p*=0.195	*p*=0.443	***p*=0.006***	*p*=0.082	*p*=0.970	*p*=0.890
Family type	Nuclear family	159	37.501 [9-45]	15.345 [4-20]	10.515 [3-15]	11.597 [3-15]	74.962 [19-95]	62.314 [31-84]	60.094 [0-100]
	Extended family	103	35.961 [9-45]	14.669 [4-20]	8.9612 [3-15]	10.951 [3-15]	70.543[19-95]	59.456 [21-84]	67.913 [0-100]
Test statistics		-	z=-1.559	t=1.319	t=3.820	t=1.674	**z=-2.341**	t=1.936	**t=-2.481**
			p=0.119	*p*=0.189	***p*=0.000***	*p*=0.096	***p*=0.019***	*p*=0.054	***p*=0.014***
Working status	Yes	53	38.943 [9-45]	16.207 [10-20]	11.528 [5-15]	12.434 [5-15]	79.1132 [48-95]	62.886 [42-84]	63.491 [0-100]
	No	209	36.378 [9-45]	14.794 [4-20]	9.492 [3-15]	11.067 [3-15]	71.7321 [19-95]	60.760 [21-84]	63.086 [0-100]
Test statistics		-	**z=-2.110**	**t=2.545**	**t=4.213**	**t=2.997**	**z=-3.180**	t= 1.287	t=0.107
			p*=0.035	***p*=0.013***	***p*=0.000***	***p*=0.004***	***p*=0.001***	*p*=0.201	*p*=0.915

Features		n	Prenatal Breastfeeding Self-Efficacy Scale					Prenatal Attachment Inventory	Fear of Birth Scale
			Requests	Information gathering	Breastfeeding in the presence of other People	Skill	Total points	Total points	Average Total Score
			Descriptives	Descriptives	Descriptives	Descriptives	Descriptives	Descriptives	Descriptives
Educational status	Primary school	109	35.596 [9-45]	14.669 [4-20]	9.467 [3-15]	10.651 [3-15]	70.385 [19-95]	59.908 [21-84]	65.229 [0-100]
	High school	108	37.194 [9-45]	15.046 [4-20]	9.620 [3-15]	11.453 [3-15]	73.314 [19-95]	61.620 [37-84]	62.037 [0-100]
	University	45	39.333 [26-45]	16.155 [9-20]	11.644 [5-15]	12.755 [7-15]	79.888 [51-95]	63.266 [42-84]	60.889 [0-100]
Test statistics		-	KW=5.808	F=2.194	**F=7.888**	**F=8.433**	**KW=11.542**	F= 1.415	F=0.656
			p=0.055	*p*=0.114	***p*=0.000***	***p*=0.000***	***p*=0.003***	*p*=0.245	*p*=0.520
Having problems in the previous baby	Yes	48	38.583 [16-45]	15.875 [4-20]	11.125 [5-15]	12.354 [5-15]	77,9375 [30-95]	59.354 [31-84]	62.396 [0-100]
	No	123	36.349 [9-45]	15.122 [4-20]	9.756 [3-15]	11.170 [3-15]	72,3984 [19-95]	59.918 [31-84]	60.894 [0-100]
Test statistics		-	z=-1.757	t=1.095	**t=2.480**	**t=2.538**	**z=-2.286**	t=-0.278	t=0.321
			p=0.079	*p*=2.77	***p*=0.015***	***p*=0.013***	***p*=0.022***	*p*=0.782	*p*=0.749
Previous breastfeeding experience	Yes	156	37.134 [9-45]	15.551 [4-20]	10.307 [3-15]	11.525 [3-15]	74.519 [19-95]	60.089 [31-84]	62.436 [0-100]
	No	14	36.000 [22-45]	13.142 [7-20]	8.642 [3-15]	11.500 [8-15]	69.285 [43-92]	56.428 [37-77]	52.500 [0-100]
Test statistics		-	z=-0.779	**t=2.221**	t=1.632	t=0.039	z=-1.537	t=1.111	t=1.253
			p=0.436	***p*=0.42***	*p*=0.124	*p*=0.969	*p*=0.124	*p*=0.284	*p*=0.229
Time between pregnancies	First pregnancy	84	36.904 [9-45]	14.785 [4-20]	9.381 [3-15]	11.000 [3-15]	72.071 [19-95]	64.273 [21-84]	66.488 [0-100]
	0-23 months	59	36.559 [10-45]	15.237 [4-20]	9813 [3-15]	11.593 [4-15]	73.203 [27-95]	60.406 [36-84]	64.407 [10-100]
	24 months and above	119	37.058 [9-45]	15.210 [4-20]	10.319 [3-15]	11.462 [3-15]	74.050 [19-95]	59.403 [31-84]	60.210 [0-100]
Test statistics		-	KW=-0.779	F=0.330	F=2.004	F=0.849	KW=-1.537	**t=4.475**	F=1.628
			p=0.436	*p*=0.719	*p*=0.137	*p*=0.429	*p*=0.124	***p*=0.012***	*p*=0.198

Notes: KW = Kruskal-Wallis H Test, z = Mann-Whitney U-Test, F = One-Way Anova, t = Independent Sample T test *$p<0.05$.

Table 3 shows the data explaining the relationship between the mean Fear of Birth Scale score, Prenatal Attachment Inventory, Prenatal Breastfeeding Self-Efficacy, and the total score information of the scale and its sub-dimensions. Mean scores of the pregnant women participating in the study were calculated as 63.16±25.20 from the Fear of Birth Scale, 61.19±11.80 from the Prenatal Attachment Inventory, and 73.22±15.32 from the Prenatal Breastfeeding Self-Efficacy Scale. As a result of the correlation analysis, we did not find a significant relationship between the Fear of Birth Scale and prenatal attachment (r=0.015), and we did not find a significant positive relationship between the Prenatal Attachment Inventory and Prenatal Breastfeeding Self-Efficacy Scale (r=0.331).

Table 3. Correlation relationship between scales (n=262)

Scales and subdimensions	Average	SD	1	2	3	4	5	6	7
1. Fear of Birth	63.16 (0-100)	25.20	1	-	-	-	-	-	-
2. Prenatal Attachment	61.19 (21-84)	11.80	0.015*	1	-	-	-	-	-
3. Breastfeeding Self-Efficacy	73.22 (19-95	15.32	0.070*	**0.331****	1	-	-	-	-
4. Requests	36.89 (9-45)	7.67	0.046	0.339**	0.948**	1	-	-	-
5. Information Gathering	15.08 (4-20)	4.02	0.062	0.279**	0.825**	0.720**	1	-	-
6. Breastfeeding in the presence of other people	9.90 (3-15)	3.32	0.104	0.201**	0.684**	0.525**	0.419**	1	-
7. Skill	11.34 (3-15)	2.99	0.041	0.227**	0.820**	0.740**	0.568**	0.485**	1

Notes: SD – Standard Deviation, *p<0.05 **p<0.01.

Discussion

In the study, we found that pregnant women with extended families and smokers during pregnancy (15.6%) had a higher fear of childbirth (Table 3). Studies have shown that smoking during pregnancy causes low birth weight or premature birth of the baby, placental problems (previa, abruption), perinatal deaths, postpartum sudden infant death syndrome, cleft lip-palate problems, childhood obesity, metabolic and cardiovascular health problems [12]. Zengin et al. [13] reported that 12% of the pregnant women who participated in the study smoked, and that the mean fear of birth score of smokers was higher than that of non-smokers; unlike in our study, there was no relationship between family type and fear of birth. In a previous study, it was reported that the prevalence of smoking in pregnant women was 12.5% and 70% of pregnant women continued to smoke throughout their pregnancy [14]. Researchers have shown that 15-20% of pre-pregnancy smokers continue to smoke during pregnancy [15]. It has been reported that knowing the harms of smoking on both maternal and infant health, being diagnosed with a risky pregnancy and continuing to smoke during pregnancy increase the fear of childbirth in pregnant women [12].

Since our study was conducted during the pandemic period, we think that the risk of contracting COVID-19 increases even more in pregnant women with a large family structure in a crowded home environment. The fear of contracting the COVID-19 disease may also increase the fear of childbirth.

We found that prenatal attachment levels of primigravida pregnant women were higher than those of multigravida pregnant women (Table 3). It showed that the prenatal attachment scores of those who had their first pregnancy experience were higher than those who had a previous pregnancy experience [16]. It was determined that first-pregnant women had higher attachment levels [17], while in another study,

Gurol et al. [7] reported that prenatal attachment levels of pregnant women with one or two pregnancies were lower than those with three, four, five or more pregnancies. Since primigravida pregnant women are pregnant for the first time, it is thought that prenatal attachment levels can be affected by learning the development of their babies to be born during pregnancy, but there was a similarity between the results of the studies on the subject and our study.

We found that prenatal breastfeeding self-efficacy levels of pregnant women with a good income, having a nuclear family, working in a job, university graduate, having a health problem in their previous baby, and breastfeeding experience are quite high (Table 3). Researchers reported that the pregnant women who were university graduates had previous breastfeeding experience, and perceived their income as good had higher breastfeeding self-efficacy scores [18]. In another study, researchers emphasized that pregnant women with university degrees, good income, working and nuclear family structures were better adapted to pregnancy [19]. Corby et al. [20] investigated prenatal breastfeeding self-efficacy and related factors and showed that the situation was associated with feeling ready for birth, income status, education level, and desire to breastfeed. We have seen that the increase in education and income status, ensuring the socio-economic balance enables pregnant women to tend to breastfeeding more consciously, and having previous breastfeeding experience gives the mother self-confidence. We think that the nuclear family structure plays a vital role in protecting the privacy of women during the breastfeeding process.

We observed that fear of birth was high, prenatal attachment was moderate, and prenatal breastfeeding self-efficacy was good (Table 3). In their study measuring prenatal attachment level, Gürol et al. [7] found a mean score of 39.10, and the score is quite low, as compared to our study. Celik et al. [19] found the prenatal attachment score to be 63.79±10.75, similar to our study, in their study with high-risk pregnant women, and it was reported that prenatal attachment increased as compliance with pregnancy increased. In another study, researchers showed that breastfeeding self-efficacy perceptions of pregnant women were above the moderate level, similar to our study [18].

As a result of our study, there was no relationship between fear of childbirth and prenatal attachment and breastfeeding self-efficacy (Table 3). While Arslantaş et al. [21] emphasized that there was no relationship between fear of childbirth and prenatal attachment. Sade et al. [22] emphasized that there was no relationship between the perceived fear of birth and prenatal attachment in pregnant women. Coşkuner Potur et al. [23] compared pregnant women with and without health problems during their pregnancy and reported that those with health problems had lower attachment levels. Çiçek and Mete [24] stated that fear of childbirth negatively affects breastfeeding and causes difficulties in the mother-infant relationship. Kırmızıgül et al. [25] found that fear of childbirth did not affect breastfeeding self-efficacy in pregnant women diagnosed with risky pregnancy. In our study, we reached results consistent with the findings.

Prenatal attachment is defined as the sense of belonging that the mother feels towards the baby during her pregnancy at the behavioral and emotional level [26]. It has been reported that during the prenatal period, the fetus responds to the emotions sent by the mother, and as the pregnancy progresses, the ability to react, hear and perceive the mother increases. For this reason, the mother's adoption of changes in her body and emotional world and the transfer of positive emotions to the unborn fetus indicate that the foundations of attachment were laid in the prenatal period [27]. As the gestational week increases, the mother's abdomen grows in parallel with the growth of the fetus and the feeling of fetal movements by the mother makes the mother-fetus bond stronger [28].

We found a positive and significant relationship between prenatal attachment and breastfeeding self-efficacy (Table 3). Fear of childbirth did not affect the lactation of mothers (milk coming from the breasts, breast consistency before and after breastfeeding) [29]. In another study, a positive correlation was found between prenatal attachment and prenatal breastfeeding self-efficacy of pregnant women, consistent with the results of our study [30]. When the researchers evaluated prenatal breastfeeding self-efficacy, they found the mean score of healthy pregnant women (64.63±6.65) higher than the mean score of pregnant women with gestational diabetes (50.74±8.57) and reported that the difference between them was statistically significant [31]. In light of the results, we conclude that the increase in attachment level also increases breastfeeding self-efficacy.

Conclusions

Fear of childbirth is high in high-risk pregnancies, and prenatal attachment and breastfeeding self-efficacy are moderately high. In our study, we concluded that prenatal attachment levels increased and prenatal breastfeeding self-efficacy increased. Pregnant women at risk should be directed to pregnancy schools, and those who cannot attend the schools should periodically call health professionals online, via video conference or by phone, and provide/continue education and psychological support about pregnancy, birth and puerperium.

Limitations

Since our study was conducted in a single center, it cannot be generalized.

Disclosures and acknowledgements

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Before starting the research, we obtained the permission of the institution where the research would be carried out from the hospital where the research would be conducted, and the ethics committee approval from the Sakarya University (Ethics Committee No. 62, Date: January 12th, 2021). Before the study, the pregnant women were informed about the study and verbal and written consents were obtained on a voluntary basis, expressing that their personal information would be protected. The participants were free to withdraw from the study at any time without being coerced or explaining their reasons for withdrawal from the study. In addition, we fully complied with research and publication ethics in the study.

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