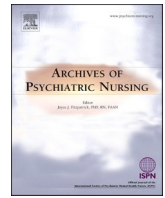


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# The relationship between personality characteristics and fear of childbirth: A descriptive study

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## ARTICLE INFO

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## ABSTRACT

**Background:** It is emphasized that fear of childbirth is closely related to women's personality characteristics, anxiety levels, low self-esteem, low socialization, neuroticism, low extraversion, vulnerability.**Objective:** The study was conducted to determine the relationship between personality traits and fear of childbirth.**Methods:** This was a descriptive study. The study was carried out at the obstetrics policlinic of the research and training hospital. A sample of 853 women at the third trimester of their pregnancies completed the questionnaire. Data were collected using Questionnaire Form, Wijma Delivery Expectancy/Experience Scale A version, Eysenck Personality Questionnaire-Revised/Abbreviated Form.**Results:** The median neuroticism score was 2.00 among those on a mild level of fear of childbirth, while it was 4.00 among those on a clinical level of fear of childbirth ( $p < 0.001$ ). The median extraversion score of the pregnant women was 4.00 among those whose fear of childbirth scores were on a mild level, while it was 2.00 among those whose fear of childbirth scores were on a clinical level ( $p < 0.001$ ). There was a positive correlation between the scores of fear of childbirth and the neuroticism, and a negative correlation between fear of childbirth and extraversion personality trait ( $p < 0.001$ ).**Conclusions:** It was concluded that pregnant women who had neuroticism personality demonstrated a higher level of fear of childbirth whereas those who had extraversion personality demonstrated a lower level of fear of childbirth.**Introduction**

Pregnancy usually is a process in which a woman can experience positive emotions such as happiness, satisfaction, and self-realization. However, at the same time, negative emotions such as anxiety and fear can be experienced (Badaoui et al., 2019). Fear is defined as an ordinary reaction to a perceived or existing danger (Cengiz, 2006). Fear of childbirth is defined as the fear experienced before, during, and after childbirth (Wijma et al., 1998). Fear of childbirth is a very common problem in pregnancy, which has been long known (Sercekus, 2011). Fear of childbirth is an experience that changes from the level of having no fear to excessive fear (Lukasse, Schei, Ryding, & Bidens Study Group, 2014; Wijma & Wijma, 2017). Mild fear is considered normal and defined as a facilitating concern that prepares women for childbirth. Moderate fear of childbirth means that the amount of concern for a

woman to deal with herself may be too much and that she needs help to cope with it. Severe fear of childbirth is a source of concern that reduces the woman's courage to have children, avaginal delivery, and may cause mental disorders (Gönenç et al., 2019; Möller, 2019). In a study conducted with Australian women, it was found that 26% of pregnant women experienced mild, 48% moderate, and 26% severe fear of childbirth (Fenwick et al., 2009). The prevalence of severe fear of childbirth worldwide is estimated to be 14% (O'Connell et al., 2017).

Excessive fear of a pregnant woman may adversely affect the pregnancy and delivery process. It can cause an increase in blood pressure in pregnant women, cause early onset of labor, and can adversely affect the bond between mother and baby after birth (Rouhe et al., 2013; Spice et al., 2009). It was stated that fear of childbirth increases the risk of hypoxia in the infant and adversely affects the health of the newborn causing premature birth, low birth weight, and intrauterine growth

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retardation (Taşkın, 2014). At the same time, fear of childbirth leads to an increase in interventions during labor (Klabbers et al., 2016), voluntary and emergency cesarean section rates, and an increase in the cost of the health system (Fenwick, Staff, Gamble, Creedy, & Bayes, 2010; Nieminen et al., 2009). Depending on the fear of childbirth, postpartum depression (Gosselin et al., 2016; Klabbers et al., 2016), posttraumatic stress disorder (Gosselin et al., 2016), pregnancy termination (Klabbers et al., 2016), risk of negative birth experience (Alder et al., 2011; Elvander et al., 2013), and the need for postpartum psychiatric support (Pazzagli et al., 2015) increases. These adversities may cause a more serious fear of childbirth in later pregnancies (Klabbers et al., 2018). Because of such negative effects, it is very important to determine the factors that affect fear of childbirth.

Factors affecting fear of childbirth include fear of the unknown, fear of labor pain, fear of having an episiotomy, fear of not being able to control the birth process, and fearing that something bad may happen to the baby (Spice2009). In addition, factors such as low socioeconomic level, low education level, and young and advanced maternal age (Rouhe et al., 2013; Saisto et al., 2001) also affect the fear of childbirth. The fear of childbirth was closely related to personality traits, anxiety level, and low self-esteem (Goodman et al., 2004; Handelzalts et al., 2012; Ryding et al., 2007; Saisto et al., 2001; Saisto & Halmesmaki, 2003). Personality is a variable that affects interpersonal relationships, adaptation to difficult living conditions, professional achievements, social participation, happiness, and health (Gönenç et al., 2019; Morsunbul, 2014). Personality traits, especially neuroticism and extroversion personality structure, have been reported to be related to health outcomes. For example, neuroticism personality traits are associated with chronic stress, social phobia, increased risk of depression, and anxiety disorders (Uliaszek et al., 2010; van der Veen et al., 2017; Weber et al., 2012) and extroversion personality traits are protective against depression and social phobia (Cox et al., 2004). Personality characteristics of women affect their attitudes during pregnancy and childbirth. Personality traits are enduring aspects of each person and very challenging to change (McCrae & Costa Jr, 2020). The individual usually has more challenges when under stress. Pregnancy and childbirth can be that stressor (Kashanian et al., 2019). Some prominent personality traits can lead to a traumatic experience of birth and the development of post-traumatic stress syndrome. It was stated that fear of childbirth is more common in women with low self-esteem and sensitive, depressive, and neurotic personality (Saisto et al., 2001).

There are a limited number of studies examining the effect of personality traits on the childbirth process and fear of childbirth in literature. In Turkey, only one study investigating this subject (Gönenç et al., 2019) was found. However, since personality traits are also included in the etiology of other health-related behaviors, investigating the relationship with fear of childbirth will contribute to explaining the factors that cause fear of childbirth. Knowing the relationship between fear of childbirth and personality traits was thought to inform interventions and support offered women and would help pregnant women cope with the fear of childbirth during the prenatal period. Therefore, this study was conducted to determine the relationship between personality traits and fear of childbirth.

## Methods

### Design and participants

This was a descriptive study carried out at the obstetric clinic of the Kayseri Research and Training Hospital. Sampling was done by calculating the number of women who visited the clinic in a year. The sample size was calculated with the known population using the following formula  $n = \frac{N t^2 p q}{d^2 (N-1) + t^2 p q}$  (Büyükoztürk et al., 2015). A total of 6964 live births attained in one year. 2708 of these live births were cesarean section births, while 4256 were vaginal births. The results were

considered significant at  $p = 50\%$  (Okumus & Sahin, 2017) and the margin of error was set at  $d = 0.03$ . As a result of the sampling, the study included 853 pregnant women.

The inclusion criteria were at least literate, 28–40 gestational weeks according to the last menstruation date with ultrasonography data, having a healthy pregnancy and baby, not experienced a cesarean section in a previous pregnancy, and agreeable to participate in the research.

The exclusion criteria of the study were patients with infertility treatment, multiple pregnancies, pre-eclampsia, placenta previa, oligo-hydroamnios, preterm labor, early membrane rupture, intrauterine growth retardation, Non-reactive NST, epilepsy, diabetes, heart disease, and psychiatric disorders.

### Data collection

The data was collected with a Questionnaire Form, the Wijma Delivery Expectancy/Experience Questionnaire, version A (W-DEQ-A) and the Eysenck Personality Questionnaire-Revised/Abbreviated Form (EPQR-A).

The questionnaire form was designed by the researchers in line with relevant literature (Handelzalts et al., 2012; Özcan et al., 2017; Rouhe et al., 2013; Saisto et al., 2001). The form consisted of questions that addressed pregnant women's socio-demographic characteristics (age, education status, employment status, income, and type of family), obstetric characteristics (pregnancy week, number of pregnancies, status of abortion, number of living children, and whether or not it was an intended pregnancy), and their opinions about childbirth.

### The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) version A

It was developed by Klaas and Barbro Wijma in Sweden in 1998 and was translated to Turkish language by Hikmet Öznur Körükçü in 2009. The W-DEQ-A is a scale composed of 33 items. Responses are scored from 0 to 5 in the form of a six-point Likert-type scale. Zero indicates "extremely", and five indicates "not at all". The minimum score is 0 and the maximum score is 165. A high total score indicates a high level of fear. The cut-off point is 85.

- W-DEQ-A score  $\leq 37$  indicates a mild level of fear,
- W-DEQ-A score of 38–65 indicates a moderate level of fear,
- W-DEQ-A score of 66–84 indicates a severe level of fear,
- W-DEQ-A score of  $\geq 85$  indicates fear on a clinical level.

Negatively worded items in the scale (2, 3, 6, 7, 8, 11, 12, 15, 19, 20, 24, 25, 27, 31) are reversely scored. The scale's Cronbach's alpha was determined to be 0.88 for primigravida women and 0.90 for multipara pregnant women (Korukcu et al., 2012). The Cronbach's alpha value of the questionnaire in this study was calculated as 0.918.

### The Eysenck Personality Questionnaire-Revised/Abbreviated Form (EPQR-A)

Francis et al. designed the Eysenck Personality Questionnaire in 1992 and its short form (48 items) after a revision. The questionnaire consists of 24 items and measures personality under 3 main sub-dimensions as extroversion, neuroticism, and psychoticism. Each sub-dimension is assessed with 6 items. Participants are asked to respond to 24 questions in a Yes (1) or No (0) format. Scores for each personality characteristic range from 0 to 6. The Cronbach's alpha values of the scale were 0.78, 0.65, and 0.42 for extroversion, neuroticism, and psychoticism, respectively (Karanci et al., 2007). The Cronbach's alpha values of the questionnaire in this study were 0.84 for extroversion, 0.68 for neuroticism, and 0.47 for psychoticism.

### Data analysis

The data were analyzed with the IBM SPSS 20.0 (Statistical Package for the Social Sciences) software and IBM AMOS V24. The descriptive

data concerning the pregnant women are presented with frequencies, percentage distributions, mean numbers, and standard deviations. Kolmogorov-Smirnov was used to explore whether or not the data followed a normal distribution. For the comparisons of the data that did not follow a normal distribution, Mann-Whitney U and Kruskal Wallis tests were utilized. Data correlation was tested using Spearman correlation analysis. In the post hoc analyses of the data, the Dunn-Bonferroni test was used. For comparisons of the categorical variables, the Chi-squared test was used. The effects of other dimensions on the W-DEQ-A were examined by performing the variable path analysis observed in the analysis. The chi-square, CFI, GFI, and RMSEA values were taken into consideration, among the goodness of fit criteria. Cronbach's alpha coefficient (Cronbach  $\alpha$ ) was used to assess the internal consistency of the W-DEQ and EPQR-A. The accepted level of significance for all analyses was  $p < 0.05$ .

**Ethical procedure**

Ethical approval was received from the Ethics Board of Nevşehir Hacı Bektaş Veli University (Protocol number: 84902927) and official permission was received from the Administration of Kayseri Research and Training Hospital (Protocol number: 27268541/044). All participants were informed about the scope of the study and they provided written consent prior to participation.

**Results**

The mean age of the pregnant women was  $28.01 \pm 5.73$  years. It was found that 33.4% had secondary school degrees, 73.3% had nuclear families, and 62.0% had incomes equal to their expenses. The mean gestational age was  $36.0 \pm 3.48$  weeks. 85.6% had an intended pregnancy and 86.8% received family support during pregnancy. It was seen that 41.1% of the pregnant women experienced fear of childbirth on a moderate level, 19.1% had severe levels of fear, and 19.6% had clinical levels of fear. The mean fear of childbirth (W-DEQ-A) score of the pregnant women was  $60.97 \pm 26.47$ . The pregnant women mean scores of neuroticism, extroversion, and psychoticism were  $2.93 \pm 1.78$ ,  $3.75 \pm 2.12$ , and  $1.04 \pm 1.15$ , respectively.

**Table 1**  
Distribution of fear of childbirth according to socio-demographic characteristics.

Variables	n	Fear of childbirth		
		Median	25%p–75%p	p
Age*				
≤19 years (min: 18)	64	66.50	41.00–87.00	0.264
20–24	182	59.00	44.00–79.00	
25–29	285	58.00	39.50–75.00	
30–34	204	59.00	41.00–76.00	
≥35 (max: 45)	118	61.50	39.25–95.25	
Educational status*				0.669
Primary school	165	62.00	39.00–89.00	
Secondary school	285	58.00	39.50–83.00	
High school	265	59.00	43.00–75.00	
University	138	56.50	43.50–73.25	
Family type**				0.605
Nuclear family	625	59.00	41.00–79.00	
Extended family	228	59.00	39.00–79.50	
Employment status**				0.012
Employed	173	55.00	39.00–68.50	
Unemployed	680	60.00	41.00–82.00	
Income status*, #				<0.001
Income lower than expenses <sup>a</sup>	250	73.00	53.00–93.00	
Income equal to expenses <sup>a,b</sup>	529	55.00	38.00–71.00	
Income more than expenses <sup>b</sup>	74	48.00	34.00–62.00	

\*Kruskal Wallis/\*\*MannWhitneyU/#Dunn Bonferroni<sup>a,b</sup> Groups that produced differences.

Table 1 demonstrates the distributions of the pregnant women's fear of childbirth (W-DEQ-A) median scores in relation to their socio-demographic characteristics. There was no significant difference in the scores of fear of childbirth based on age, educational level, or family type ( $p > 0.05$ ), but the fear of childbirth score of the participants aged  $\leq 19$  years was higher than those in the other groups and these women had fears of childbirth on a severe level. The fear of childbirth score of the pregnant women, whose income level was low, was higher than those in the other groups and these women had higher levels of fear of childbirth. This significant difference in income status was caused by the incomes lower than their expenses and the incomes higher than their expenses groups ( $p < 0.001$ ).

Table 2 presents the distributions of pregnant women's fear of childbirth scores based on their obstetric characteristics. There was no significant difference in the fear of childbirth scores based on the gestational week ( $p > 0.05$ ). There were statistically significant differences in the fear of childbirth scores based on number of pregnancies, the status of having an abortion, number of children, whether or not it was a planned pregnancy, and status of family support ( $p < 0.001$ ). According to the post hoc analyses, the women with  $\geq 4$  pregnancies, and women with  $\geq 3$  children caused the difference ( $p < 0.001$ ). The fear of childbirth score of the women who did not plan the pregnancy and did not have family support was higher ( $p < 0.001$ ).

The distributions of personality trait scores (EPQR-A) according to fear of childbirth levels are shown in Table 3. The median neuroticism score was 2.00 among those on a mild level of fear of childbirth, while it was 4.00 among those with a clinical level of fear of childbirth ( $p < 0.001$ ). According to the post hoc analyses, the difference existed in all levels of fear of childbirth ( $p < 0.001$ ,  $p < 0.05$ ).

The median extroversion score of the pregnant women was 4.00 among those whose fear of childbirth scores were on a mild level, while it was 2.00 among those whose fear of childbirth scores were on a clinical level ( $p < 0.001$ ). According to the post hoc analyses, the difference came from the group who had clinical-level fear of childbirth ( $p < 0.001$ ).

The median psychoticism score of the pregnant women was 1.00 among those whose fear of childbirth scores were in mild, severe, and clinical levels, while it was 0.00 among those women whose fear of childbirth scores were on a moderate level ( $p < 0.001$ ). According to the post hoc analyses, the difference came from the groups who had moderate and severe levels of fear of childbirth ( $p < 0.05$ ) and from the groups who had moderate and clinical levels of fear of childbirth ( $p < 0.001$ ).

Table 4 demonstrates the correlation among pregnant women's scores of fear of childbirth and personality trait sub-dimension scores. There was a positive correlation between the scores of fear of childbirth and the neuroticism and psychoticism sub-dimension of the personality trait ( $p < 0.001$ ) and there was a negative correlation between fear of childbirth and extroversion personality trait ( $p < 0.001$ ).

Fig. 1 contains the non-standardized regression coefficients and Fig. 2 includes the standardized regression coefficients. The change in neuroticism positively affects the fear of childbirth dimension ( $\beta = 5.27$ ;  $p < 0.001$ ). Similarly, the change in the psychoticism dimension positively affects the fear of childbirth dimension ( $\beta = 2.22$ ;  $p < 0.001$ ). The change in extroversion dimension negatively affects fear of childbirth ( $\beta = -1.41$ ;  $p < 0.001$ ). When the model fit criteria are examined, the chi-square value is 2.863, the degree of freedom is 1 and the p value is 0.091. CFI = 0.990, GFI = 0.998, and RMSEA = 0.047, were obtained within the desired limits, indicating that the model fit is quite perfect. The  $R^2$  value was obtained as 16.1% (Figs. 1 and 2).

**Discussion**

This study was carried out to determine the relationships between pregnant women's personality characteristics, and fear of childbirth. It was noted that nearly four-fifths of the pregnant women had a fear of

**Table 2**  
Distribution of fear of childbirth according to obstetric characteristics.

Variables	n	Fear of childbirth (W-DEQ-A Scores)		p
		Median	25%p–75%p	
Gestational week <sup>a</sup>				
28–32	233	61.00	41.00–80.00	0.240
33–37	370	56.00	41.00–76.00	
≥38	250	59.00	38.00–82.25	
Number of Pregnancies <sup>a,c</sup>				
1	237	59.00	40.00–78.00	<0.001
2	304	58.00	41.25–78.75	
3	188	53.00	37.25–67.75	
≥4	124	67.00	45.25–94.75	
Status of abortion <sup>b</sup>				
Yes	95	69.00	48.00–89.00	0.002
No	758	58.00	40.00–77.00	
Number of children <sup>a,c</sup>				
No child	324	60.00	41.00–79.00	<0.001
1	281	55.00	39.50–73.00	
2	171	54.00	37.00–77.00	
≥3	77	72.00	59.00–96.50	
Planned pregnancy <sup>b</sup>				
Yes	730	55.00	39.00–73.25	<0.001
No	123	86.00	63.00–108.00	
Family support during pregnancy <sup>b</sup>				
Yes	740	57.00	39.00–75.00	<0.001
No	113	80.00	55.50–104.50	

<sup>a</sup> Kruskal Wallis.

<sup>b</sup> Mann Whitney U.

<sup>c</sup> Dunn Bonferroni.

childbirth. Accordingly, two-fifths of the pregnant women had a moderate level of fear, one-fifth had a severe level of fear, and another one fifth had a clinical level of fear. Similarly, in one study, it was found that almost four in every five pregnant women experienced fear of childbirth and at least one had fear of childbirth on a severe level (Fenwick et al.,

**Table 3**  
Distribution of personality trait scores according to fear of childbirth levels.

Fear of childbirth (W-DEQ-A Scores)	n	Personality trait (EPQR-A)		
		Neuroticism median (%25–%75)	Extraversion Median (%25–%75)	Psychoticism Median (%25–%75)
Mild level (W-DEQ-A score ≤ 37)	172	2.00 (1.00–3.00)	4.00 (2.00–5.75)	1.00 (0.00–2.00)
Moderate level (W-DEQ-A score = 38–65)	351	3.00 (1.00–3.00)	5.00 (3.00–6.00)	0.00 (0.00–1.00)
Severe level (W-DEQ-A score = 66–84)	163	3.00 (2.00–5.00)	5.00 (3.00–6.009)	1.00 (0.00–2.00)
Clinical level (W-DEQ-A score ≥ 85)	167	4.00 (3.00–6.00)	2.00 (0.00–6.00)	1.00 (0.00–2.00)
Kruskal Wallis p		K_W: 109.910 <0.001	K_W: 30.183 <0.001	K_W: 23.347 <0.001

**Table 4**  
Correlation of pregnant women’s fear of childbirth and personality trait.

Personality trait (EPQR-A)	Fear of childbirth (W-DEQ-A Scores)	
	r	p
Neuroticism	0.378	<0.001
Extraversion	–0.182	<0.001
Psychoticism	0.126	<0.001

2009). A significant majority of pregnant women experience fear of childbirth.

In this study, a positive and significant correlation was found between the fear of childbirth scores and the neuroticism sub-dimension of the personality trait (p < 0.001; Table 4) and the neuroticism scores of the pregnant women were higher at the clinical level of fear of childbirth (p < 0.001; Table 3). At the same time, parallel results of correlation results were obtained in the variable path analysis observed (Figs. 1 and 2). Based on this result, it can be said that women with neuroticism personality characteristics have more fear of childbirth. In one study, it was obtained that higher levels of fear of childbirth were significantly correlated with higher levels of neuroticism (Handelzalts et al., 2015). In another study, they reported that women, who reported more vulnerability, neuroticism, depression, and physical complaints, reported more fear of childbirth (Saisto et al., 2001). These results are similar to the current study. In a meta-analysis, it was underlined that neuroticism involves emotional and physical responses to stress. It was also emphasized that they may have a tendency to minimize unpleasant arousal through disengagement strategies such as avoidance and withdrawal and through negative emotion-focused coping strategies (Connor-Smith & Flachsbart, 2007; Johnston & Brown, 2013). It appears that neuroticism includes negative behaviors that accompany emotional distress and high neuroticism is associated with a tendency for emotional instability, irritability, moodiness, sadness, and anxiety. All of these can cause neuroticism personality characteristics to experience more fear of childbirth. In a study by Handelzalts et al. (2015), it was emphasized that high neuroticism, low conscientiousness, and high anxiety sensitivity may be associated with high fear of childbirth that in turn may lead to a greater possibility for instrumental delivery or emergency cesarean.

A negative correlation was identified between the fear of childbirth scores and the extroversion sub-dimension of the personality trait (p < 0.001; Table 4) and it was seen that as the extroversion scores of the pregnant women increased, their fears of childbirth decreased. In addition, the extroversion scores of the pregnant women were lower at the clinical level of fear of childbirth scores (p < 0.001; Table 3). At the

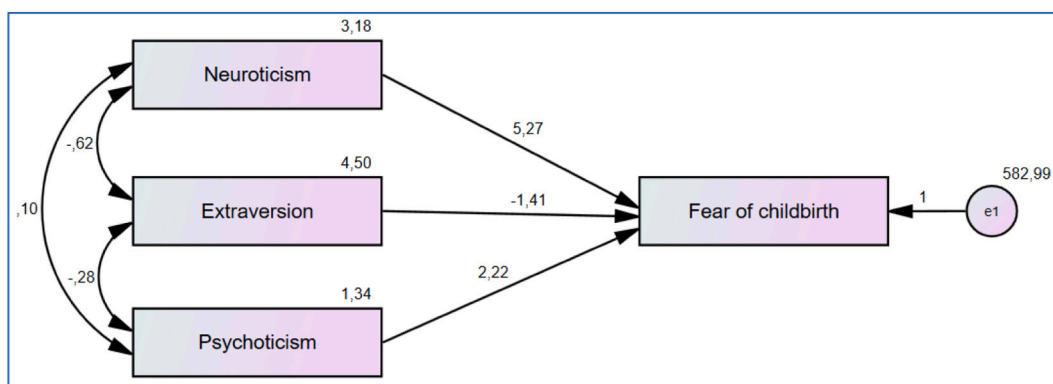


Fig. 1. Non-standardized regression coefficients.

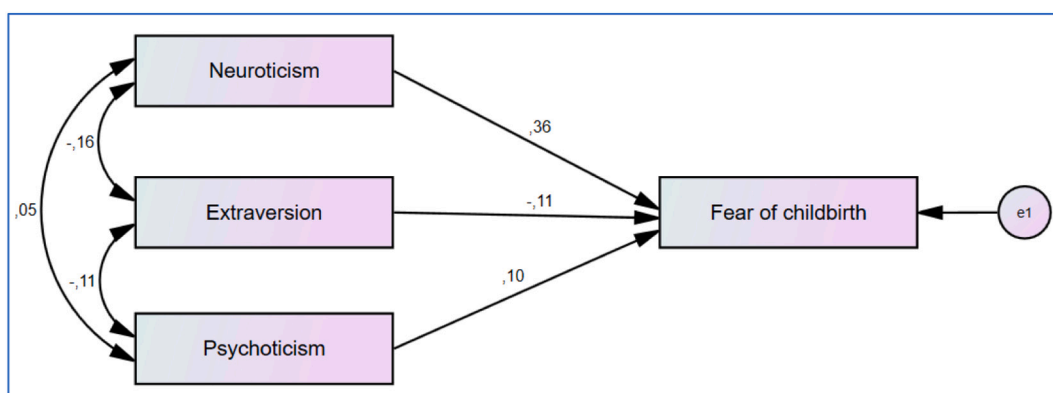


Fig. 2. Standardized regression coefficients.

same time, parallel results of correlation results were obtained in the variable path analysis observed (Figs. 1 and 2). Extroversion includes positive emotionality, assertiveness, and sociability. Having the energy and optimism required to initiate and persist in coping efforts can facilitate problem-solving and seeking support, cognitive restructuring, and distraction (Connor-Smith & Flachsbart, 2007; Johnston & Brown, 2013; Roman et al., 2019). Ryding et al. found that fear of childbirth was higher in the lower in socialization and lower in social desirability dimensions. At the same time, patients with greater fear also tended to be less socialized and less conformant to social standards. Women with greater fear also tended to be more aggressive and hostile (Ryding et al., 2007). In a study by Handelzalts et al. (2015), it was obtained that there was a negative correlation between extroversion and fear of childbirth, but the relationship was not statistically significant. These results support the results of the current study. In another study, mothers who delivered by cesarean section had significantly lower extroversion scores than mothers who had a vaginal delivery. It was emphasized that the experience of any childbirth complication was associated with significantly lower emotional stability and extroversion (Johnston & Brown, 2013).

This study demonstrated a positive correlation between the fear of childbirth scores and the psychoticism sub-dimension of the personality trait ( $p < 0.001$ ; Table 4). At the same time, there was a statistically significant difference between the fear of childbirth levels of median psychoticism scores ( $p < 0.001$ ; Table 3). Additionally, parallel results of correlation results were obtained in the variable path analysis observed (Figs. 1 and 2). With advanced analyses, the significant difference arose between the moderate and severe levels of fear of childbirth groups ( $p < 0.05$ ) and the moderate and clinical levels of fear of childbirth groups ( $p < 0.001$ ). Psychotic personality characteristics are generally associated with such characteristics as aggressiveness, lack of self-confidence,

insensitiveness, inability to have empathy, and guilt (Eysenck & Eysenck, 1975; Kernberg, 2019). Based on this data, it can be said that pregnant women with psychotic personality may have difficulty in coping with the birth process.

## Conclusion

In this study, we tried to determine the relationships between personality characteristics and fear of childbirth and concluded that there was a correlation between personality characteristics and fear of childbirth. It was determined that the fears of childbirth among the pregnant women with neurotic and psychotic personality were higher, whereas the fears of childbirth among those with extroverted personality were lower.

## Implications for nursing practice

During prenatal care, pregnant women's personality characteristics should be assessed, the degree of their fear of childbirth should be explored and relevant and necessary counseling services should be provided. It is recommended that in particular, pregnant women, who are characterized with neurotic and psychotic personalities, should be more carefully evaluated in terms of their fear of childbirth. Developing methods of coping with personality traits should be supported. It may be recommended that pregnant women perform breathing and relaxation exercises to cope with the fear they experience and to include this in their lives. Cognitive restructuring is important in pregnant women who experience severe fear and cannot cope individually. For this reason, they can be directed to seek advice from the expert.

## Strengths and limitations

The strength of this study is that literature contains few studies on exploring the relationships between pregnant women's personality characteristics and fear of childbirth and therefore, we are of the opinion that it will contribute to the literature. Additionally, it examined previously reported parameters that were reported to contribute to fear of childbirth. It is thought that healthcare personnel will be able to correlate fear of childbirth with personality characteristics while providing care.

There are some limitations to the study. Although the study was undertaken at a large obstetrics center, it was carried out only at one obstetrics center. Although the measurement instruments were used in the study are commonly employed around the world, they subjectively assess pregnant women's fear of childbirth and personality characteristics.

## Ethical approval

Ethical approval was received from the Noninvasive Clinical Studies Ethics Board of Nevşehir Hacı Bektaş Veli University (Protocol number: 84902927).

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## Declaration of competing interest

There is no conflict of interest.

## Acknowledgments

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