

The Relationship between the Fear of Childbirth and Anxiety during the Covid-19 Pandemic

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Abstract

Introduction. The novel coronavirus disease (COVID-19), which emerged in Wuhan, China, in late 2019, has affected the whole world. Pregnant women who are expected to give birth during this period are one of the most important groups affected by these processes.

The aim of this study was to identify the relationship between the fear of childbirth and anxiety among pregnant women during the COVID-19 pandemic.

Materials and Methods. The cross-sectional study was conducted on 181 pregnant women in a city in the eastern region of Turkey between July and November 2020.

Results. Mid-level fear of childbirth was experienced by 44.8% of pregnant women. A positive correlation was found between the average anxiety score of pregnant women and childbirth fear.

Conclusions. The findings of the study will guide healthcare professionals in finding applicable solutions to the problems experienced by pregnant women during the COVID-19 pandemic period.

Keywords

Fear of Childbirth; Anxiety; COVID-19; Pregnancy

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Introduction

The novel coronavirus disease (COVID-19), which emerged in Wuhan, China, in late 2019, has affected the whole world [1]. The World Health Organization accepted the disease caused by the virus as a public health emergency and declared a pandemic in March 2020 [2]. This virus, which causes respiratory tract infection at first, not only threatens the physical health of the individuals, but it can also cause both acute and long-term impacts on their mental health [3, 4]. Additionally, social isolation, which is the main measure of the pandemic, has dramatically changed the lifestyle and habits of individuals [5, 6].

Pregnant women who are expected to give birth during this period are one of the most important groups affected by these processes. Some of the difficulties experienced by pregnant women during the pandemic are the fear of being infected, worrying about the wellness of the fetus, fears related to the virus, the fact that they should stay away from hospitals, the need to communicate with their doctors remotely and to go to hospitals where many people are hospitalized due to the pandemic [7, 8]. Exposure to these stressors makes all pregnant women vulnerable to mental problems in the short and long term. Hence, the studies which examined the impacts of the COVID-19 pandemic

on pregnant women have found that they experience symptoms such as stress, anxiety, depression, and fear [7, 9, 10]. The fear and anxiety experienced during pregnancy have negative effects on the health of both the mother and fetus [11]. Uncertainty and threatening information and their effects regarding the current COVID-19 pandemic increase the anxiety of pregnant women [8]. Additionally, women will stay alone to a large extent as they are allowed to bring only one person during childbirth, and all the visitors are prohibited. Therefore, the normal childbirth fear, especially pandemic-related childbirth, will now be combined with anxiety [12].

The fear of childbirth is defined as the negative assessment of childbirth cognitively and approaching birth with fear and anxiety [13]. As anxiety is linked to adverse maternal and neonatal outcomes, [14] it is important to understand the impact of COVID-19 on the fear faced during the pandemic. There are limited data on childbirth fear and its association with the severity of general anxiety, as well as that anxiety as a trait is its predictor [15–17].

This study aimed to identify the relationship between the anxiety and fear of childbirth among pregnant women during the COVID-19 pandemic.

Materials and Methods

Study Design

The data of the cross-sectional study were collected between July and November 2020 in Erzincan, a city in eastern Turkey.

Study Population and Setting

The population of the study was 261 pregnant women who presented to the hospital for NST between July and November 2020. The minimum sample size was calculated with the G*Power applying correlation to two independent Pearson r 's. According to the results, the minimum sample size should include 181 pregnant women. There were sufficient 181 women at the 0.05 level of error with a 95% confidence interval and 90% power according to the post-hoc statistical power analysis. Inclusion criteria for the study were as follows: age between 18 and 45 years, no mental illness, and willingness to complete an online questionnaire.

Measures

The Pregnancy Information Form, the Spielberg's State Anxiety Inventory, and the Wijma Delivery Expectancy/Experience Questionnaire - version A (W-DEQ/Version A) were used to collect the study data.

The Pregnancy Information Form: the form included 7 questions on the socio-demographic and obstetric characteristics of pregnancy such as age, economic status, education level, number of pregnancies.

The State Anxiety Inventory: the inventory developed by Spielberg *et al.* in 1964 to measure the normal and non-normal individuals' state anxiety levels was adapted to Turkish by Öner and Le Compte [18]. It is a self-evaluation type scale that consists of short expressions. The State Anxiety Inventory was developed to measure an individual anxiety at a certain moment. The 20-item State Anxiety Inventory is an inventory that identifies how an individual feels at a particular moment of time and in a certain condition. Theoretically, the scores obtained by the State Anxiety Inventory vary between 20-80 [18]. In the present study, the Cronbach's alpha value of the scale was found to be 0.83.

The W-DEQ/Version A was developed by Wijma *et al.* to measure the fear of childbirth experienced by women. The questionnaire consists of 33 items. The answers in the scale are numbered from 0 to 5 and refer to a 6-point Likert type. The number 0 refers to "completely" and the number 5 refers to "never". The minimum score is 0, while the maximum score is 165. As the score increases, the fear of childbirth experienced by women increases as well. The Turkish validity and reliability studies of the scale were conducted by Korukcu *et al.* (2012), and although the Cronbach's alpha value of the scale is 0.89, in the present study, it was found to be 0.90 [19].

Procedure

The data were collected between July 1, 2020, and November 30, 2020. Pregnant women were informed about the study and invited to fill the survey by considering the current pandemic conditions and following the social distance rule.

The surveys were given to pregnant women who agreed to participate in the study, and a suitable environment was provided for them. After the completion of the survey, they were delivered to the researcher in the NST polyclinic. The estimated survey completion was 10-15 minutes.

Data Analysis

For data analysis, the SPSS 21.0 software (SPSS, Inc., Chicago, IL, USA) was used. The conformity of the variables to the normal distribution was evaluated by the Shapiro-Wilk test. Descriptive statistics were generated for all variables. For the analysis, t-tests, ANOVA, Pearson's correlation, and multivariate linear regression analysis were used. The confidence interval was constructed at a confidence level of 95%. For the significance level of the statistical tests, $p < 0.05$ was used.

Results

The mean age of pregnant women participated in the study was 27.76 years and 38.1% of them were high school graduates. The income of 75% of pregnant women was middle and 76% of pregnancies were planned. Among pregnant women participated in the study, 35.4% were in their first pregnancy (Table 1).

Table 1. Distribution of the introductory characteristics of pregnant women (n=181).

Introductory Characteristics			
		Min-Max	Mean±SD
Age, years		18-40	27.76±4.79
		n	%
Age group	≤ 25 years old	65	35.9
	26-30 years old	65	35.9
	>30 years old	51	28.2
Education status	Primary education	53	29.3
	High school	69	38.1
	Undergraduate	59	32.6
Residence	City	129	71.3
	District	52	28.7
Working status	Employed	39	21.5
	Unemployed	142	78.5
Income status	Middle	136	75.1
	High	45	24.9
Pregnancy status	Planned	139	76.8
	Unplanned	42	23.2
Pregnancy number	1 pregnancy	64	35.4
	2 pregnancies	54	29.8
	3 and more pregnancies	63	34.8

Table 2 shows the distribution of anxiety and childbirth fear means in pregnant women by certain variables. The study found no statistically significant difference between some characteristics, state anxiety scores, and childbirth fear of pregnant women ($p > 0.05$).

Fig. 1 shows the mean scores of pregnant women's anxiety and childbirth fear. The mean score of childbirth fear was 60.52. The mean state anxiety score was 37.81.

Fig. 2 shows the distribution of childbirth fear levels among pregnant women under study according to the W-

Table 2. Comparison of the levels of stress, anxiety, and childbirth fear by pregnant women’s introductory characteristics.

Introductory Characteristics		State Anxiety Levels of Pregnant Women	Childbirth Fear Levels of Pregnant Women
		Mean±SD	Mean±SD
Age group	≤ 25 years old	36.81±9.64	63.53±23.09
	26-30 years old	37.69±9.21	58.52±21.86
	>30 years old	39.23±8.91	59.23±26.77
	F; p	0.97; 0.37	0.82; 0.43
Education status	Primary education	38.64±9.38	62.07±26.72
	High school	38.55±9.15	60.02±20.59
	Undergraduate	36.20±9.29	57.37±24.45
	F; p	1.32; 0.27	0.76; 0.13
Residence	City	37.43±8.57	59.58±23.10
	District	38.55±10.0	61.55±24.95
	t; p	-0.74; 0.33	-0.49; 0.93
Working status	Employed	37.43±9.96	55.48±23.05
	Unemployed	37.91±9.12	61.90±23.83
	t; p	-0.28; 0.67	-1.50; 0.88
Income status	Low	42.40±11.37	71.93±35.02
	Middle	37.94±8.60	59.28±21.83
	High	35.93±9.93	60.04±23.82
	F; p	2.82; 0.21	1.92; 0.14
Pregnancy status	Planned	37.48±9.40	59.66±24.30
	Unplanned	38.88±8.91	63.35±21.86
	t; p	-0.85; 0.95	-0.88; 0.39
Number of pregnancies	1 pregnancy	36.32±9.69	61.42±20.47
	2 pregnancies	38.74±9.72	61.51±26.27
	3 and more pregnancies	38.52±8.39	58.76±24.83
	F; p	1.27; 0.28	0.26; 0.76

Notes: F – One-Way ANOVA test; t – Student’s t-test.

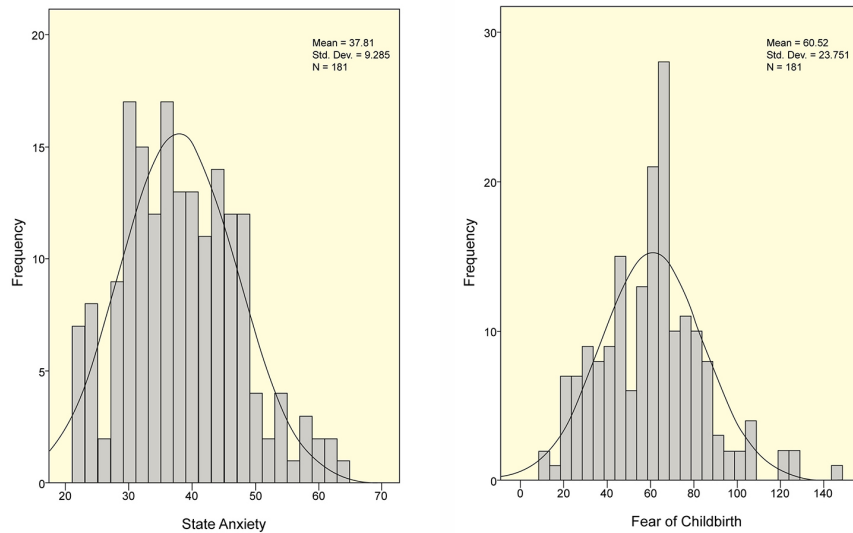


Figure 1. Mean scores of anxiety, and fear of childbirth perceived by pregnant women.

DEQ scale on average. Eighty-one pregnant women were found to experienced mid-level fear of childbirth.

According to Pearson correlation analysis, there was a positive correlation between childbirth fear and state anxiety ($r = 0.511, p < 0.01$).

Table 3 shows the results of the multivariate linear regression analysis regarding the explanation of the factors affecting the total scores of childbirth fear in pregnant

women. The explanatory power of the linear regression model formed by using the backward method was (Adjusted R^2) 25%. According to the results of the regression analysis, the anxiety level of mothers was found to be the factor affecting the fear of childbirth.

Table 3. Multivariate regression analysis of childbirth fear predictors in pregnant women.

Variables	B (95%CI)	SE	β	t	p	95% CI for B	
						Lower	Upper
Constant	11.054	6.39		1.728	<0.001	-1.566	23.674
State Anxiety	1.308	0.164	0.511	7.964	0	0.984	1.633
R=0.26, Adjusted R ² =0.25, F=63.422, p<0.001							

Notes: B – unstandardized coefficients; β – standardized regression coefficient; CI – confidence interval; R² – coefficient of determination.

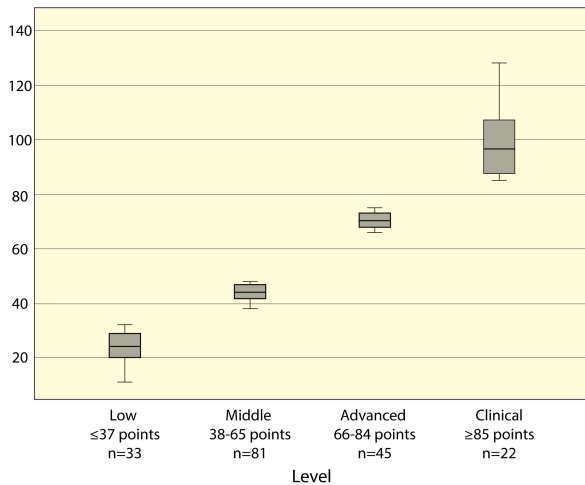


Figure 2. Classification of fear levels of pregnant women according to the average W-DEQ scores.

Discussion

This study, which determined the relationship between fear of childbirth and anxiety during the COVID-19 pandemic, found that the average childbirth fear score of pregnant women was 60.52 ± 23.75 and that 44.8% of pregnant women had an average level of childbirth fear. According to literature, pregnant women experience various levels of childbirth fear [20, 21]. In Turkey, childbirth fear in pregnant women was found to range from 46.4 ± 31.2 to 54.22 ± 26.65 before the pandemic [23–25]. A study by Taubman-Ben-Ari *et al.* [7], which was conducted by using a different measurement tool during the pandemic, stated that the COVID-19 pandemic period was a factor that affected pregnant women’s fear of childbirth. When the rates before the pandemic were compared, pregnant women were found to experience higher fear of childbirth.

Studies have found that the COVID-19 lockdown measures have a negative impact, especially on women [3]. The proportion of pregnant women with pregnancy-related anxiety has increased since the pandemic started [15, 16]. This study found the average anxiety score as 37.81 ± 9.28 . In Turkey, a study by Akbaş *et al.*, that used the same measurement tool before the pandemic, found the average score of 40.10 ± 4.24 [26]. Survey studies consisting of the depression and anxiety inventories by Durankuş *et al.* conducted online found that the COVID-19 pandemic had a critical impact on the level of depression and anxiety in pregnant women [10]. A multicenter cross-sectional

study comparing the mental status of pregnant women before and after the declaration of the COVID-19 pandemic in China stated that pregnant women had significantly higher rates of anxiety and depression symptoms after the declaration of the COVID-19 pandemic [27]. Studies evaluating the anxiety during the COVID-19 pandemic identified that about one-third of pregnant women experienced moderate-to-severe anxiety [28]; more than two-thirds of pregnant women had higher than normal anxiety; almost half (46%) of them experienced a high level of anxiety regarding the vertical transmission of the disease from the placenta [29]. The anxiety levels of pregnant women during the COVID-19 pandemic were found as high [15, 16]. The literature and study results support the findings of this study, and we can say that the COVID-19 pandemic has increased anxiety and fear of childbirth in pregnant women. Following these results, it was revealed that it is important and necessary that midwives and nurses, who play important roles during pregnancy, labor, and childbirth monitoring provide psychological support to pregnant women both within the context of protective health services and COVID-19.

In the present study, anxiety appeared as a factor affecting the fear of childbirth. Spiniello *et al.* noted that childbirth fear was more often monitored in women with high anxiety and greater anxiety, and that women with high anxiety scores preferred elective cesarean section to maintain control over childbirth [30]. Studies conducted during the COVID-19 pandemic found that there was a positive relationship between anxiety and fear of childbirth [12]. The data on the impact of COVID-19 infection on the mother, fetus, and newborn in the perinatal period are increasing every day [28]. These risks that can occur during pregnancy cause the idea that anxiety during pregnancy may correspondingly increase the fear of childbirth.

Conclusions

The findings of the study, which aimed to determine the relationship between the fear of childbirth and anxiety in pregnant women during the COVID-19 pandemic, will guide healthcare professionals in finding applicable solutions to the problems experienced by pregnant women during the COVID-19 pandemic period. This study found that the average score of pregnant women’s childbirth fear during the pandemic was 60.52, and the rate of those who experienced a moderate fear of childbirth was high. The average state anxiety score was 37.81. The average state anxiety of pregnant women was detected to be the factor statistically affecting the fear of childbirth. There was

found a positive correlation between the average anxiety score of pregnant women and the fear of childbirth. Therefore, interventions to decrease the fear of childbirth and anxiety of pregnant women are recommended. These results will be useful in guiding healthcare professionals in the care of pregnant women and encouraging them to be aware of psychological changes in care practices for pregnant women during the pandemic.

Limitations of the Study

Some limitations of the study should be noted: firstly, it relied on a convenience sample that could not be considered representative of the entire population of pregnant women in Turkey; secondly, the evaluation of anxiety and childbirth fear symptoms was based on a self-report measure.

Ethical Statement

Permission for the study was obtained from the Human Research Ethics Committee of Erzincan Binali University (date: 29.05.2020; decision: 05/9). Permission to conduct the study was received from the Ministry of Health - Erzincan Binali University Training and Research Hospital.

Informed Consent

Informed consent was received from all pregnant women who participated in the study.

Conflict of Interest

This article is an extended version of a conference abstract given in Turkey (International COVID-19 and Current Issues Congress, March 12-14, 2021). The authors declared no other potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Financial Disclosure

The authors declared no financial support.

References

- [1] Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine*. 2020;382(8):727–733. Available from: <https://doi.org/10.1056/NEJMoa2001017>
- [2] WHO. Timeline: WHO's COVID-19 response [Internet]. 2021. Available from: <https://www.who.int/news/item/29-06-2020-covidtimeline>
- [3] Gao J, Zheng P, Jia Y, Chen H, Mao Y, Chen S, et al. Mental health problems and social media exposure during COVID-19 outbreak. *PLOS ONE*. 2020;15(4):e0231924. Available from: <https://doi.org/10.1371/journal.pone.0231924>
- [4] Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*. 2020;17(5):1729. Available from: <https://doi.org/10.3390/ijerph17051729>
- [5] Taylor S. *The psychology of pandemics: preparing for the next global outbreak of infectious disease*. Cambridge Scholars Publishing; 2019. Available from: <https://cambridgescholars.com/product/978-1-5275-3959-4>
- [6] Kajdy A, Feduniw S, Ajdacka U, Modzelewski J, Baranowska B, Sys D, et al. Risk factors for anxiety and depression among pregnant women during the COVID-19 pandemic. *Medicine*. 2020;99(30):e21279. Available from: <https://doi.org/10.1097/MD.00000000000021279>
- [7] Taubman–Ben-Ari O, Chasson M, Abu Sharkia S, Weiss E. Distress and anxiety associated with COVID-19 among Jewish and Arab pregnant women in Israel. *Journal of Reproductive and Infant Psychology*. 2020;38(3):340–348. Available from: <https://doi.org/10.1080/02646838.2020.1786037>
- [8] Almeida M, Shrestha AD, Stojanac D, Miller LJ. The impact of the COVID-19 pandemic on women's mental health. *Archives of Women's Mental Health*. 2020 Dec;23(6):741–748. Available from: <https://doi.org/10.1007/s00737-020-01092-2>
- [9] Kajdy A, Feduniw S, Ajdacka U, Modzelewski J, Baranowska B, Sys D, et al. Risk factors for anxiety and depression among pregnant women during the COVID-19 pandemic. *Medicine*. 2020;99(30):e21279. Available from: <https://doi.org/10.1097/MD.00000000000021279>
- [10] Durankuş F, Aksu E. Effects of the COVID-19 pandemic on anxiety and depressive symptoms in pregnant women: a preliminary study. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2020;35(2):205–211. Available from: <https://doi.org/10.1080/14767058.2020.1763946>
- [11] Ng J, Sham A, Tang PL, Fung S. SARS: pregnant women's fears and perceptions. *British Journal of Midwifery*. 2004;12(11):698–702. Available from: <https://doi.org/10.12968/bjom.2004.12.11.16710>
- [12] Taubman–Ben-Ari O, Chasson M, Abu-Sharkia S. Childbirth anxieties in the shadow of COVID-19: self-compassion and social support among Jewish and Arab pregnant women in Israel. *Health & Social Care in the Community*. 2020;29(5):1409–1419. Available from: <https://doi.org/10.1111/hsc.13196>
- [13] Çiçek Ö, Mete SA. Common Problem: Fear of Childbirth. *DEUHFED*. 2015;8(4):263-268. Available from: <https://dergipark.org.tr/tr/pub/deuhfed/issue/46801/586850>

- [14] Lok KY-W, Ko RWT, Fan HSL, Wong JY, Choi EP, Shek NWM, et al. International survey on fear and childbirth experience in pregnancy and the postpartum period during the COVID-19 pandemic: study protocol. *BMJ Open*. 2021;11(8):e050132. Available from: <https://doi.org/10.1136/bmjopen-2021-050132>
- [15] Dymecka J, Gerymski R, Iszczuk A, Bidzan M. Fear of coronavirus, stress and fear of childbirth in Polish pregnant women during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*. 2021;18(24):13111. Available from: <https://doi.org/10.3390/ijerph182413111>
- [16] Lebel C, MacKinnon A, Bagshawe M, Tomfohr-Madsen L, Giesbrecht G. Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. *Journal of Affective Disorders*. 2020;277:5–13. Available from: <https://doi.org/10.1016/j.jad.2020.07.126>
- [17] Nanjundaswamy MH, Shiva L, Desai G, Ganjekar S, Kishore T, Ram U, et al. COVID-19-related anxiety and concerns expressed by pregnant and postpartum women—a survey among obstetricians. *Archives of Women's Mental Health*. 2020;23(6):787–790. Available from: <https://doi.org/10.1007/s00737-020-01060-w>
- [18] Öner N, Le Compte A. *Discontinuous state / trait anxiety inventory handbook (2nd Edition)*. Istanbul: Bogazici University; 1998.
- [19] Korukcu O, Kukulcu K, Fırat MZ. The reliability and validity of the Turkish version of the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) with pregnant women. *Journal of Psychiatric and Mental Health Nursing*. 2012;19(3):193–202. Available from: <https://doi.org/10.1111/j.1365-2850.2011.01694.x>
- [20] Korukcu O, Deliktas A, Aydin R, Kabukcuoglu K. Investigation of the relationship between the psychosocial health status and fear of childbirth in healthy pregnancies. *Clinical and Experimental Health Sciences*. 2017;7(4):152–158. Available from: <https://doi.org/10.5152/clinexphealthsci.2017.359>
- [21] Mortazavi F, Agah J. Childbirth fear and associated factors in a sample of pregnant Iranian women. *Oman Medical Journal*. 2018;33(6):497–505. Available from: <https://doi.org/10.5001/omj.2018.91>
- [22] Phunyanmalee M, Buayaem T, Boriboonhirunsarn D. Fear of childbirth and associated factors among low-risk pregnant women. *Journal of Obstetrics and Gynaecology*. 2019;39(6):763–767. Available from: <https://doi.org/10.1080/01443615.2019.1584885>
- [23] Güleç D, Öztürk R, Sevil Ü, Kazandı M. The relationship between fear of birth and perceived social support of pregnant women. *Türkiye Klinikleri Jinekoloji Obstetrik*. 2014;24(1):36–41. Available from: <https://www.jcog.com.tr/article/en-the-relationship-between-fear-of-birth-and-perceived-social-support-of-pregnant-women-68378.html>
- [24] Bilgiç G, Çıtak Bilgin N. Relationship between fear of childbirth and psychological and spiritual well-being in pregnant women. *Journal of Religion and Health*. 2020;60(1):295–310. Available from: <https://doi.org/10.1007/s10943-020-01087-4>
- [25] Bülbül T, Özen B, Çopur A, Kayacık F. Investigation the fear of labor and decision making about delivery type in pregnant. *Sağlık Bilimleri Dergisi*. 2016;25(3):126–130. Available from: <https://doi.org/10.34108/eujhs.552894>
- [26] Akbaş E, Vırt O, Aysun Kalenderoğlu A, Savaş AH, Sertbaş G. Association between sociodemographic variables with the levels of depression and anxiety in pregnancy. *Archives of Neuropsychiatry*. 2008;45:85–91.
- [27] Wu Y, Zhang C, Liu H, Duan C, Li C, Fan J, et al. Perinatal depressive and anxiety symptoms of pregnant women during the coronavirus disease 2019 outbreak in China. *American Journal of Obstetrics and Gynecology*. 2020;223(2):240.e1–240.e9. Available from: <https://doi.org/10.1016/j.ajog.2020.05.009>
- [28] Yücel Ç, Koç G. COVID-19 infection management in perinatal period: recommendations to health-care professionals. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi*. 2020;7:25–33. Available from: <https://doi.org/10.31125/hunhemsire.775670>
- [29] Aksoy AN. Fear of childbirth: review of the literature. *ODU Journal of Medicine*. 2015;2:161–165. Available from: <https://dergipark.org.tr/tr/download/article-file/150861>
- [30] Spiniello L, Di Mascio D, Bianco C, Esposito O, Giangiordano I, Muzii L, Giancotti A, Brunelli R, Saccone G. All we know about COVID-19 in pregnancy: from perinatal to ethical and psychological perspective. *Perinatal Journal*. 2020;28(2):120–126. Available from: <https://doi.org/10.2399/pm.20.0282008>

Received: 2022-01-12

Revision Requested: 2022-02-18

Revision Received: 2022-03-01

Accepted: 2022-03-05