Original Article

Depression, Anxiety, and Stress Levels in High-Risk Pregnant Women in the COVID-19 Pandemic

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Abstract

Background: The COVID-19 pandemic has caused the pregnant woman to experience fear and anxiety for both her own health and the health of her baby. It is known that the negative emotional states experienced by pregnant women negatively affect their quality of life.
Aim: This study was conducted to determine the levels of depression, anxiety, and stress in high-risk pregnant women during the COVID-19 pandemic.
Methods: The sample of this descriptive study consisted of 351 high-risk pregnant women. The data were collected face-to-face using the Personal Information Form and the Depression Anxiety Stress Scale-21.
Results: Of the pregnant women involved in the study, 4.3% experienced very severe depression, 17.7% experienced very severe anxiety, and 2.3% experienced very severe stress during the COVID-19 pandemic. Positive correlations were found between some subscales of the DASS 21. The predictors of stress in pregnant women were anxiety and depression; the predictors of anxiety were stress, depression, and gestational week; and the predictors of depression were stress, anxiety, and gestational week ($p<0.05$).
Conclusions: There is a limited number of studies in the literature on how psychologically affected women with high-risk pregnancies are, and it is recommended to conduct studies with different sample groups on this subject.

Keywords: High-risk pregnancy, depression, anxiety, stress

Introduction

During pregnancy, one of the most significant periods in a woman's life, there are sometimes deviations from the normal course, and pregnancy can become risky due to comorbid chronic diseases and some complications (Hamzehgardeshi et al., 2021; Janighorban et al., 2018). Such risky situations increase hospitalizations and routine follow-ups and result in pregnancy becoming stressful (Munch et al., 2020). Pregnancy is a process in which women are more mentally sensitive and prone to psychosocial problems due to physiological, hormonal, and psychosocial changes (Kocak & Baltacı,2021).

The COVID-19 pandemic has negatively affected people's mental health as well as their physiological health (Sinaci et al., 2020). Women have been found to have higher levels of anxiety than men during the pandemic (Hou et al., 2020; Wang et al., 2020), and they may be more affected with the addition of pregnancy (Lebel et al., 2020). The uncertainty of the pandemic causes pregnant women to experience anxiety and fear for both their health and their babies' health (Ahmad & Vismara, 2021). Various studies have shown that changes in daily life, prolonged quarantines and accompanying economic problems, disruptions in prenatal care routines, and health-threatening

situations also negatively affect pregnant women mentally during the pandemic (Ceulemans et al., 2020; López-Morales et al., 2021; Preis et al., 2020). Although the rate of mental disorders during pregnancy is about 10%, the rate of anxiety and depression has increased even more during the COVID-19 pandemic (Ozdamar et al., 2014; Zeng et al., 2021).

Health-threatening pandemics like COVID-19 negatively affect pregnant women during the prenatal and postnatal periods due to the changes in daily life habits and quality of life (Hamidia et al., 2021). Wu et al. (2020) emphasized that pregnant women experienced more depressive symptoms during the COVID-19 pandemic than before.

Negative emotional states like stress are known to cause various complications such as premature birth and intrauterine growth retardation during pregnancy, and anxiety caused by the COVID-19 pandemic threatens both pregnant and fetal health (Nodoushan et al., 2020). Since high levels of stress during pregnancy result in cognitive and behavioral problems in the postpartum period (Atasever & Sis Celik, 2018), identification of the factors that can cause negative emotional states like anxiety and stress experienced in the COVID-19 pandemic and taking the necessary measures would be effective in preventing maternal and fetal complications (Tuncer ,2021).

The number of studies on depression, anxiety, and stress levels of high-risk pregnant women during the pandemic period is limited. Therefore, this study was planned to determine the depression, anxiety, and stress levels of high-risk pregnant women during the COVID-19 pandemic.

Research Questions

- What are the depression, anxiety, and stress levels of high-risk pregnant women during the COVID-19 pandemic?

- What are the predictors of depression, anxiety, and stress in pregnant women during the COVID-19 pandemic?

- What are the factors affecting depression, anxiety, and stress levels of pregnant women during the COVID-19 pandemic?

Methods

The sample of this descriptive study included 351 high-risk pregnant women admitted to the outpatient clinics of a university hospital in the Black Sea Region of Turkey whose treatment and care continued in the clinics and who met the research criteria and agreed to participate using the convenience sampling method. The number of pregnant women sampled in the study was calculated according to the unknown population. The sample size was taken as 64.7%, the depression level in the Elbay et al. (2020) study, and $p<0.05$ was accepted.

Unknown population sampling formula: $n=pxqxZ^2/d^2$

N: Number of individuals to be sampled

p: Frequency of occurrence of the event under investigation (0.65)

q: Frequency of non-occurrence of the event under investigation (0.35)

Z: 1.9616, 2.5758 and 3.2905 values for $\alpha=0.05$, 0.01 and 0.001

d: Deviation according to the frequency of occurrence (0.05)

$n= (1.96)^2x(0.65)x(0.35)/(0.05)^2=350$ pregnant women

The study included 10 % more participants, but due to incomplete questionnaires, the study was completed with 351 pregnant women.

Inclusion Criteria

- being 18 years old or older
- having a risky pregnancy follow-up
- volunteering to participate in the research

Exclusion Criteria

- being diagnosed with a psychiatric disorder
- withdrawing from the study at any stage after being included

Measures: The data were collected face-to-face between June 16, 2021, and February 16, 2022, using the Personal Information Form, including socio-demographic, obstetric, and COVID-19 characteristics, and the Depression Anxiety Stress Scale. The forms and scales were filled out by the participants.

Personal Information Form: The personal information form includes questions about age, marital status, educational status, family type, gestational week, number of

pregnancies, chronic disease status, COVID-19 history, and COVID-19 vaccination status.

The Depression Anxiety Stress Scale-21: The Depression Anxiety Stress Scale-21 (DASS-21) was developed by Lovibond and Lovibond (1995) by selecting items from the DASS-42 to shorten the response time. The DASS-21 contains 7 items for each subscale. It was adapted into Turkish by Saricam (2018) as Depression Anxiety Stress-21 Scale. The scale has depression (items 3, 5, 10, 13, 16, 17, 21), anxiety (items 2, 4, 7, 9, 15, 19, 20) and stress (items 1, 6, 8, 11, 12, 14, 18) subscales. The items on the scale are scored as 0, 1, 2, and 3. The scale has no total score. The total score of each subscale is calculated, and the lowest and the highest scores to be obtained are 0 and 21. 14 points and above indicate "very severe depression", 10 points and above indicate "very severe anxiety", and 17 points and above indicate "very severe stress" level. In the clinical sample, Cronbach's alpha internal consistency and reliability coefficients were α=0.87 for the depression scale, α=0.85 for the anxiety subscale, and α=0.81 for the stress subscale (Saricam, 2018). In this study, it was determined α=0.775 for the depression scale, α=0.790 for the anxiety subscale, and α=0.791 for the stress subscale.

Ethical Aspects of the Study: Before starting the study, permission to use the scales in the study was received from the authors through e-mail. Written and verbal consent was obtained from the pregnant women who participated in the study. The consent form includes explanations that the answers to the questions will be kept confidential and will not be shared with anyone, that taking part in the research is completely optional and there is no obligation to participate, and that the participant can withdraw from the study at any time. Approval was obtained from Ordu University Non-Invasive Clinical Research Ethics Committee (03.06.2021/129), and the Ministry of Health for COVID-19 research, and institutional permission was received (23.06.2021/E-35766460-799) from the relevant provincial health directorate. The research strictly adhered to the principles outlined in the Declaration of Helsinki.

Data Analysis: Descriptive statistical methods were performed in the analysis of the data, and the Kolmogorov-Smirnov test, histogram graph, normal distribution curve, Skewness (.846) and Kurtosis (.075), and coefficient of variation were used to evaluate the conformity of the research data to normal distribution. Since the data showed normal distribution, descriptive statistical methods, dependent groups t-test, One Way ANOVA test were used, and Pearson correlation analysis test and multiple linear regression analysis were used to evaluate the relationships. Sheffe's test was used to determine from which group the differences between groups originated. $p<0.05$ was considered statistically significant.

Results

Socio-demographic and Obstetric Characteristics

According to the results, 44.2% of the pregnant women were in the 25-31 age group, 39.6% were high school graduates, 81.5% were housewives, 78.9% had nuclear families, 53% had income equal to expenses, 43% lived in the city, and 41% had a selfemployed spouse. 70.4% had a gestational week of 25 weeks or more, 40.2% had 3 or more pregnancies, 64.7% had a miscarriage before, 43.3% had no alive children, and 49.9% had other risky pregnancy diagnoses such as bleeding, oligohydramnios, polyhydramnios, and fetal causes. 84.9% did not have a chronic disease, 15.1% had continuous medication, 28.8% had COVID-19 history, 42.5% did not get the COVID-19 vaccine, and 22.5% had lost a relative due to COVID-19 (Table 1).

Mean Scores of the Depression Anxiety Stress Scale

The mean score was 5.98±4.23 (min-max: 0-19) for "stress", 5.23±4.21 (min-max: 0-21) for "anxiety", was 4.89±4.05 (min-max: 0-20) for "depression" (Table 2). A 10.8% of the pregnant women had mild depression, 17.4% had moderate depression, 7.4% had severe depression, and 4.3% had very severe depression.

As for the anxiety levels of pregnant women, 15.4% had mild anxiety, 10% had moderate anxiety, 9.7% had severe anxiety, and 17.7% had very severe anxiety. 11.7% had mild stress, 13.4% had moderate stress, 5.4% had severe stress, and 2.3% had very severe stress (Table 3).

Factors Affecting Depression Anxiety Stress Scale Score Averages

The mean score of the stress subscale of DASS-21 was found to be higher in pregnant women with chronic diseases (7.20±4.82) than in those without chronic diseases, and in pregnant women without COVID-19 vaccination (8.13±4.37) than in those with COVID-19 vaccination, and the differences were statistically significant (p=0.023, p=0.00, respectively).

The mean anxiety subscale scores were higher in pregnant women living alone (10.66±9.50) than in those living in nuclear and extended families; in those who did not use continuous medication (5.42±4.28) than those who did; and in those who did not have COVID-19 vaccine (7.34±4.53) than in those who did, and the differences were statistically significant (p=0.045, p=0.00, p=0.015, respectively).

The mean scores of the depression subscale were higher in pregnant women with preterm labor (7.40±5.29) than in those with other risky pregnancy diagnoses; in pregnant women with chronic diseases (6.05±4.70) than in those without chronic diseases; and in pregnant women without COVID-19 vaccine (6.53±4.35) than in those with COVID-19 vaccine, and the differences were statistically significant (p=0.022, p=0.023, p=0.00, respectively).

Correlations of Depression Anxiety Stress Levels of Pregnant Women

Significant positive correlations were found between the stress, anxiety (r=.765), and depression (r=.724) mean scores; and between anxiety and depression (r=.715) mean scores (p<0.01) (Table 4)

Predictors of Stress, Anxiety, and Depression in Pregnant Women

According to the standardized regression coefficients, the significant predictors of stress in pregnant women were anxiety and depression; the significant predictors of anxiety in pregnant women were stress, depression, and gestational week; and the significant predictors of depression in pregnant women were stress, anxiety, and gestational week (p<0.05), (Tables 5-7).

Discussion

In this study investigating the depression, anxiety, and stress levels of high-risk pregnant women in the COVID-19 pandemic, the mean score was 4.89±4.05 for depression, 5.23±4.21 for anxiety, and 5.98±4.23 for stress. 4.3% of the women involved in the study experienced very severe depression, 17.7% experienced very severe anxiety and 2.3% experienced very severe stress.

In studies performed before the pandemic, Karacam and Ancel (2009) reported that 27.9% of pregnant women had depression and needed treatment, and Rezaee and Framarzi (2014) emphasized that 25.3% of pregnant women had depressive symptoms, and 49.3% had anxiety symptoms. In a study evaluating pregnant women before and after the COVID19 pandemic, it was found that depression and anxiety symptoms increased significantly after the pandemic was declared (Wu et al., 2020). Depression, stress, and anxiety levels during the pandemic were found to be 32.7%, 32.7%, and 43.9%, respectively, and mean scores were found as depression (3.91±3.9), stress (6.22±4.25), and anxiety (3.79±3.39) by Effati-Daryani et al. (2020).

Durankus and Aksu's study (2022) highlighted that pregnant women had severe depression and anxiety during the pandemic. It is thought that the changes experienced during the pandemic negatively affect the emotional states of pregnant women and may be a risk factor in the postpartum period. The correlation analysis showed that as the stress scores of pregnant women increased, anxiety and depression scores increased; as anxiety scores increased, depression scores increased.

According to standardized regression coefficients, the significant predictors of stress in pregnant women were anxiety and depression; the significant predictors of anxiety were stress, depression, and gestational week; and the significant predictors of depression were stress, anxiety, and gestational week. Mei et al. (2021) found no significant difference between the depression, anxiety, and stress mean scores according to the gestational week of pregnant women during the COVID-19 pandemic. In another study, it was found that pregnant women had more anxiety in the last trimester

(Saadati et al., 2021).

Rezaee and Framarzi (2014) noted that risky pregnancy was the predictor of depression during pregnancy, and gestational age and risky pregnancy was the predictor of anxiety. Bisetegn et al. (2016) found that the prevalence of depressive symptoms in pregnant women was 9.2%, 7.4%, and 15.5% according to trimesters, respectively. Consistent with our study, it is thought that the increase in negative mood states like depression and anxiety with the progression of the gestational week may be due to both the risky pregnancy of the women in our study and the negative effect of the pandemic. In this study, the mean stress and depression scores of pregnant women with chronic disease were found to be higher than those without chronic disease, and the difference was significant. Geren et al. (2021) found that having a chronic disease in pregnant women did not cause a significant difference in anxiety levels, and Yıldırım et al. (2022) reported that having a chronic disease in pregnant women did not cause a significant difference in depression, anxiety, and stress levels. Hocaoglu et al. (2020) did not find a relationship between having a chronic disease and the anxiety level of pregnant women during the pandemic period. Like our study findings, Maharlouei et al. (2021) found that depression and anxiety scores of pregnant women with chronic diseases were significantly higher. It can be said that pregnant women with chronic diseases have anxiety about being infected due to their diseases, and therefore, they disrupt their prenatal care and have a more depressed mood.

In this study, pregnant women who did have COVID-19 vaccination had higher stress, anxiety, and depression mean scores than those who did, and the difference was statistically significant. In the study by Schaal et al. (2021), it was determined that unvaccinated pregnant women did not have sufficient information about the vaccine and were concerned that the vaccine could harm their unborn child and cause various complications during pregnancy. Considering that women with risky pregnancies have higher anxiety levels than non-pregnant women, it was thought that high anxiety levels would trigger acceptance of the COVID-19 vaccine, but no significant difference was found between the two groups (Goncu Ayhan et al., 2021).

Lebel et al. (2020) found that pregnant women had high levels of anxiety and depression due to the uncertainty of the pandemic, disruption in prenatal care processes, social isolation, etc. Pregnant women are at risk because they are more vulnerable to infections during pregnancy. Although the unpredictable course of the COVID-19 pandemic and the complications it can cause during pregnancy have not yet been clearly explained, pregnant women are afraid of being infected. The COVID-19 vaccine reduces the risk of infection, but it is an expected result that unvaccinated pregnant women have high levels of stress, anxiety, and depression due to fear of transmission. In this study, anxiety scores of pregnant women living alone were higher than those of pregnant women living in other family types, and the difference was statistically significant.

Madhavanprabhakaran et al. (2015) also expressed that anxiety levels of pregnant women with nuclear families were higher. Jelly et al. (2021) determined a significant relationship between family support and marital relationship and anxiety during the COVID 19 pandemic. Wang et al. (2021) found that pregnant women with inadequate family support during the pandemic had a higher risk of insomnia, anxiety, and post-traumatic stress disorder. Family members supporting the pregnant woman both in her daily life and socially may affect her mental status by reducing her anxiety. In this study, the anxiety scores of those without continuous medication were higher than those of pregnant women with continuous medication, and the difference between them was statistically significant ($p=0.045$). Sinaci et al. (2020) found high anxiety levels in high-risk pregnant women using medication.

Table 1. Comparison of Depression Anxiety Stress Scale mean scores according to socio-demographic and obstetric characteristics of pregnants

Characteristics of Pregnants	n	%	DAS- Stress Mean±SD	DAS- Anxiety Mean±SD	DAS- Depression Mean±SD
Age (years)					
18-24	93	26.5	6.19±4.26	5.45±4.42	5.04±4.28
25-31	155	44.2	6.22±4.34	5.48±4.34	5.01±4.20
32 and above	103	29.3	5.44±4.02	4.66±3.79	4.58±3.61
Test and p			F=1.195 p=0.304	F=1.320 p=0.268	F=0.431 p=0.650
Educational Status					
Primary School	44	12.5	6.29±4.02	6.25±4.31	5.38±4.18
Middle School	120	34.2	5.90±4.62	5.20±4.22	5.18±4.15
High School	139	39.6	5.90±4.17	4.98±4.28	4.69±4.01
Graduate	48	13.7	6.16±3.63	5.10±3.89	4.29±3.82
Test and p			F=0.139 p=0.937	F=1.029 p=0.380	F=0.879 p=0.452
Job					
Housewife	286	81.5	6.11±4.47	5.40±4.34	5.05±4.18
Officer	26	7.4	6.38±3.02	5.42±3.73	4.18±3.33
Employee	22	6.3	5.22±2.87	4.45±3.59	4.04±3.93
Self-employment	17	4.8	4.23±2.61	3.17±2.69	3.23±2.58
Test and p			F=1.372 p=0.251	F=1.780 p=0.151	F=1.425 p=0.235
Family type					
Alone	3	0.9	11.00±7.81	10.66±9.50	6.33±8.38
Nuclear family	277	78.9	5.96±4.25	4.98±4.07	4.77±4.08
Extended family	71	20.2	5.88±3.93	6.00±4.33	5.28±3.75
Test and p			F=2.138 p=0.119	**F=4.233 p=0.015**	F=0.621 p=0.538
Income rate					
Income less than expenses	150	42.7	6.14±4.19	5.32±4.27	5.17±4.06
Income equal to expenses	186	53.0	5.90±4.30	5.21±4.19	4.68±4.05
Income higher than expenses	15	4.3	5.46±3.97	4.66±4.06	4.66±4.13
Test and p			F=0.242 p=0.786	F=0.168 p=0.845	F=0.617 p=0.540
Place of residence					
Village	64	18.2	6.04±4.26	5.57±4.68	5.45±4.52
Town	7	2.0	9.85±5.08	6.71±3.59	5.42±3.69
District	129	36.8	6.05±4.07	5.09±3.90	4.76±4.03
City	151	43.0	5.72±4.27	5.14±4.30	4.74±3.89
Test and p			F=2.170 p=0.091	F=0.498 p=0.684	F=0.556 p=0.644
Your spouse's employment status					
Officer	58	16.5	5.56±4.39	4.87±4.61	4.25±4.03
Employee	136	38.7	5.79±4.06	5.04±3.98	4.72±4.09
Self-employment	144	41.0	6.40±4.39	5.64±4.28	5.35±4.08
Retired	4	1.1	4.00±0.81	1.75±0.05	3.00±1.15
Not working	9	2.6	5.88±3.91	5.44±4.30	5.00±3.64
Test and p			F=0.777 p=0.541	F=1.206 p=0.308	F=1.096 p=0.358
Gestational Week					
12 weeks and under	39	11.1	5.64±4.91	4.56±4.08	5.00±4.93
13-24 weeks	65	18.5	5.72±3.90	4.98±4.29	5.67±3.92
25 weeks and more	247	70.4	6.11±4.21	5.40±4.21	4.67±3.93
Test and p			F=0.364 p=0.695	F=0.817 p=0.442	F=1.599 p=0.204

Table 1. (continued) Comparison of DASS-21 Depression, Anxiety and Stress Subscale scores according to socio-demographic and obstetric characteristics of pregnants

Characteristics of Pregnants	n	%	DAS-Stress Mean±SD	DAS-Anxiety Mean±SD	DAS-Depression Mean±SD
Number of Pregnancies					
1	121	34.5	5.84±4.05	5.11±4.01	4.75±4.06
2	89	25.4	5.44±3.95	4.46±3.84	4.26±3.56
3 and more	141	40.2	6.45±4.53	5.82±4.53	5.41±4.29
Test and p			F=1.648 p=0.194	F=2.985 p=0.052	F=2.291 p=0.103
Number of miscarriage					
Miscarriage	227	64.7	6.03±4.20	5.30±4.37	4.79±3.94
Non miscarriage	124	35.3	5.89±4.31	5.11±3.93	5.08±4.27
Test and p			t=0.305 p=0.761	t=0.405 p=0.686	t=-0.634 p=0.526
Number of children					
I have not child	152	43.3	5.79±4.01	5.00±3.83	4.83±4.18
1 child	126	35.9	5.89±4.24	5.15±4.32	4.75±3.71
2 children and above	73	20.8	6.54±4.66	5.86±4.74	5.26±4.37
Test and p			F=0.821 p=0.441	F=1.058 p=0.348	F=0.387 p=0.679
Diagnosis Received					
Excessive nausea-vomiting	17	4.8	5.64±4.34	5.52±4.22	4.11±3.35
Threat of miscarriage	57	16.2	5.26±3.66	4.36±3.85	4.63±4.17
Preterm action	30	8.5	7.43±4.58	6.63±4.58	7.40±5.29
Hypertension-edema	33	9.4	7.09±4.55	6.42±4.55	5.39±3.49
Urinary infection	2	0.6	4.50±0.70	2.00±0.00	4.00±1.41
Premature Membrane Rupture	37	10.5	5.86±3.72	4.89±4.31	5.08±3.77
Other	175	49.9	5.84±4.36	5.13±4.14	4.50±3.89
Test and p			F=1.337 p=0.240	F=1.674 p=0.126	**F=2.498 p=0.022**
Chronic Disease					
Yes	53	15.1	7.20±4.82	6.16±4.57	6.05±4.70
No	298	84.9	5.77±4.09	5.07±4.13	4.68±3.90
Test and p			**t=2.286 p=0.023**	t=1.754 p=0.080	**t=2.276 p=0.023**
Continuous Medication					
Yes	53	15.1	5.62±4.36	4.16±3.69	4.03±4.50
No	298	84.9	6.05±4.21	5.42±4.28	5.04±3.96
Test and p			t=-0.682 p=0.496	**t=-2.007 p=0.045**	t=-1.673 p=0.095
COVID-19 History					
Yes	101	28.8	5.87±4.34	5.00±4.26	4.74±3.79
No	250	71.2	6.03±4.20	5.33±4.20	4.95±4.16
Test and p			t=-0.329 p=0.742	t=-0.667 p=0.505	t=-0.446 p=0.656
Get vaccination COVID-19					
Yes	202	57.5	4.40±3.35	3.67±3.17	3.68±3.34
No	149	42.5	8.13±4.37	7.34±4.53	6.53±4.35
Test and p			**t=-9.037 p=0.00**	**t=-8.920 p=0.00**	**t=-6.938 p=0.00**
Lost of a relative due to COVID-19					
Yes	79	22.5	6.05±4.04	5.56±4.04	5.36±4.09
No	272	77.5	5.97±4.30	5.13±4.26	4.75±4.04
Test and p			t=0.148 p=0.883	t=0.797 p=0.426	t=1.177 p=0.240

Table 2. DASS-21 Depression, Anxiety and Stress Subscales mean scores of pregnants

DASS-21 Sub-scales	Possible Min -Max Values	Received Min-Max Values	Mean±SD	Cronbach Alfa
Depression	0-21	0-20	4.89±4.05	.775
Anxiety	0-21	0-21	5.23±4.21	.790
Stress	0-21	0-19	5.98±4.23	.791

Table 3. Levels of pregnant women according to DASS-21 Depression, Anxiety and Stress Subscale scores

Levels of Pregnants	n	%
Depression		
Normal (0-4 points)	211	60.1
Mild depression (5-6 points)	38	10.8
Moderate depression (7-10 points)	61	17.4
Severe depression (11-13 points)	26	7.4
Very severe depression (14 points and above)	15	4.3
Anxiety		
Normal (0-3 points)	166	47.2
Mild anxiety (4-5 points)	54	15.4
Moderate anxiety (6-7 points)	35	10.0
Severe anxiety (8-9 points)	34	9.7
Very severe anxiety (10 points and above)	62	17.7
Stress		
Normal (0-7 points)	236	67.2
Mild stress (8-9 points)	41	11.7
Moderate stress (10-12 points)	47	13.4
Severe stress (13-16 points)	19	5.4
Very severe stress(17 points and above)	8	2.3

Table 4. Correlation analysis of DASS-21 Depression Anxiety Stress scores of pregnants

DASS-21 Sub-scales	DAS Stress	DAS Anxiety	DAS Depression
Stress	-		
Anxiety	.765**		
Depression	.724**	.715**	-

**Correlation is significant at the 0.05 level **Correlation is significant at the 0.01 level*

Table 5. Predictors of stress in pregnant women

	B	*SE*	*β*	*t*	*p value*
(Constant)	2.124	.863		2.460	.014
Anxiety	.493	.047	.491	10.442	**.000**
Depression	.384	.049	.368	7.903	**.000**
Age (years)	-.044	.028	-.060	-1.589	.113
Gestational Week	.012	.015	.025	.773	.440
Number of Pregnancies	.121	.162	.038	.748	.455
Number of Children	.088	.241	.019	.366	.715

[R=.808, R^2=.653, F=108.019, p =.000]

Table 6. Predictors of anxiety in pregnant women

	B	*SE*	*β*	*t*	*p value*
(Constant)	-.246	.865		-.284	.776
Age (years)	-.018	.028	-.024	-.641	.522
Gestational Week	.049	.015	.109	3.386	**.001**
Number of Pregnancies	-.193	.160	-.061	-1.204	.229
Number of Children	.375	.239	.079	1.569	.118
DAS Stress	.487	.047	.489	10.422	**.000**
DAS Depression	.379	.048	.365	7.849	**.000**

[R=.809, R^2=.655, F=108,625, p=.000]

Table 7. Predictors of depression in pregnancy

	B	*SE*	*β*	*t*	*p value*
(Constant)					
Age (years)	.013	.029	.018	.451	.652
Gestational Week	-.057	.015	-.131	-3.813	**.000**
Number of Pregnancies	.179	.165	.059	1.082	.280
Number of Children	-.319	.246	-.070	-1.298	.195
DAS Anxiety	.401	.051	.416	7.849	**.000**
DAS Stress	.400	.051	.418	7.903	**.000**

[R=.778, R^2=.606, F=88,090, p=.000]

Discussion cont.

Pregnant women may use medication due to existing chronic diseases, complaints, and pregnancy-related new conditions (Demir and Taspinar 2019). It is thought that the women in our study staying away from the hospital due to the risk of infection during the pandemic process and disrupting their prenatal care and treatment may increase their anxiety levels. Pregnant women diagnosed with preterm labor in this study had higher mean depression scores than those of patients with other diseases, and the difference was statistically significant (p=0.022). Denis et al. (2012) conducted a study with high-risk pregnant women and found that 58% of pregnant women had antenatal depression, and Sinaci et al. (2020) also found that in the COVID-19 pandemic, women with high-risk pregnancies had higher anxiety levels than the others. Ilska et al. (2022) found that anxiety levels of women with risky pregnancies were statistically significantly higher. Since the diagnosis of preterm labor is among the conditions that put the pregnancy at risk, it causes the pregnant woman to experience

fear, anxiety, and pandemic-induced uncertainty and to be negatively affected psychologically.

Conclusions: Our study demonstrated that 4.3%, 17.7%, and 2.3% of pregnant women experienced very severe depression, very severe anxiety, and very severe stress during the COVID-19 pandemic, respectively. According to the standardized regression coefficients, the significant predictors of stress in pregnant women were anxiety and depression; the significant predictors of anxiety in pregnant women were stress, depression, and gestational week; and the significant predictors of depression in pregnant women were stress, anxiety, and gestational week.

Implications for Practice: Pregnant women are among the most vulnerable groups affected by the COVID-19 pandemic. In addition to the physiological and psychological changes normally experienced during pregnancy, their own risky situations, and health-threatening factors such as the pandemic affect the mental state of pregnant women. Identifying the levels of prenatal and postnatal stress, anxiety, and depression in pregnant women due to the COVID-19 pandemic will enable plans to be made to improve their mental health and thus contribute to the health of both the pregnant woman and the fetus and newborn. To the best of our knowledge, there is a limited number of studies in the literature on the extent to which women with high-risk pregnancies are mentally influenced, therefore it is recommended that studies with different sample groups be conducted on this subject. **Limitations of the Study:** The results of this study cannot be generalized because the study was conducted only with high-risk pregnant women admitted to outpatient clinics and treated in inpatient services of a training and research hospital.

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