ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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The Relationship Between Depression, Anxiety, Stress Level, COVID-19 Fear with Socio-Demographic Characteristics of Pregnant Women: Descriptive Research

Gebelerin Sosyodemografik Özellikleri Depresyon Anksiyete Stres Düzeyinin COVID-19 Korkusu ile İlişkisi: Tanımlayıcı Çalışma

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This study was presented as an oral presentation at the 2nd International Modern Scientific Research Congress, December 23-25, 2021, İstanbul, Türkiye.

ABSTRACT Objective: This study was conducted to see the fear of coronavirus disease-2019 (COVID-19) and depression, anxiety and stress with socio-demographic characteristics of pregnant women. **Material and Methods:** The descriptive study was conducted with 209 pregnant women who met the research criteria and applied to the pregnant service of a training and research hospital between July 01, 2021-September 15, 2021. The data of the study were collected with the "Participant Information Form", "COVID-19 Fear Scale", and "Depression, Anxiety and Stress Scale." The analysis of the data was made in the SPSS-25 package program, and the level of significance was accepted as $p<0.05$. **Results:** Average age of pregnant women was 27.70±5.51, the mean week of gestation was 27.31±9.92, 37.8% were between 24-28 years old, 37.8% had less than their income, 22% had less than their income. It was determined that she graduated from secondary school. It was determined that there was a significant difference between the number of pregnancies, the number of children and the fear of COVID-19, the age and planned pregnancy and depression, and the income level and stress ($p<0.05$). A positive and significant correlation was found between the total score on the fear of coronavirus scale and the total anxiety scores in pregnant women ($p<0.05$). **Conclusion:** It can be said that the anxiety level of pregnant women increases as the fear of COVID-19 increases. In the face with the anxiety, it is recommended that the expectant mother receives nursing support.

Keywords: Pregnant women; COVID-19 virus; depression; anxiety; psychological stress

ÖZET Amaç: Bu çalışmanın amacı, gebelerin sosyodemografik özelliklerinin koronavirüs hastalığı-2019 [coronavirus disease-2019 (COVID-19)] korkusu ile depresyon, anksiyete ve stres arasındaki ilişkiyi belirlemektir. **Gereç ve Yöntemler:** Tanımlayıcı olarak yapılan araştırma, 01 Temmuz 2021-15 Eylül 2021 tarihleri arasında bir eğitim ve araştırma hastanesinin gebe servisine başvuran, araştırma kriterlerine uyan 209 gebe ile yürütülmüştür. Araştırmanın verileri, "Katılımcı Bilgi Formu", "COVID-19 Korkusu Ölçeği", "Depresyon, Anksiyete ve Stres Ölçeği" ile toplanmıştır. Verilerin analizi SPSS-25 paket programında yapılmış olup, anlamlılık düzeyi $p<0,05$ olarak kabul edilmiştir. **Bulgular:** Gebelerin yaş ortalamasının 27,70±5,51 yıl, gebelik haftasının ortalaması 27,31±9,92, %37,8'inin 24-28 yaş aralığında, %37,8'inin gelirinin giderinden az, %22'sinin ortaokul düzeyde eğitim aldığı tespit edilmiştir. Katılımcıların gebelik sayısı, çocuk sayısı ile COVID-19 korkusu arasında, yaş ve planlı gebelik ile depresyon arasında, gelir düzeyi ile stres arasında anlamlı bir fark olduğu belirlenmiştir ($p<0,05$). Gebelerde COVID-19 Korkusu Ölçeği toplam puanı ile anksiyete toplam puanları arasında pozitif yönde anlamlı bir ilişki olduğu bulunmuştur ($p<0,05$). **Sonuç:** Gebelerin COVID-19 korkusu artıkça anksiyete seviyesi de artmıştır. Aksiyete ile yüz yüze kalan anne adayının gebelikte hemşirelik desteği alması önerilir.

Anahtar Kelimeler: Gebe kadınlar; COVID-19 virüsü; depresyon; anksiyete; psikolojik stres

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Since its recognized in December 2019, the coronavirus has quickly spread over the world.[1] By July 12-18, 2021, over 190 million cases have been reported worldwide and with a 4 million death rate and in Türkiye, from July 2021 there have been 5.4 million confirmed cases of coronavirus disease-2019 (COVID-19) over 49 thousand deaths.[2,3] It has been observed that this virus has significant negative effects on the society around the world. People were physically isolated from their families, friends, and society, radical changes took place in business and education life, and economic problems, uncertainty, and insecurity in the health system emerged.[4,5]

It is seen that the fear of getting sick and contagious, the inability to fully understand what the disease is, the fear of the consequences of the disease, all the fears about vaccination, treatment, and the discourses on the subject in the media cause intense anxiety. The long duration of the pandemic, which has taken the whole world under its influence, has made it difficult for people to endure and endure. According to the course of the pandemic, acute stress disorder, depression and anxiety disorders were the most common mental problems at first. Along with the process, the pandemic has also led to the formation of new lifestyles, experiencing the disease many people, overcoming it or experiencing losses. It is also seen that people adapt to all difficulties. However, long-term anxiety, stress, feeling of being overwhelmed and efforts to adapt may pave the way for the development of more serious mental disorders.[6-9]

A published report states that pregnant women are more vulnerable to coronavirus disease and have a greater risk of death.[10] With the pandemic, it is very important to manage the pregnancy and birth process successfully in terms of mother and baby health. Pregnant women need to be more careful to protect themselves and their babies, meticulously comply with the measures and quarantine for protection from coronavirus, and have appropriate social support. Quarantine, on the other hand, may cause the pregnant woman to feel unsafe and depressed. In particular, insufficient social support resources may cause the pregnant woman to experience mental problems.[11-13]

This research was carried out to relationship between depression, anxiety, stress level, COVID-19 fear in pregnancy with socio-demographic characteristics of pregnant women.

Research Questions:

1. What is the COVID-19 fear level in pregnant women?

2. What is the prevalence of depression, anxiety, and stress in pregnant women?

3. Is there a relationship between the COVID-19 fear levels of pregnant women and their depression, anxiety, and stress levels?

MATERIAL AND METHODS

TYPE OF RESEARCH

The this research was carried out a descriptive.

PLACE AND TIME OF RESEARCH

The research was carried out in a training and research hospital between July 01, 2021-September 15, 2021. Sampling calculation was not made in the study, and 209 pregnant women who applied within that period and voluntarily agreed to participate in the study were included. It was planned to study all pregnant women who applied to the septic and perinatology service of the hospital, who met the research criteria (being between the ages of 19-40, having no communication disability, at least primary school graduate). Psychiatric diseases, speech or hearing impairments, illiteracy, or a lack of willingness to participate were excluded from the research.

DATA COLLECTION TOOLS

The data of the study were collected with the "Pregnant Information Form", "COVID-19 Fear Scale (C19SF)" and "Depression-Anxiety-Stress Scale (DASS)."

EXHIBITOR INFORMATION FORM

It consists of 10 questions that question socio-demographic information and information about the scope of the research.

C19SF

The scale was developed by Ahorsu et al. and translated into Turkish by Satıcı et al.[14,15] The questions

are in 5-point Likert type. The scale produces scores ranging from 7 to 35. High score means 'high' COVID-19 fear level. The Cronbach alpha score for the Turkish validity and reliability of the scale was found to be 0.88. The scale's Cronbach alpha value was 0.87 in this investigation.

DASS

Scale is a 42-item instrument by Lovibond and Lovibond.[16] Afterward, a 21-item short form of the scale was created. The scale was developed to measure the symptoms of depression, anxiety, and stress both in the clinical sample and in accordance with the normal sample. The scale has a 5-point Likert-type response format and there are 7 items in total for each factor. The total scores of the scale without reversed items range from 0 to 42 for each sub-dimension. Increasing scores on the scale indicate an increase in symptoms. In the original study, Cronbach alpha values for the sub-factors of the scale were found as follows: Depression 0.94; anxiety 0.87, and stress 0.91. The Turkish validity and reliability of the scale were performed by Sarıçam.[17] Cronbach alpha scores for the scale in this study were 0.72 for depression, 0.71 for anxiety, and 0.70 for stress, respectively.

RESEARCH DATA COLLECTION

Data; after giving information about the research and obtaining the verbal and written consent of those who want to participate, it was collected in an average of 20 minutes by one-to-one interview method in the service.

ETHICAL DIMENSION OF RESEARCH

Ethical permission for the research was obtained from the HSU Van Training and Research Hospital Ethics Committee (date: Jun 30, 2021, no: 2021/13). Written consent was acquired from the participating in the study and the study was conducted following the principles of the Declaration of Helsinki.

STATISTICAL ANALYSIS

The analysis of the data was made in the SPSS-25 (IBM Statistical Packages for the Social Sciences Corp.; Armonk, NY, USA) package program and the significance level was accepted as $p<0.05$. The normal distribution of the data was made by Kolmogorov-Smirnov and Shapiro-Wilk tests. Normally distributed data were parametric, and non-normally distributed nonparametric tests were used. In the analysis of the data, mean, standard deviation frequency, minimum, maximum, one-way analysis of variance, t-test for independent groups, Mann-Whitney U, Kruskal Wallis, and correlation test were used.

RESULTS

Some socio-demographic variables of the participating in the study were questioned and the number and percentage of pregnant women according to these variables are given in Table 1. When the socio-demographic data of the pregnant women are examined; the mean age was 27.70±5.51, the average pregnancy week 27.31±9.92, 37.8% were between 24-28 years old, 37.8% had less income than their expenses, 22% are secondary school graduates. It was determined that 74.6% of the expectant mothers did not work in any job, 59.3% had a nuclear family structure, 67.9% had a planned pregnancy and most of the pregnant women did not have COVID-19 (%74,6) disease. It was determined that 12% of the mothers-to-be had 4 pregnancies, 62.7% had a child in the 3rd trimester and 29.7% had a child before (Table 1).

The mean scores of C19FS and DASS-21 of the pregnant women who participated in the study are given in Table 2. The mean depression score of the pregnant women was 9.00±4.173, the mean anxiety score was 8.45±4.04, and the mean stress score was 7.79±4.17. The mean score of C19FS was determined as 18.93±6.76. According to these values, it was determined that the depression level of the pregnant women was moderate, the anxiety level was advanced and the stress level was normal.

When the average C19FS score of the participating in the study was evaluated according to the number of pregnancies; it is seen that the pregnant women expressing 5 or more pregnancies have a mean score of 23.73±7.40. It was determined that the mean scores between the groups created a statistically difference, and the pregnant with 5 or more pregnancies got higher scores ($p<0.05$, Table 3). When Table 3 is examined; it was determined that the participants with a mean C19FS score of 4 or more in pregnant

TABLE 1: Socio-demographic variables of pregnants (n=209).

	n	%
Age		
19-23	47	22.5
24-28	79	37.8
29-33	52	24.9
34 and above	31	14.8
Income level		
Income less than expenses	79	37.8
Income equals expense	78	36.8
Income more than expenses	53	25.4
Educational status		
Primary school	56	26.8
Middle school	46	22. 0
High school	59	28.2
University	48	23.0
Working status		
Working	53	25.4
Not working	156	74.6
Family type		
Nuclear family	124	59.3
Extended family	85	40.7
Planned pregnancy status		
Yes	142	67.9
No	67	32.1
Status of contracting COVID-19 disease		
No	156	74.6
Yes	53	25.4
Number of pregnancies		
1 pregnancy	55	26.3
2 pregnancy	42	20.0
3 pregnancy	57	27.3
4 pregnancy	25	12.0
5 and above	30	14.4
Gestational week		
1. trimester	20	9.5
2. trimester	58	27.8
3. trimester	131	62.7
Number of children		
None	22	10.5
1 child	62	29.7
2 child	60	28.7
3 child	38	18.2
4 and above	27	12.9
	Mean±Sd	**Minimum-maximum**
Age	27.70±5.51	19-47
Gestational week	27.31±9.92	2-41

COVID-19: Coronavirus disease-2019.

women had a mean score of 22.56±7.14. It was determined that the mean scores between the groups were statistically differance, and the pregnant women

TABLE 2: Mean scores of pregnant women participating in the study on the Depression-Anxiety-Stress Scale, and the COVID-19 Fear Scale.

Values obtained in the study	Minimum	Maximum	Mean±Sd
Depression total	1	25	9.00±4.17
Anxiety total	1	26	8.45±4.04
Stress total	0	24	7.79±4.17
Fear of coronavirus (COVID-19) total score	7	35	18.93±6.76

COVID-19: Coronavirus disease-2019.

with 4 or more children had higher scores ($p<0.05$, Table 3). In terms of statistical significance, there was no difference between the mean C19FS total score and age, income level, and planned pregnancy status in pregnant women ($p>0.05$, Table 3).

When the depression score average of the women in the study was examined according to age; it is seen that the average score of 10.13±3.58 points of those aged 34 and over is higher than the others. Between the groups, there was a statistical difference ($p<0.05$, Table 3). According to the groups ($p<0.05$, Table 3). According to the data obtained in this study, it was determined that the depression score average of women whose pregnancy was not planned (10.39±4.36) was higher than those who had planned pregnancy (8.35±3.92). Statistically, the difference was significant ($p<0.05$, Table 3). There was no statistically difference relationship between depression total score average and income level, the number of pregnancies, and the number of children in pregnant women ($p>0.05$, Table 3).

The relationship between the C19FS and DASS-21 mean scores of the participating in the study is given in Table 4. It was found that there was a positive, weak, and significant correlation between C19FS score and anxiety score in pregnant women ($p<0.05$) (Table 4).

DISCUSSION

Worldwide mortality rates or issues related to the pandemic and social isolation cause individuals to live with fear, depression, anxiety and stress.[18-20] As a result of the study conducted to examine the relationship between the fear of COVID-19 in pregnant women and the depression, anxiety, and stress levels

TABLE 3: Comparison of the mean scores depression-anxiety-stress and COVID-19 Fear Scale of the participatance in the study.

Features (n=209)		C19FS scores	Depression	Anxiety	Stress
Age	n	Mean±Sd	Mean±Sd	Mean±Sd	Mean±Sd
19-23 (1)	47	19.45±6.62	9.98±4.39	9.49±4.08	8.55±4.76
24-28 (2)	79	18.54±7.09	7.90±4.11	7.78±4.19	6.99±3.99
29-33 (3)	52	18.75±5.68	9.12±4.08	8.33±3.98	8.46±3.96
34 ve above (4)	31	19.42±7.91	10.13±3.58	8.81±3.52	7.55±3.77
Statistical analysis		F=0.241	F=3.595	KW=6.295	F=2.009
		p=0.868	**p=0.015**	p=0.098	p=0.114
			*Differance:1-2		
Income level					
Income less than expenses (1)	79	19.23±7.46	9.05±4.57	8.68±4.74	8.18±4.52
Income equals expense (2)	77	18.48±6.38	9.48±3.89	8.97±3.81	8.32±4.15
Income more than expenses (3)	53	19.13±6.27	8.23±3.87	7.36±2.98	6.43±3.34
Statistical analysis		F=0.269	F=1.433	KW=5.135	KW=7.296
		p=0.765	p=0.241	p=0.077	**p=0.026**
					**Differance:
					2-3.1-3
Planned pregnancy status					
Yes	142	18.66±6.67	8.35±3.92	8.18±3.86	7.44±4.09
No	67	19.49±6.94	10.39±4.36	9.03±4.39	8.54±4.28
Statistical analysis		t=-0.828	t=-3.385	Z=-1.321	Z=-1.628
		p=0.408	**p=0.001**	p=0.186	p=0.104
Number of pregnancies					
1	55	19.02±6.41	8.53±4.91	8.51±4.76	7.84±5.00
2	42	18.29±6.14	8.62±3.76	8.24±3.47	7.76±3.96
3	57	17.39±6.64	9.09±4.24	8.09±4.01	7.77±4.35
4	25	17.56±5.71	8.80±3.50	7.84±3.00	7.20±3.20
5 and above	30	23.73±7.40	10.40±3.51	9.87±4.10	8.27±3.24
Statistical analysis		F=5.287	F=1.132	F=1.211	KW=1.296
		p=0.000	p=0.343	p=0.307	p=0.862
		*Differance:			
		1-5.2-5.3-5.4-5			
Number of children					
0 (1)	22	16.41±6.78	8.86±4.21	8.50±4.17	8.50±4.93
1 (2)	62	19.94±6.33	9.03±4.62	8.98±4.62	7.95±4.65
2 (3)	60	18.07±6.74	8.75±3.72	7.60±3.19	7.22±3.74
3 (4)	38	17.53±6.15	8.58±4.57	8.16±4.60	7.55±4.15
4 and above (5)	27	22.56±7.14	10.19±3.42	9.52±3.15	8.44±3.28
Statistical analysis		F=3.911	F=0.698	F=1.464	KW=2.347
		p=0.004	p=0.594	p=0.215	p=0.504
		*Differance:			
		1-5.3-5.4-5			

t: Independet samples t-test; KW: Kruska-Wallis; Z: Mann-Whitney U; F: One Way ANOVA; *Borferroni; **Dunn Procedure; COVID-19: Coronavirus disease-2019; C19FS: COVID-19 Fear Scale.

that are frequently encountered during pregnancy; when it was evaluated that the average score obtained from the C19FS was 7 and the highest was 35, the COVID-19 fear levels of the individuals (18.93±6.76) were found to be above the moderate level. Eroğlu et al., Salehi et al., and Naghizadeh and Mirghafourvand's national and international study results with pregnant women seem to be compatible

TABLE 4: The relationship between DASS-21 and its sub-dimensions and the average scores of the COVID-19 Fear Scale.

	1.	2.	3.
1. C19FS total score			
2. Depression	0.120		
3. Anxiety	**0.224****	**0.706****	
4. Stress	0.112	**0.657****	**0.684****

**p<0.01; COVID-19: Coronavirus disease-2019; DASS-21: Depression, Anxiety and Stress Scale.

with the results obtained from this study.[12,21,22] Examining the scoring table of the DASS-21 scale in Table 2; it was determined that the depression score mean of the pregnant women in the study was moderate, the anxiety score average was advanced, and the stress score average was normal. Looking at the literature, it is seen that similar studies support the results obtained from this research.[23-25] It can be said that the mental problems experienced by pregnant women due to the pregnancy process increase with the presence of COVID-19.

In this study, the average depression score of pregnant women aged 34 and over was found to be higher than pregnant women under 34 years of age. The result obtained from the research is similar to the results of other studies.[26-28] In this study, it is thought that the difficulties in adapting to pregnancy and the increased responsibilities of pregnant women aged 34 and over increase the tendency to depression.

In this study, the mean depression score of women with unplanned pregnancies was found to be higher (Table 4). Results of the research conducted by Yücel et al., and the findings of Dündar et al. are identical to those of this study.[29,30] It is thought that the postpartum care needs of the mother who has an unplanned pregnancy process for the baby, the roles and responsibilities of motherhood, and her thoughts about the unexpected situation increase her tendency towards depression.

When the stress levels of pregnant women were examined, it was determined that the stress score average of the individuals with low-income levels was higher than those with a high-income level. It is seen that the result obtained from the research is compatible with similar studies.[28,31] It is thought that this situation may increase the stress level of the expectant mother since pregnant women with poor economic conditions have the thought that they cannot meet the basic needs of both themselves and their baby.

In the study, the mean score of the C19FS of mothers with 5 or more children and pregnancies was found to be higher than the other individuals. Contrary to the study conducted by Dule and Lebel et al., it is stated that the COVID-19 fear and anxiety levels of pregnant women who experienced their first pregnancy are higher than other individuals.[32,33] It can be thought that these differences between the results are related to factors such as changes in living conditions between countries, the way and time of the studies. As the household size grows, a decrease in positive health behaviors and an increase in anxiety and fears can be observed due to the decrease in per capita income and the increase in the responsibilities of individuals.[34,35]

In the study, it was determined that there was a relationship between the C19FS mean score of pregnant women and the mean anxiety score Ahorsu et al. applied the C19FS and the hospital anxiety and depression scale to 717 patients in Iran.[14] In the study, the C1FS and the mean anxiety score were significant. It is seen that the examined study is similar to the result of this research. The thought that the COVID-19 disease will cause loss of life in pregnant women, as well as in every person, and that they will fail to fulfill their basic responsibilities creates fear. When these and similar factors are evaluated, it can be said that the anxiety levels of pregnant women going through a sensitive period will increase.

CONCLUSION

Current research was carried out to relationship between depression, anxiety, stress level of covıd-19 fear with socio-demographic characteristics of pregnant women. In the study, pregnant women; situations such as the high number of pregnancies, age, low income, unplanned pregnancy, and the high number of children create negative psychological consequences for the expectant mother. In the face with the anxiety, it is recommended that the expectant mother

receives nursing support during the pregnancy process.

LIMITATION

Since the study was conducted in only one center and no control group the results can only be generalized to pregnant women participating in this study. In the present study is limited to no control group.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Yılmaz Sarıboğa, Özkan Sir;* ***Design:*** *Yılmaz Sarıboğa, Özkan Sir, Sinan Ataş, Burcu Demir Gökmen;* ***Control/Supervision:*** *Yılmaz Sarıboğa, Burcu Demir Gökmen;* ***Data Collection and/or Processing:*** *Sinan Ataş, Özkan Sir, Yılmaz Sarıboğa;* ***Analysis and/or Interpretation:*** *Yılmaz Sarıboğa, Burcu Demir Gökmen;* ***Literature Review:*** *Özkan Sir, Sinan Ataş;* ***Writing the Article:*** *Özkan Sir, Sinan Ataş;* ***Critical Review:*** *Yılmaz Sarıboğa, Özkan Sir.*

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