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ORIGINAL ARTICLE

Psychosocial Loads Caused by Covid-19 Pandemic on Obstetricians and Gynecologists. A Scale Study

Covid-19 Pandemisinin Neden Olduğu Obstetrik ve Jinekoloji Uzmanlari Üzerindeki Psikososyal Yükler. Bir Ölçek Çalışması

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ABSTRACT

Introduction: The novel coronavirus infection (COVID-19) caused a worldwide pandemic. The pandemic created a heavy psychological burden on healthcare workers. Healthcare providers in obstetrics and gynecology faced similar challenges.
Aim: This study studied obstetricians' and gynecologists' psychosocial burdens and concerns caused by the COVID-19 pandemic.
Methods: Participants of the study consisted of obstetricians and gynecologists. They were reached through social media using the snowball sampling technique. This is a survey and scale study. The researchers created the survey. The survey questioned the demographic characteristics of the participants and the problems caused by the COVID-19 pandemic. In addition, three different scales were applied to the participants: Maslach Burnout Inventory, Coronavirus Anxiety Scale and Depression Anxiety Stress Scale-21.
Results: There was statistically significant difference between Maslach Burnout Inventory Personal Achievement and Maslach Burnout Inventory General. Maslach Burnout Inventory Depersonalization and Coronavirus Anxiety Scale scores of the participants working in pandemic hospitals were statistically significantly higher than those not working in these hospitals. According to the MANOVA results, independent variables explained 35% of the variance in the Maslach Burnout Inventory General scale, 51% in the Coronavirus Anxiety Scale, and 53% in the overall Depression Anxiety Stress Scale.
Conclusion: Healthcare personnel who provided obstetric and gynecologic services faced with unique challenges and difficulties experienced by other healthcare workers during the COVID-19 pandemic.

Keywords: COVID-19, Coronavirus Anxiety Scale, Maslach Burnout Inventory Depression Anxiety Stress Scale-21, Obstetricians and Gynecologists.

ÖZ

Giriş: Yeni koronavirüs enfeksiyonu (COVID-19) dünya çapında pandemiye neden olmuştur. Pandemi, sağlık çalışanları üzerinde ağır bir psikolojik yük oluşturmuştur. Obstetrik ve jinekoloji alanındaki sağlık hizmeti sağlayıcıları da benzer zorluklarla karşı karşıya kalmıştır.
Amaç: Bu çalışma, obstetrik ve jinekoloji uzmanlarının COVID-19 pandemisinden kaynaklanan psikososyal yüklerini ve endişelerini incelemiştir.
Yöntemler: Çalışmanın katılımcıları obstetrik ve jinekoloji uzmanlarından oluşmuştur. Katılımcılara kartopu örnekleme tekniği kullanılarak sosyal medya üzerinden ulaşılmıştır. Bu bir anket ve ölçek çalışmasıdır. Anket araştırmacılar tarafından oluşturulmuştur. Ankette katılımcıların demografik özellikleri ve COVID-19 pandemisinin yol açtığı sorunlar sorgulanmıştır. Ayrıca katılımcılara Maslach Tükenmişlik Envanteri, Koronavirüs Kaygı Ölçeği ve Depresyon Kaygı Stres Ölçeği-21 olmak üzere üç farklı ölçek uygulanmıştır.
Bulgular: Maslach Tükenmişlik Envanteri Kişisel Başarı ve Maslach Genel Tükenmişlik Envanteri için istatistiksel olarak anlamlı fark bulunmuştur. Pandemi hastanelerinde çalışan katılımcıların Maslach Tükenmişlik Envanteri Duyarsızlaşma ve Koronavirüs Kaygı Ölçeği puanları, bu hastanelerde çalışmayanlara göre istatistiksel olarak anlamlı derecede yüksektir. MANOVA sonuçlarına göre bağımsız değişkenler Maslach Tükenmişlik Envanteri Genel ölçeğindeki varyansın %35'ini, Koronavirüs Kaygı Ölçeği'ndeki %51'ini ve Depresyon Kaygısı Stres Ölçeği genelindeki varyansın %53'ünü açıklamaktadır.
Sonuç: Kadın doğum ve jinekolojik hizmetler sunan sağlık personeli, COVID-19 pandemisi sırasında kendine özel zorlukların yanında diğer sağlık çalışanlarının yaşadığı zorluklarla da karşılaşmıştır.

Anahtar Kelimeler: COVID-19, Koronavirüs Kaygı Ölçeği, Maslach Tükenmişlik Ölçeği Depresyon Kaygı Stres Ölçeği-21, Kadın Hastalıkları ve Doğum Uzmanları.

Introduction

The novel coronavirus infection (COVID-19), which started in December 2019, caused a worldwide pandemic. The disease also caused problems in Turkiye's healthcare services and medical resources (1). In addition to causing an overload in healthcare services, the pandemic also created a heavy psychological, physical, and social burden on healthcare workers (2). A report published in the first months of 2020, which was the pandemic's beginning, stated that psychiatric disorders are more common among healthcare workers compared to other sectors. It was noted that more than 70% of healthcare professionals had psychiatric disorders, and about 50% had depressive disorders (2,3). Italy was the first European country to face the pressure of the COVID-19 pandemic. Especially the north of the country was the

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first region to experience pressure on the health system and health service providers. The studies conducted in these areas showed high levels of burnout and psychosomatic symptoms caused by the pandemic in doctors, nurses, and other health professionals (4,5). It was reported that personnel providing health services in obstetrics and gynecology were at high risk of burnout and anxiety (6,7).

In addition to challenges unique to their field, healthcare providers in obstetrics and gynecology have faced similar challenges typical to other healthcare professionals during the COVID-19 pandemic. Like other healthcare professionals, they were obliged to comply with infection control measures and emergency protocols (8). They also had to cope with the problems specific to their fields, such as the management of COVID-19-positive women and the increasing frequency of intrauterine fetal death (9). Studies show that approximately 90% of mothers who tested positive for COVID-19 during delivery were asymptomatic (10). This situation created a tremendous psychological burden on the health personnel working in obstetrics and gynecology, especially obstetricians and gynecologists.

When the studies on the psychological burden of the COVID-19 pandemic are analyzed, it is seen that there are limited studies on healthcare providers in the field of obstetrics and gynecology. Therefore, this study eamined obstetricians' and gynecologists' psychosocial burdens and concerns due to the COVID-19 pandemic.

Methodology

Study Universe

The participants of the study consisted of obstetricians and gynecologists. The participants of the study were obstetricians and gynecologists. Members of the Gynecology and Obstetrics Association, of which researchers are also members, and the obstetricians and gynecologists reached through social media using the snowball sampling technique who agreed to participate in the research constituted the universe of the study.

Study Design

This is a survey and scale study. It was carried out in various secondary and tertiary healthcare institutions in Turkiye in November 2021. The researchers created the survey. The survey questioned the demographic characteristics of the participants and the problems caused by the COVID-19 pandemic in their field of work. Some of the characteristics questioned by the survey were included in the statistical analysis. These characteristics were compared with the results obtained from the scales.

The characteristics questioned by the questionnaire included in the statistical analysis:

1.Gender

2.The institution you work in

3.Is your institution a pandemic hospital?

4.Were you assigned to a pandemic ward?

5.Were you assigned to a pandemic ward? For how long?

6.Did you receive psychiatric treatment during the pandemic?

7.Was your treatment about the pandemic?

In addition to the survey created by the researchers, three different scales were applied to the participants. These are the Maslach Burnout Inventory (MBI), Coronavirus Anxiety Scale (CAS), and Depression Anxiety Stress Scale-21 (DASS-21) scales. All the surveys administered to the participants and their subscales are listed below:

- MBI,
  - -Emotional Exhaustion subscale,
  - -Depersonalization subscale,
  - -Personal Achievement subscale,
- CAS;
- DASS-21Anxiety subscale,
  - -Depression subscale,
  - -Stress subscale.

The surveys were delivered to the participants electronically. Each participant was informed about the research and surveyed by the researchers. The participants received and completed the surveys sorted and analyzed by the researchers. The survey form was delivered to 150 obstetricians and gynecologists. Of these, 134 people who completed the survey entirely and correctly were included in the study.

Scales

1.MBI

MBI examines the cognitive strategies used when dealing with emotional problems by people in occupations requiring face-to-face contact with others. Burnout is a three-dimensional condition that occurs in people who constantly work face-to-face with people. These dimensions are subdivided into emotional exhaustion, depersonalization, and decreased personal accomplishment. The inventory consists of 22 five-point Likert-type items with three dimensions; emotional exhaustion, depersonalization and personal accomplishment. The items contain sentences that reflect the participants' attitudes about their job. Emotional exhaustion, depersonalization and personal achievement are subscales of MBI (11). The questions are marked as shown below, according to the answer 1: Never, 2: Rarely, 3: Sometimes, 4: Usually, 5: Never

2.Depression, Stress and Anxiety Scale (DASS 21)

Lovibond and Lovibond developed it. The scale

consists of 3 subscales, namely anxiety, depression, and stress, and 21 items. The scale has a 4-point Likert-type rating of 0: Did not apply to me at all, 1: Somewhat apply to me, 2: Usually apply to me, and 3: Completely apply to me (12).

3.CAS

It is a scale developed to analyze people's anxiety levels caused by COVID-19. A comprehensive review of existing scales created its elements. It has a single-factor structure and is in a five-point Likert type. Accordingly, it is graded as 1: Strongly agree, 2: Agree, 3: Undecided, 4: Disagree, and 5: Strongly disagree (13).

Ethics

Ethical permissions for the study were obtained from the ethics committee of the institution where the researchers worked. There was no compulsion to participate in the research. Participants participated voluntarily.

Statistical Analysis

As descriptive data, the demographic characteristics of the participants were presented as frequency and percentage. An Independent sample T-test was used to determine whether demographic variables differ according to MBI, DASS, and CAS results. The MANOVA method was used to analyze four independent demographic variables and ten dependent variables consisting of the scale results to determine the socio-demographic variables affecting physicians' psychosocial burden and concerns. Correlation analysis was conducted to analyze the relationship between the three scales and their subscales applied to the participants. Regression analysis was conducted to measure the effect of COVID-19 anxiety on MBI and DASS and their subscales. In the model designed for regression analysis, MBI and DASS subscales were used as the dependent variable and CAS as the independent variable.

Results

The frequencies and percentages of the participants according to the socio-demographic variables are presented in Table 1. Accordingly, 85 (63.9%) participants were women, and 87 (65.4%) of the participants' institution was a pandemic hospital. Eighty-five participants (63.9%) were assigned to the pandemic ward. There were 24 (18%) participants who received psychiatric treatment a year ago; 12 received drug treatment, and 9 of the participants' treatment was about the pandemic.

The results of the further analysis of the demographic variables according to the MBI, DASS scale, and subscale and CAS scales are given in Table 2. Similarly, no statistically significant difference was found in terms of scale scores according to the gender of the participants, except for MBI Personal Achievement and MBI general ($p>0.05$). A difference was found for MBI Personal Achievement and MBI General ($p<0.05$), with women having a higher average than men.

Table 1. The findings on the socio-demographic variables of the participants

Variables	Frequency	Percent	Variables	Frequency	Percent
Age			Were you assigned to a pandemic ward?		
30 and under	31	23.3	No	48	36.1
31-34	35	26.3	Yes	85	63.9
35-38	33	24.8	Have you received psychiatric treatment in the last year?		
39 and above	34	25.6	No	109	82.0
Gender			Yes	24	18.0
Female	85	63.9	Was the treatment about the pandemic?		
Male	48	36.1	No	12	9.0
The institution you work for			Yes	12	9.0
Training Research Hospital	51	38.3	I did not receive any treatment	109	82.0
			What kind of treatment did you get?		
City Hospital	12	9.0	I did not receive any treatment	109	82.0
Public Hospital	49	36.8	Medication	16	12.0
Private Hospital	21	15.8	Psychotherapy	5	3.8
Is your institution a pandemic hospital?			Medication and psychotherapy	3	2.3
No	46	34.6			
Yes	87	65.4			

Table 2. The T-test results of the participants according to the socio-demographic variables

Variables	I	II	III	IV	V	VI	VII	VII	IX
Gender									
Female	3.081	2.162	3.726	3.107	2.649	0.657	1.096	1.133	0.962
Male	2.750	2.175	3.227	2.793	2.548	0.586	1,060	1.068	0.905
t	1.788	-0.086	3.335	2.923	0.621	0.518	0.243	0.457	0.436
p	0.,078	0.932	0.001	0.005	0.536	0.605	0.808	0.648	0.664
Is your institution a pandemic hospital?									
No	2.896	1.948	3.565	2.924	2.320	0.475	1.006	1.040	0.841
Yes	2.996	2.283	3.536	3.030	2.767	0.714	1.123	1.146	0.995
t	-0.590	-2.470	0.214	-1.094	-2.792	-1.751	-0.777	-0.745	-1.168
p	0.556	0.015	0.831	0.276	0.006	0.082	0.438	0.457	0.245
Were you assigned to a pandemic ward?									
No	2.815	2.067	3.599	2.930	2.539	0.467	0.866	0.938	0.757
Yes	3.044	2.224	3.516	3.029	2.654	0.724	1.205	1.207	1.045
t	-1.375	-1.147	0.558	-1.032	-0.707	-2.139	-2.316	-1.939	-2.239
p	0.172	0.253	0.578	0.304	0.481	0.034	0.022	0.055	0.027
Have you received psychiatric treatment in the last year?									
No	2.846	2.147	3.571	2.951	2.599	0.510	0.944	0.987	0.813
Yes	3.486	2.258	3.432	3.188	2.673	1.185	1.714	1.667	1.522
t	-3.160	-0.651	0.822	-3.007	-0.274	-2.966	-4.432	-4.106	-3.957
p	0.002	0.516	0.413	0.004	0.786	0.006	0.000	0.000	0.000

I= MBI Emotional Exhaustion; II=MBI Depersonalization; III=MBI Personal Achievement; IV=MBI; V= CAS; VI=DASS Anxiety; VII=DASS Depression; VIII=DASS Stress; IX= DASS

Table 3. The participants' MANOVA results on the socio-demographic variables

Independent Variable	Dependent Variable	Total Squares	SD	Average Squares	F	p	n2
Age	MAS Emotional Exhaustion	2.004	3	.668	1.024	.386	.030
	MAS Depersonalization	1.728	3	.576	1.228	.304	.036
	MAS Personal Achievement	.234	3	.078	.163	.921	.005
	MBI Full Scale	.638	3	.213	.861	.464	.025
	CAS	7.096	3	2.365	4.444	.006	.119
	DASS Anxiety	1.816	3	.605	1.723	.167	.050
	DASS Depression	2.483	3	.828	1.752	.161	.050
	DASS Avg. Stress	1.875	3	.625	1.586	.197	.046
	DASS Full Scale	1.910	3	.637	1.951	.126	.056
Institution	MAS Emotional Exhaustion	2.762	4	.690	1.058	.382	.041
	MAS Depersonalization	2.010	4	.502	1.071	.375	.041
	MAS Personal Achievement	1.595	4	.399	.834	.507	.033
	MBI Full Scale	.618	4	.154	.625	.646	.025
	CAS	2.485	4	.621	1.167	.330	.045
	DASS Anxiety	1.707	4	.427	1.214	.310	.047
	DASS Depression	3.432	4	.858	1.817	.132	.068
	DASS Avg. Stress	1.128	4	.282	.716	.583	.028
	DASS Full Scale	1.772	4	.443	1.358	.254	.052
Psychiatric treatment	MAS Emotional Exhaustion	5.341	2	2.671	4.091	.020	.076
	MAS Depersonalization	4.021	2	2.010	4.285	.016	.080
	MAS Personal Achievement	1.350	2	.675	1.412	.249	.028
	MBI Full Scale	.862	2	.431	1.745	.180	.034
	CAS	6.712	2	3.356	6.305	.003	.113
	DASS Anxiety	4.068	2	2.034	5.787	.004	.105
	DASS Depression	1.714	2	.857	1.815	.168	.035
	DASS Avg. Stress	1.816	2	.908	2.304	.105	.044
	DASS Full Scale	2.319	2	1.160	3.554	.032	.067
Type of treatment	MAS Emotional Exhaustion	.914	2	.457	.700	.499	.014
	MAS Depersonalization	.740	2	.370	.789	.457	.016
	MAS Personal Achievement	.125	2	.062	.131	.878	.003
	MBI Full Scale	.212	2	.106	.429	.653	.009
	CAS	3.112	2	1.556	2.924	.058	.056
	DASS Anxiety	.163	2	.082	.232	.793	.005
	DASS Depression	.500	2	.250	.529	.591	.011
	DASS Avg. Stress	.418	2	.209	.531	.590	.011
	DASS Full Scale	.308	2	.154	.473	.625	.009
Error	MAS Emotional Exhaustion	64.620	99	.653			
	MAS Depersonalization	46.450	99	.469			
	MAS Personal Achievement	47.348	99	.478			
	MBI Full Scale	24.456	99	.247			
	CAS	52.694	99	.532			
	DASS Anxiety	34.792	99	.351			
	DASS Depression	46.756	99	.472			
	DASS Avg. Stress	39.006	99	.394			
	DASS Full Scale	32.303	99	.326			
Total	MAS Emotional Exhaustion	1280.309	133				
	MAS Depersonalization	700.360	133				
	MAS Personal Achievement	1746.266	133				
	MBI Full Scale	1229.465	133				
	CAS	1014.571	133				
	DASS Anxiety	128.327	133				
	DASS Depression	245.510	133				
	DASS Avg. Stress	243.449	133				
	DASS Full Scale	187.082	133				
Corrected Total	MAS Emotional Exhaustion	113.779	132				
	MAS Depersonalization	75.854	132				
	MAS Personal Achievement	73.859	132				
	MBI Full Scale	37.641	132				
	CAS	107.003	132				
	DASS Anxiety	75.274	132				
	DASS Depression	89.600	132				
	DASS Avg. Stress	79.710	132				
	DASS Full Scale	69.242	132				

a. R Squared = .432 (Adjusted R Squared = .243), b. R Squared = .388 (Adjusted R Squared = .184), c. R Squared = .359 (Adjusted R Squared = .145), d. R Squared = .350 (Adjusted R Squared = .134), e. R Squared = .508 (Adjusted R Squared = .343), f. R Squared = .538 (Adjusted R Squared = .384), g. R Squared = .478 (Adjusted R Squared =.304), h. R Squared = .511 (Adjusted R Squared =.348), i. R Squared = .533 (Adjusted R Squared = .378)

Table 4. The correlation analysis results of the scales used in the study

	1	2	3	4	5	6	7	8	9
MBI Full Scale (1)	1								
MAS Emotional Exhaustion (2)	.702**	1							
MAS Depersonalization (3)	-.150	-,.53**	1						
MAS Personal Achievement (4)	.862**	.693**	.321**	1					
CAS (5)	.324**	.308**	-.057	.301**	1				
DASS Full Scale (6)	.488**	.384**	-.214*	.362**	.502**	1			
DASS Anxiety (7)	.605**	.455**	-.234**	.458**	.324**	.737**	1		
DASS Depression (8)	.605**	.421**	-.146	.491**	.366**	.750**	.836**	1	
DASS Avg. Stress (9)	.615**	.457**	-.215*	.475**	.428**	.895**	.934**	.935**	1
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

Table 5. Regression analysis results for the scales used in the study

Dependent Variable	Independent variable	Unstandardized Coefficients		Standardized Coefficients	t	p	R	R^2	F	P
		B	Std. Error	β						
DASS-21	Constant	0.042	0.175		0.239	0.812	0.428	0.183	29.383	0.000
	COVID-19 anxiety	0.344	0.064	0.428	5.421	0.000				
DASS Anxiety	Constant	-0.467	0.175		-2.670	0.009	0.502	0.252	44.049	0.000
	COVID-19 anxiety	0.421	0.063	0.502	6.637	0.000				
DASS Depression	Constant	0.309	0.209		1.479	0.142	0.324	0.105	15.331	0.000
	COVID-19 anxiety	0.296	0.076	0.324	3.916	0.000				
DASS Stress	Constant	0.284	0.194		1.466	0.145	0.366	0.134	20.279	0.000
	COVID-19 anxiety	0.316	0.070	0.366	4.503	0.000				
MBI	Constant	2.528	0.137		18.518	0.000	0.301	0.090	13.018	0.000
	COVID-19 anxiety	0.178	0.049	0.301	3.608	0.000				
MBI Emotional Exhaustion	Constant	2.089	0.235		8.874	0.000	0.324	0.105	15.348	0.000
	COVID-19 anxiety	0.334	0.085	0.324	3.918	0.000				
MBI Depersonalization	Constant	1.489	0.193		7.703	0.000	0.308	0.095	13.764	0.000
	COVID-19 anxiety	0.260	0.070	0308	3.710	0.000				
MBI Personal Achievement	Constant	3.670	0.200		18.337	0.000	0.057	0.003	0.431	0.513
	COVID-19 anxiety	-0.048	0.072	-0.057	-0.656	0.513				

The MBI Depersonalization and CAS scores of the participants working in pandemic hospitals were statistically significantly higher than those not working in these hospitals ($p<0.05$).

A difference was found in the DASS Anxiety, DASS Depression, and DASS-21 overall scale scores of the participants assigned to pandemic wards ($p<0.05$). Their scores are higher than those who were not assigned to pandemic wards.

Participants who received psychiatric treatment in the last year had higher MBI Emotional Exhaustion, MBI General, DASS Anxiety, DASS Depression, and DASS-21 General scores than those who did not. A statistically significant difference was found between the groups ($p<0.05$).

To determine the variables affecting obstetricians' and gynecologists' psychosocial burden and concerns, four independent demographic variables and ten dependent variables consisting of scale results were analyzed. The MANOVA method was used in the analysis. The results are presented in Table 3. In this respect, the analyzed independent variables explained 35% of the variance in the MBI General scale, 43% in the Emotional Exhaustion subscale, 39% in the Depersonalization subscale, and 36% in the Personal Achievement subscale. 51% of the variance in the CAS scale can be explained by the independent variables analyzed. It explained 53% of the variance in the overall DASS-21, 54% in the Anxiety subscale, 48% in the Depression subscale, and 51% in the Stress subscale.

Correlation analysis determined the relationships between the MBI burnout scale, Depression Anxiety Stress Scale (DASS), CAS and their subscales. The results are given in Table 4. There was statistically significant relations at different levels between the MBI burnout scale, Depression Anxiety Stress Scale (DASS), CAS and their subscales.

There is a statistically significant, positive, and moderate relationship between MBI emotional exhaustion and personal achievement subscales and CAS ($r=.384$; $p<0.01$, $r=.301$; $p<0.01$ respectively).

A statistically significant, positive, and moderate relationship was found between the CAS and the anxiety, depression, and stress subscales of the DASS-21 scale, ($r=.324$; $p<0.01$), ($r=.366$; $p<0$). .01) and ($r=.428$; $p<0.01$) respectively.

The hypothesis is that COVID-19 anxiety, determined with CAS through the correlation analysis results, has a positive and significant effect on MBI ($\beta= 0.301$) and

DASS (β= 0.428) scales and subscales was analyzed with regression analysis. The results obtained according to the constructed model are given in Table 5. Thereby, the model is statistically significant (F= 29.383; p=0.000-F=13.018; p=0.000). The model used MBI and DASS and their subscales as the dependent variable and COVID-19 anxiety as the independent variable. The results show that CAS has a positive and significant effect on BMI (β= 0.301) and DASS (β= 0.428) (p<0.001). In the model, COVID-19 anxiety explains 9% of the total variance for MBI and 18.3% for DASS. In addition, the effect of COVID-19 anxiety on the subscales of the MBI and DASS scales was studied. It was determined that COVID-19 anxiety significantly affected all subscales of DASS. On the other hand, for MBI, it was determined that while it had a significant effect on Emotional Exhaustion and Depersonalization subscales, it did not affect Personal Achievement.

Discussion

The COVID-19 pandemic caused the health system to overload. Health systems and workers were subjected to tremendous pressure. The fight against the pandemic created an extremely high psychological burden on doctors, nurses, and other health workers on the front line (14–16).

Data from studies on the impact of the pandemic on doctors' mental health generally showed the same conclusion. The psychological burden on doctors increased during the pandemic period. A study conducted during the COVID-19 pandemic shows that doctors' psychological conditions such as depression, anxiety, stress, and burnout increased (17). In the same period, a mental health study on orthopedists revealed that generalized anxiety and major depression were three and six times higher in orthopedists than in the general population (18).

Obstetricians and gynecologists are among the doctors who feel the psychological burden caused by the COVID-19 pandemic. During this period, obstetricians and gynecologists had to operate on pregnant women with infections. Managing COVID-19 clinics, decreasing staff numbers, changing shift models, and additional protocols effectively increased the psychological burden. Like other healthcare professionals, obstetricians and gynecologists faced the fear of contracting the infection and spreading it to their loved ones and had to live in isolation from their families.

The psychosocial burdens and concerns resulting from the pandemic of obstetricians and gynecologists have been less studied than other issues. One of the first studies in this area was conducted in the United Kingdom (19). The study is a cross-sectional, survey-based study similar to ours. Major depressive disorders and generalized anxiety symptoms were screened on the participants, and the importance of contributing factors and the effects of mental health on workplace behavior were studied. The results revealed that the participants showed a high rate of major depressive disorders and generalized anxiety disorder symptoms. Subgroup analysis showed that anxiety was more common among female physicians than male physicians.

Unlike this study, our study analyzed individuals' ability to cope with emotional problems, emotional exhaustion and depersonalization characteristics. For this purpose, three different scales were used, and the subscales of the scales were also included in the analysis. Thus, the psychological burden on the participants working in obstetrics and gynecology was analyzed from a broader perspective. The results showed no statistically significant difference between the genders except for MBI Personal Achievement and MBI General. Men and women are similar in terms of other scale scores. Studies say women are more vulnerable to experiencing stress and developing post-traumatic symptoms. This is explained by the differences in stress reaction systems and the effort to contribute more to family management (20). Anxiety and mood disorders are higher in women (21). Although women scored higher on our study's DASS anxiety and depression scale, this was not statistically significant. This situation may be attributed to the number of participants.

The MBI Depersonalization and CAS scores of the participants working in pandemic hospitals were statistically significantly higher than those not working in these hospitals. DASS-21 is a self-report scale that measures negative emotional states such as depression, anxiety and stress. Our study found a difference in the DASS anxiety, DASS depression and DASS-21 overall scale scores of the participants assigned to pandemic wards. Their scores were higher than those not assigned to pandemic wards. Especially the difference in DASS depression scores is remarkable. This supports the results of the study conducted in the United Kingdom. Participants who received psychiatric treatment in the last year had higher MBI Emotional Exhaustion and MBI General scores than those who did not. Although the difference is not statistically significant, emotional burnout detected by MBI may be the factor that causes depressive symptoms.

Pandemics increase the psychological burden on pregnant women. Depressive disorders are more common in these women (22). According to the results of a study, the psychological and physical burden of obstetricians and gynecologists was higher than pregnant women during the COVID-19 pandemic. This trend was more pronounced in regions where the number of infected patients was high (23). Our study did not study pregnant women. However, our study's main finding was that the physical and psychological burden of obstetricians and gynecologists increased.

The second data obtained from the same study was that heavy personal protective equipment could increase the psychological and physical burden. This conclusion was reached in the first months of 2020 when the research was conducted. Those months were the first period of the pandemic. Information on COVID-19 was limited, COVID-19 PCR tests were unavailable,

and transmission data was unclear. Therefore, the factor that increased the psychological and physical burden was not heavy personal protective equipment but the uncertainty regarding the pandemic.

Another survey study, designed similarly to ours, was conducted on obstetricians and gynecologists working in four hospitals in Italy (9). The difference between that study and ours is that other healthcare staff working in obstetrics and gynecology were also included. This is important in providing a holistic perspective on the psychological and physical burden of health personnel working in the field of obstetrics and gynecology.

The study conducted in Italy determined the psychological and physical burden of the participants with the help of a scale. The IPSICO survey developed by the researchers was applied to the participants. It was determined that half of the participants who completed the survey were exposed to a clinically significant psychological burden. This result is consistent with those obtained in our study and some other studies (2,24). Participants assigned to pandemic wards scored statistically significantly higher in the DASS-21 general and anxiety and depression subscales. The CAS scores of the participants working in pandemic hospitals were also statistically significantly higher than those who did not. Since the analysis was made with three different scales in our study, exposure to psychological burden was studied from a broader perspective.

In a similar study conducted in the United Kingdom, exposure to psychological burden was lower than in the study conducted in Italy (19). It was evaluated that the difference between the studies was due to the scales applied. In support of this, the results of the study conducted in China, in which the same scales were applied as the study conducted in the United Kingdom, were compatible with the United Kingdom study(25).

Unlike the general studies on the psychological burden of COVID-19 on healthcare staff, our study used the MANOVA method. MANOVA can analyze more than one dependent variable. It tests the extent to which the independent variable explains statistically significant variance in the dependent variable. In our study, four independent demographic variables were analyzed to determine the variables affecting the psychosocial burden and anxiety of the participants. It was determined to what extent the variables explained the scores obtained from the scales and subscales.

Our study analyzed the hypothesis that COVID-19 anxiety, detected by CAS, has a positive and significant effect on BMI and DASS scales and their subscales by regression analysis. The results showed that CAS positively and significantly affected MBI and DASS. 9% of the total variance for MBI and 18.3% for DASS can be explained by COVID-19 anxiety. It was determined that COVID-19 anxiety significantly affected all subscales of DASS.

One of the strengths of our study is that it used three scales that objectively measured psychological burden. This way, besides the anxiety and depression levels of the participants, parameters such as emotional burnout and stress levels were also analyzed. Another strength of ours is the examining of the scale results using advanced statistical analysis. This allowed us to study the psychological states of obstetricians and gynecologists from a holistic perspective.

One of the limitations of this study stems from the snowball sampling technique. The data is not representative of every institution. Only some obstetricians and gynecologists could be reached. Therefore, caution is essential when generalizing the results of the study. Another limitation is that the study only included specialist doctors in obstetrics and gynecology.

Conflict of interest

No author reports any conflict of interest

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Ethics Committee Approval

Ethical approval was obtained from the institution's ethics committee where the study was conducted.

Author contributions

MCA, AHG, AC study design, FA, AG, MA data analyze and manuscript, CC literature review.

Data availability statement

Data are not publicly available but may be accessed upon request.

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