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The relationship between psychological well-being with levels of anxiety, COVID-19 fear and depression in individuals hospitalized with COVID-19

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ABSTRACT

Introduction and aim. The COVID-19 pandemic negatively affected both the physical and mental health of societies. The present study was conducted to determine the relationship between psychological well-being with levels of anxiety, COVID-19 fear, and depression in individuals hospitalized with COVID-19.

Material and methods. This descriptive correlative study was conducted with 685 individuals diagnosed with COVID-19 treated in the clinics of a pandemic hospital. The data of the study were collected with the information form, psychological well-being scale (PWBS), COVID-19 fear scale (FCV-19S), and hospital anxiety and depression scale (HADS).

Results. The mean PWBS score of the participants was 37.21±14.3, the FCV-19S score was 20.10±10.41, the HADS-anxiety score was 9.07±7.29, and the depression score was 10.74±7.35. The PWBS scores with FCV-19S scores of the participants, HADS-anxiety, and HADS-depression scores were found to be negatively correlated ($p<0.001$).

Conclusion. In conclusion, as the anxiety, fear, and depression levels experienced by individuals receiving inpatient treatment in a pandemic hospital due to COVID-19 increase, their psychological well-being levels decrease at a statistically significant level. It may be recommended to intervene in the anxiety, fear, and depressive symptoms of individuals receiving inpatient treatment due to a diagnosis of COVID-19 to increase their psychological well-being.

Keywords. anxiety, COVID-19, depression, fear, psychological well-being

Introduction

The novel coronavirus disease (COVID-19) affected both the physical and mental health of individuals and communities negatively.[1,2] The pandemic spread rapidly all over the world, causing intense psychological pressure with the risk of death.[3] Besides the physical manifestations of infectious diseases e.g., COVID-19.[4,5] It is reported that it can also cause psychiatric problems such as anxiety, fear, depression, panic attacks, somatic symptoms, sleep problems, post-traumatic stress disorder, and even suicidal tendencies.[6,7] This conclusion was shared that during 2020, the pandemic led to a 27.6% increase in major depressive disorder cases and a 25.6% increase in anxiety disorder cases worldwide.[8]

It was reported that practices such as quarantine, isolation, and social distance cause psychological problems such as depression, loneliness, and anxiety.[9,10] It was reported that patients who were quarantined were more likely to experience depression and anxiety than those who were not.[11]

Another finding caused by the COVID-19 pandemic is fear.[12,13] People who were not infected with COVID-19 reported fear of coming into contact with people infected with COVID-19.[14] This caused the stigmatization and social exclusion of individuals who were diagnosed with or recovered from COVID-19. It was reported that this may increase the risk of developing mental health problems such as adjustment disorder and depression.[15]

It was found that studies conducted to determine the psychosocial impact of COVID-19 are mostly conducted with healthcare workers.[16-18] In a study in which the COVID-19 pandemic and mental health outcomes were systematically examined, it was reported that the sample of only two of the 43 studies evaluated was individuals with a diagnosis of COVID-19. It was also stated in the same study that individuals with a diagnosis of COVID-19 experienced high levels of post-traumatic stress symptoms and significantly higher depressive symptoms than other individuals.[19]

Current global disasters and pandemics affect the mental health of societies. It is important to keep the issue on the agenda to be prepared for disasters and pandemics. Studies evaluating the direct neuropsychiatric consequences of COVID-19 and its indirect effects on mental health are greatly needed for mental health care planning and preventive measures during possible subsequent pandemics.[19] In this respect, it is considered that studies evaluating the psychological well-being of individuals diagnosed with COVID-19 and their psychological symptoms such as anxiety, depression, and fear are needed. It is thought that being treated, especially in a hospital environment, may have a more negative impact on the mental health of individuals diagnosed with COVID-19. As a matter of fact, hospitalization due to COVID-19 has been found to increase the risk of new-onset mental disorders compared to the general population not hospitalized due to COVID-19.[20] In this way, psychological interventions can be developed to cope with the psychological effects caused by the epidemic. It is thought that the results of this study can be used in planning psychosocial interventions for patients hospitalized in pandemic hospitals under quarantine conditions.

Aim

The present study aimed to determine the relationship between the psychological well-being of individuals receiving treatment in the COVID-19 clinic of a pandemic hospital and their anxiety, fear of COVID-19, and depression levels.

Material and methods

Study design and participants

The study had a descriptive and correlational design. The data of the study were collected in a hospital in the Central Anatolia Region of Türkiye, affiliated with the Ministry of Health, serving as the largest pandemic hospital in the region.

Convenience sampling was used as the sample selection method in the study.[21] In July and August 2020, when the study was conducted, a total of 693 participants were included in the study, and the data collection process of the study was terminated with 685 individuals diagnosed with COVID-19 who met the inclusion criteria.

Inclusion criteria

- Receiving inpatient treatment at the hospital where the study was conducted
- PCR test (+)
- Ability to communicate verbally
- Being over 18 years old
- Volunteering to participate in the study

Exclusion criteria

- PCR test (-)
- Having a physical or mental illness that prevents communication
- The need for intense oxygen

Two patients were excluded from the study during the data collection process because of the diagnosis of dementia, 1 patient requiring intense oxygen and 5 patients not accepting to participate in the study.

Data collection

The data were collected by the first researcher between July and August 2020. Because of the risk of COVID-19 transmission, the telephone interview method was used to collect the data. The patient list and the internal phone numbers of the rooms where the patients were located were obtained from the responsible health personnel by visiting the pandemic hospital every morning during the data collection process.

Preliminary information about the patients was obtained from the responsible health staff and patients who did not meet the inclusion criteria were not included in the study. The patients were called by the first researcher and brief information about the study was given. Then, the patient was asked whether he or she would volunteer to participate in the study. Due to pandemic conditions, the researchers did not contact the participants. Two telephone interviews were held with the participants. During the first phone call, participants were informed about the study and their verbal consent was obtained. Written consent was then obtained by the responsible healthcare personnel in accordance with the pandemic conditions. A survey was conducted by the researcher during the second phone call. The questions included in the data collection tools were asked of the patients who agreed to participate in the study. The interview with each patient lasted an average of 15–20 minutes. A preliminary application was conducted with 10 individuals to evaluate the data collection tools and data collection method. After pre-application individuals who were pre-implemented as no changes were made were included in the study.

Data collection tools

The data of the study were collected with the information form, psychological well-being scale, COVID-19 fear scale, and hospital anxiety and depression scale.

Information form

This form was prepared by researchers according to the literature data. [18,22] The form included sociodemographic characteristics. Also, the participants' COVID-19 symptoms, taking protective measures against COVID-19, having COVID-19 + in their relatives, mental and/or physical illness, and continuous use of drugs were evaluated in this form. There are twenty questions in the information form

Psychological well-being scale (PWBS)

Psychological well-being includes important elements from positive relationships that support human well-being to having a purposeful life. It was developed by Diener in 2010.[23] Turkish validity and reliability was made by Telef in 2013, and was found to be 0.80. It is a 7-point Likert-style one-dimensional scale that consisted of eight positive items. The score obtained from the scale varies between 8–56. A high score indicates that the person has many psychological resources and power.[24] In this study, Cronbach's alpha value of the scale was found to be 0.971.

COVID-19 fear scale (FCV-19S)

The scale was developed by Ahorsu et al. and its Turkish adaptation was conducted by Satıcı et al. as a 7-item, 5-point Likert style scale.[12,25] The total score obtained from the scale varies between 7 and 35. A high score on the scale indicates a high level of fear of COVID-19. The scale was shown to have strong

psychometric properties, including high internal consistency (α=0.82).[12] In this study, Cronbach's alpha value of the scale was found to be 0.973.

Hospital anxiety and depression scale (HADS)

The scale was developed by Zigmond et al. in 1983 and the validity and reliability study was carried out by Aydemir et al.[26,27] The scale aims to determine the risk group by screening for anxiety and depression in a short time in patients with physical illness. Depression and anxiety are evaluated with the help of two subscales. HADS, which consists of 14 items in total, consists of 7 items of HADS-Anxiety and 7 items of HADS-depression subscales. The lowest score for each sub-dimension is 0 and the highest score is 21. The cut-off point of the anxiety subscale of the HADS Turkish version is 10, and the cut-off point for the depression subscale is 7. Patients who have scores above these points are considered a risk group.[27]

The reliability coefficients of the anxiety and depression sub-dimensions of the HADS scale for the Turkish patient group were determined as 0.85 and 0.78, respectively.[27] In this study, Cronbach's alpha values were found to be 0.965 for the HADS-Anxiety subscale and 0.962 for the HADS-Depression subscale.

Ethics approval

After the approval of the Ministry of Health (Approval No: 2020-05-28T23-23-45) and the permission of the pandemic hospital where the study was conducted, and approval from the Nevşehir Hacı Bektaşi Veli University Non-Interventional Clinical Research Ethics Committee (Approval No: 2020.15.180.) the study was initiated. Verbal informed consent was obtained from the participants in the study, adhering to the principles of the Declaration of Helsinki. In addition, permission was obtained from the authors for the scales used in this study.

Analysis of data

The data analysis was performed by using the SPSS 22.0 (IBM, Armonk, NY, USA) statistical package program. Descriptive data were evaluated by using percentage calculation, mean, standard deviation, and minimum and maximum values. The Shapiro-Wilk test was used to test normality. Parametric tests were used as the data were following the normal distribution. The Independent Samples T-test was used in paired groups to compare the data. The One-Wav ANOVA Test was used in more than two groups and Hochberg's GT2 post hoc test was used to determine the group that determined the difference between groups. The relationship between the scores of the PWBS and the FCV-19S, HADS-anxiety, and HADS-depression subscales was evaluated with the Pearson correlation analysis, and $p<0.05$ was accepted as a statistical significance level.

Results

The mean age of the participants (n=685) was found to be 52.88±14.22, 52.1% were male, 87.4% were married, and 54.2% were primary school graduates. 39.6% of the participants worked in an income-generating job and 77.7% of them had a medium income. The income level of 33.3% of them decreased during the pandemic period. The rate of those who had to work during the quarantine period was 19% (Table 1).

The participants who were 66 years of age and older had a significantly lower PWBS score (27.1±13.5) when compared to other age groups (p<0.001). Women's (31.55±13.25) PWBS scores were significantly lower than men's (42.41±13.24) (p<0.001). Those who were literate (28.8±14.5) and primary school graduates (33.83±14.2) had a significantly lower PWBS score than those who graduated from high school and university and above (p<0.001). Those who did not work (32.06±13.7), whose income was moderate (36.32±14.25) and poor (36.55±14.16), and who did not have to work during the quarantine period (36.05±14.63) had a significantly lower total PWBS score than the others (p<0.001). There were no significant differences between the change in the income status of the participants during the pandemic period and the participants' PWBS scores (p>0.05) (Table 1).

Table 1. Comparison of participants' personal characteristics and PWBS total scores*****

Personal characteristics	**n**	**%**	**PWBS Mean±SD**	**Statistical analysis**	**Significant difference (post hoc)[a]**
Age group					
45 and below	212	30.9	41.41±12.48	F=57.290	1–3 (p<0.001)
46-65	324	50.7	39.24±13.63	p<0.001	2–3 (p<0.001)
66 and over	149	18.4	27.10±13.5		
Age (year) mean±SD (min–max)			52.88±14.22 (19–91)		
Gender					
Female	328	47.9	31.55±13.25	t=-10.720	-
Male	357	52.1	42.41±13.24	p<0.001	-
Marital status					
Married	599	87.4	37.27±14.35	t=0.317	-
Single	86	12.6	36.75±14.09	p=0.752	-
Education					
Literate	35	5.1	28.80±14.5	F=28.793	1–3 (p<0.001)

Primary school	371	54.2	33.83±14.2	p<0.001	1–4 (p<0.001)
High school	129	18.8	41.35±12.8		2–3 (p<0.001)
University and over	150	21.9	43.96±11.8		2–4 (p<0.001)
Working					
Yes	271	39.6	45.08±11.33	t=13.520	-
No	414	60.4	32.06±13.70	p<0.001	-
Income					
Good	73	10.7	44.41±12.91	F=10.636	1–2 (p<0.001)
Middle	532	77.7	36.32±14.25	p<0.001	1–3 (p=0.002)
Bad	80	11.7	36.55±14.16		
Have to work in quarantine					
Yes	130	19.0	42.16±11.66	t=5.104	-
No	555	81.0	36.05±14.63	p<0.001	-
Income change during the pandemic					
No	427	62.3	37.07±14.52		
İncreased	30	4.4	32.83±14.67	F=1.823	-
Decreased	228	33.3	38.05±13.79	p=0.162	-

* PWBS – psychological well-being scale, t – independent samples T-test, F – the one-way ANOVA, a – post hoc analysis Hochberg'S GT2

A total of 83.9% of the participants said that they took protective measures against COVID-19 (Mask, distance, hygiene) 67.3% reported that their relatives had COVID-19+ individuals and 3.8% of them reported that they had a diagnosis of a mental illness, 35.3% of them had a diagnosis of chronic physical disease (diabetes mellitus: 21.8%, hypertension 20.3%, COPD or asthma: 2.3%) and 34.6% of them said that they had at least one drug that they used constantly. It was determined that 45.4% of the participants experienced anxiety and 55.2% experienced depression (Table 2).

The participants who did not take protective measures against COVID-19 (33.81±15.1; p=0.007) and those who had COVID-19+ in their relatives (35.08±14.49; p<0.001) had significantly lower PWBS scores. Those with a current diagnosis of mental and/or physical illness had a significantly lower PWBS total score (p<0.001) and those who currently had diabetes, hypertension, COPD, or asthma and who used continuous medication had a significantly lower total PWBS score (p<0.001). According to HADS, participants who experienced anxiety (24.71±9.16, p<0.001) and depression (26.84±9.94, p<0.001) had significantly lower PWBS scores (Table 2).

Table 2. Comparison of participants' personal and clinical characteristics with PWBS score*****

Characteristics	n	%	PWBS Mean±SD	Statistical analysis
Protective measures against COVID-19				
Yes	575	83.9	37.86±14.07	t=2.729
No	110	16.1	33.81±15.1	p=0.007
COVID-19+ in relatives				
Yes	461	67.3	35.08±14.49	t=-5.943
No	224	32.7	41.58±12.88	p<0.001
Diagnosed mental illness				
Yes	26	3.8	27.88±13.04	t=-3.415
No	659	96.2	37.58±14.24	p<0.001
Diagnosed chronic physical illness[a]				
Yes	242	35.3	29.72±13.39	t=-10.973
No	443	64.7	41.30±13.09	p<0.001
Diabetes				
No	536	78.2	39.73±13.78	t= 9.856
Yes	149	21.8	28.13±12.39	p<0.001
Hypertension				
No	546	79.7	39.15±13.7	t=7.306
Yes	139	20.3	29.58±14.14	p<0.001
COPD or asthma				
No	665	97.1	37.44±14.25	t=2.439
Yes	20	2.9	29.55±14.23	p=0.015
Continuous drug use				
Yes	237	34.6	29.78±13.5	t=-10.658
No	448	65.4	41.14±13.13	p=0.001
HADS-anxiety subscale				
Non anxiety	374	54.6	47.60±8.19	t=34.498
Anxiety	311	45.4	24.71±9.16	p=0.001
HADS-depression subscale				
Non depression	307	44.8	49.98±6.28	t=35.417
Depression	378	55.2	26.84±9.94	p=0.001

* [a] – there are individuals with more than one chronic physical illness, t – independent samples T-test

A total of 40.9% of the participants had a cough, 33.7% had respiratory distress, 25% had a fever, and 21% had joint and muscle pain symptoms. Participants who experienced cough, respiratory distress, fever, and joint and muscle pain symptoms had a significantly lower PWBS total score than those who did not ($p<0.05$) (Table 3).

Table 3. Comparison of participants' COVID-19 symptoms with PWBS total scores*

COVID-19 Symptoms	n	%	PWBS Mean±SD	Statistical analysis
Respiratory distress				
No	454	66.3	40.04±13.94	t=7.556
Yes	231	33.7	31.64±13.37	p<0.001
Cough				
No	405	59.1	39.83±13.86	t=5.919
Yes	280	40.9	33.41±14.10	p<0.001
Fever				
No	514	75	38.29±14.48	t=3.605
Yes	171	25	33.96±13.29	p=0.001
Joint and muscle pain				
No	541	79	37.89±14.11	t=2.411
Yes	144	21	34.66±14.78	p=0.016

* t – independent samples T-test

The mean PWBS score of the participants was 37.21±14.3, the FCV-19S total score was 20.1±10.41, the HADS-anxiety subscale total score was 9.07±7.29, and the HADS-depression subscale total score was 10.74±7.35 (Table 4).

Table 4. Participants' PWBS, FCV-19S, HADS scores*

Scales	Mean±SD	Min-max
PWBS	37.21±14.3	8–56
FCV-19S	20.10±10.41	7–35
HADS-anxiety subscale	9.07±7.29	0–21
HADS-depression subscale	10.74±7.35	0–21

* PWBS – psychological well-being scale, FCV-19S – COVID-19 fear scale, HADS – hospital anxiety and depression scale

A significant relationship was detected between the participants' PWBS scores and their FCV-19S, HADS-Anxiety subscale, and HADS-Depression subscale scores. There was a significant and negative correlation between the participants' PWBS and FCV-19S scores (r=-0.883, p<0.001). A significant and negative correlation was detected between the participants' PWBS scores and HADS-Anxiety subscale (r=-0.878, p<0.001) and HADS-Depression subscale (r=-0.874, p<0.001) scores (Table 5).

Table 5. The relationship between participants' FCV-19S, PWBS, HADS scores*

Scales	1	2	3	4
1 FCV-19S	1			
2 HADS-anxiety subscale	r=0.957[a] p<0.001	1		
3 HADS-depression subscale	r=0.945[a] p<0.001	r=0.957[a] p<0.001	1	
4 PWBS	r=-0.883[a] p<0.001	r=-0.878[a] p<0.001	r=-0.874[a] p<0.001	1

* [a] – Pearson correlation analysis

Discussion

In the present study, which was conducted to determine the relationship between the psychological well-being of individuals receiving treatment in the COVID-19 clinic and the levels of anxiety, fear of COVID-19, and depression.

The psychological well-being of COVID-19+ patients aged 66 and over, female, with low education and income level was found to be significantly lower than the other groups. In a previous study, it was reported that especially women and individuals with low education levels have more psychological problems and suffer from insomnia in risky situations.[28] In other studies, depression and anxiety were found to be significantly higher in COVID-19+ women.[29-32] It can be said that women are more affected by COVID-19 psychologically.[33] Advanced age is an important factor in coping with COVID-19. In the study evaluating the fear of COVID-19 infection in the elderly population and its relationship with depressive and anxiety symptoms. It was determined that individuals who are more concerned about having the disease develop more anxiety and depression symptoms during the COVID-19 epidemic.[34] Similar to the literature, it can be said that the psychological well-being of elderly individuals is negatively affected by COVID-19. Another reason for this may be the chronic diseases of elderly individuals. In this study, it was determined that the psychological well-being of the participants with a current diagnosis of mental and/or physical disease and those who currently have diabetes, hypertension, COPD, or asthma and who use drugs

continuously are significantly lower. Studies have shown that the rate of depression and anxiety is high in patients with chronic heart disease and diabetes.[35-37] These results are consistent with our study findings. Also, COVID-19 may have caused anxiety and depression as a result of fear of death, especially in individuals with chronic diseases. Also, individuals who do not pay attention to protective measures and because of the risk of infecting their relatives with COVID-19 may be adversely affected psychologically. In support of this view, it was determined that the psychological well-being of the participants who did not take protective measures against COVID-19 and whose relatives had COVID-19+ was significantly lower. The difficulty experienced by COVID-19 symptoms may be another reason why participants feel psychologically negative during the disease period. The psychological well-being of participants who did not experience symptoms of cough, respiratory distress, fever, joint and muscle pain was better ($p<0.05$). Participants who experienced anxiety and depression and those who experienced cough, respiratory distress, fever, and joint and muscle pain symptoms had significantly lower PWBS scores than those who did not. Since these findings will create the perception that the disease is getting worse, it may cause the individual to feel worse. Also, individuals who are not economically well may have experienced anxiety because of the financial burden of the treatment process of the disease. In a previous study, it was reported that uncertainty, social discrimination, and poor economic situation caused anxiety in patients.[38]

It is a fact that the COVID-19 pandemic affects individuals and societies in many ways. It is stated that new cases of anxiety and depressive disorders have been added with the pandemic. It was reported that 53.2 million additional major depressive disorder cases and 76.2 million additional anxiety disorder cases are added worldwide.[8,22,39] In the present study, anxiety and depressive symptoms were detected in approximately half of the participants. It was particularly noteworthy that the mean score of the HADS-Depression subscale was higher than the cut-off score. In previous studies conducted with individuals diagnosed with COVID-19 in 5 different countries, it was determined that 7.7-34.72% of patients experienced anxiety symptoms and 8.0-40.0% depression symptoms.[29,30,32,33,40-42] It can be reported that the anxiety and depressive symptoms experienced by the individuals in this study were relatively higher than in other studies. In this study, it is considered that the psychological well-being of individuals and many factors that will affect this may be related to anxiety and depressive symptoms. However, it is considered in this study that the sample is individuals in the acute phase of the disease receiving treatment in the pandemic hospital and the fear caused by COVID-19. As a matter of fact, when the relationship between fear of COVID-19 and other psychological variables in this study is evaluated, the result supports this view. It was determined in this study that there was a negative significant relationship between the participants' PWBS scores and their FCV-19S, HADS-anxiety, and HADS-depression scores. In other words, as the psychological well-being of the participants decreases, the fear of COVID-19, anxiety, and depression levels increase. In a study conducted previously on the subject, a positive and significant relationship was found between fear of COVID-19 and anxiety and depression, similar to the findings of our study.[43] It was

found in another study that while fear and anxiety were very high in the period before catching COVID-19 and during the COVID-19+ period, these feelings gradually decreased when the recovery period was entered.[44] When patients feel good, their fear of Covid-19 also decreases. However, there is a decrease in anxiety and depression levels.[38] In this study, as the fear of COVID-19, anxiety, and depression levels of the participants decreased, the increase in the level of psychological well-being supports this view. Individuals diagnosed with COVID-19 were affected psychologically for many reasons such as isolation and uncertainty in the healing process. Signs of depression were detected especially in those who had to stay in the hospital for a long time for treatment.[45] In a study, it was reported that COVID-19+ patients may experience depression and anxiety symptoms up to 12 months after discharge.[46]

Study limitations

This study is limited to the experiences of patients receiving inpatient treatment in pandemic clinics of a pandemic hospital.

Conclusion

According to the results obtained in this study, as anxiety, fear of COVID-19, and depression levels increase in individuals receiving hospital treatment because of the diagnosis of COVID-19, their psychological well-being levels decrease significantly. Also, advanced age, being a woman, low education level, not working and having a middle/low-income level, and being obliged to work during the quarantine period are the sociodemographic characteristics of individuals whose psychological well-being is adversely affected. Not taking preventive measures against COVID-19, having individuals diagnosed with COVID-19 in their relatives, being diagnosed with chronic mental and physical diseases, and using regular medication affect psychological well-being negatively.

Psychosocial interventions are recommended for anxiety, fear of COVID-19, and depressive symptoms in order to increase the psychological well-being levels of individuals receiving inpatient treatment due to a diagnosis of COVID-19.

Declarations

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Author contributions

Conceptualization, N.D., S.A.Ç. and Ö.B.K.; Methodology, N.D. and S.A.Ç.; Software, N.D. and S.A.Ç.; Validation, N.D.; Formal Analysis, S.A.Ç.; Investigation, N.D. and S.A.Ç.; Resources, N.D., S.A.Ç. and Ö.B.K.; Writing – Original Draft Preparation, N.D. and S.A.Ç.; Visualization, N.D. and S.A.Ç.;

Supervision, N.D., S.A.Ç. and Ö.B.K.; Project Administration, N.D., S.A.Ç. and Ö.B.K.; Funding Acquisition, N.D. and S.A.Ç.

Conflicts of interest

The author declares no conflicts of interest.

Data availability

Data will be made available on request.

Ethics approval

After the approval of the Ministry of Health (Approval No: 2020-05-28T23-23-45) and the permission of the pandemic hospital where the study was conducted, and approval from the Nevşehir Hacı Bektaşi Veli University Non-Interventional Clinical Research Ethics Committee (Approval No: 2020.15.180.) the study was initiated.

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