Relationship between coronavirus anxiety, resilience, and attitudes toward complementary and alternative treatment among patients admitted to the COVID-19 Outpatient Clinic

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Abstract

Aim: During the COVID-19 pandemic, the studies showed an increase in complementary and alternative therapy use. This study aimed to determine the relationship between coronavirus anxiety, resilience, and attitudes toward complementary and alternative treatment among patients admitted to the COVID-19 outpatient clinic.

Material and methods: This is a descriptive and relational study. The sample consisted of 364 patients who applied to the pandemic outpatient clinic of a training and research hospital in Turkey. Data were collected using the Coronavirus Anxiety Scale, Brief Resilience Scale, and Scale for Attitudes toward Complementary and Alternative Medicine. The Mann–Whitney U test, the Kruskal–Wallis test, and the Spearman correlation test were used in data analysis.

Results: There was a moderate and negative correlation (r = −0.332) between attitudes toward complementary and alternative medicine and coronavirus anxiety, and a moderate and positive correlation (r = 0.348) between attitudes toward complementary and alternative medicine and resilience (p < 0.01). Additionally, there was a moderate and negative correlation between coronavirus anxiety and resilience (r = −0.667; p < 0.01).

Conclusion: In the COVID-19 pandemic process, it is essential to follow up on patients' complementary and alternative medicine use, inform them, and determine their causes.

Keywords: anxiety, psychological resilience, complementary and alternative medicine, COVID-19

Introduction

Coronavirus disease 2019 (COVID-19), transmitted from sick people or carriers, causes symptoms such as fever, respiratory failure, dry cough, muscle, chest and joint pain, and pneumonia [1, 2]. The disease increases cardiovascular risk, causing diseases such as arrhythmia, heart attack, myocarditis, and pericarditis [3]. Hematological complications such as thromboembolism and thrombocytopenia, autoimmune complications such as hemolytic anemia and thyroid diseases, and complications related to the respiratory, renal, and neurological systems are also seen [1, 4].

The lethal effect of the disease has been increasing gradually; however, a definitive treatment remains unknown. Current treatment in many countries has been directed at disease symptoms. Antiviral treatment and plasma therapy are applied, and vaccination studies are continuing rapidly to find a definitive treatment against the virus. Complementary and alternative medicine (CAM) methods are given alone or in combination with standard therapy to prevent or treat COVID-19 [5, 6]. Food and herbs can contribute to the treatment and prevention of the disease. It can also be used to manage and prevent infection and strengthen immunity [7].

During the COVID-19 pandemic, the use of complementary and alternative therapy has increased. A study conducted in China showed that about 26% of patients diagnosed with COVID-19 used CAM products and home-made medicines during and even after their

treatment, and a study in Nepal found that the use of medicinal herbs helped prevent or treat the COVID-19 disease [8, 9]. Further, a study carried out in Bangladesh revealed that more than half of the participants were using drugs and herbal food/products to prevent the disease [10]. Therefore, this study aimed to determine the relationship between coronavirus anxiety, resilience, and attitudes toward complementary and alternative treatment among patients admitted to the COVID-19 outpatient clinic.

Material and methods

Design

This descriptive and relational study enrolled patients who registered in the pandemic outpatient clinic of a training and research hospital located in the city of Aksaray in the Central Anatolia Region of Turkey between October and December 2020.

Study population and sample

The study included individuals suspected for COVID-19 who applied to the pandemic outpatient clinic and who were above 18 years of age and conscious and did not have any mental problems and communication difficulties. The data was collected via Google form. The study objective was explained to the patients who applied to the outpatient clinic, and the phone numbers or e-mails of the patients who wanted to participate in the volunteer were taken and a link to the Google form was sent.

The sample size was calculated using the Brief Resilience Scale (BRS). The mean and standard deviation (9.76 ± 2.61) obtained in one study were used [11]. The following formula was used for the calculation: $n = (t^2 * s^2) / d^2$ [12]. The sample size was calculated as 105 and the sample of the study consisted of 365 volunteers.

Data collection tools

Data were collected using the "Patient Information Form," "Coronavirus Anxiety Scale," "Brief Resilience Scale," and "Scale for Attitudes toward CAM."

Patient information form

In the first part of the form, questions on the patient's age, educational status, occupation, and economic status were included, followed by questions regarding having a chronic disease, pain, and respiratory distress in the second part.

Coronavirus Anxiety Scale (CAS)

The scale was developed by Lee [13]. Turkish validity and reliability study was conducted by Evren et al. [14]. The scale consisted of five items and each item is scored between 0-4. The highest score that can be obtained from the scale is 20. An increase in the mean score is associated with higher COVID-19 anxiety. The Cronbach's alpha coefficient of the CAS was 0.80. In this study, it was 0.90.

The Brief Resilience Scale (BRS)

The scale was developed by Smith et al. [15]. Turkish reliability and validity study was conducted by Doğan [16]. There are six items in the scale and each item is scored between 1 and 5. The highest score that can be obtained from the scale is 30. An increase in the mean score is associated with higher resilience. In present study, the Cronbach alpha coefficient of the scale was 0.89.

Scale for Attitudes toward CAM (SACAM)

The SACAM was developed by Araz and Harlak [17]. It consists of eight items and each item is scored between 1 and 5. Four items assess the patients' attitudes toward complementary medicine and four items evaluate their attitudes toward alternative medicine. The Cronbach Alpha coefficient for internal consistency was 0.85, the Complementary Medicine

Subscale score was 0.77, and the Alternative Medicine Subscale score was 0.76. The lowest score was 8 and the highest was 40. Higher scores show positive attitudes toward CAM. In this study, it was 0.91.

Data evaluation

The study's data were analyzed with the SPSS (Statistical Package for Social Science for Windows 24.0) program. Statistics such as mean and standard deviation were used to present descriptive data. Data were not normally distributed according to the Kolmogorov–Smirnov test. Therefore, analyses were performed using the Mann–Whitney U, Kruskal–Wallis, and Spearman correlation tests. $p < 0.05$ level was accepted statistically significant.

Ethical approval

Before the study started, written permissions were obtained from the Training and Research Hospital and University Human Research Ethics Committee (date, October 1, 2020; No., 2020/09-19). The purpose of the study was explained to the patients before the data were collected. It is stated that the information obtained will only be used for scientific purposes. The principles of the Declaration of Helsinki were taken into account at each stage of the study. The authors report no actual or potential conflict of interest.

Results

The average age of the patients participating in the study was 38.04 ± 12.51 (min = 18; max = 77). Table 1 presents the following: 43.4% of the participants are between the ages 18 and 34, 54.7% are women, and 71.7% are married. 47.5% are exercising during the pandemic process. Moreover, 72.3% of them had a positive coronavirus test, and 88.6% of those who have positive coronavirus tests were treated at home. Only 22.5% of them have a chronic disease and 73.1% have pain complaints.

The CAS average of the participants was 4.76 ± 4.67; the BRS mean score was 18.30 ± 5.55; and the mean SACAM score was 15.73 ± 5.47 (Table 2).

There was a moderate and negative correlation (r = −0.332) between the SACAM and CAS scores of the participants and moderate and positive correlation (r = 0.348) between the SACAM and BRS scores (p < 0.01). Additionally, there was a moderately and negatively significant correlation between the CAS and BRS scores (r = −0.667; p < 0.01) (Table 3).

The mean CAS score of the participants was high in women (5.80 ± 4.94); those aged 52 and over (8.78 ± 4.87), married (5.50 ± 4.76), having children (5.75 ± 4.78), and living in the village (8.12 ± 6.63); primary school graduates (8.51 ± 4.88); those whose income are equal to their expenses (5.43 ± 4.77); those who do not exercise during the pandemic process (5.76 ± 5.13); those who have a positive coronavirus test (5.65 ± 4.82); those who are hospitalized (10.56 ± 5.49); those with chronic diseases (8.46 ± 5.27); those who experience pain (5.82 ± 4.82); and those whose pain extremely affects their daily life (8.71 ± 5.06) (p < 0.05) (Table 4).

In contrast, the mean BRS score was high in males (19.83 ± 5.66); those between 18 and 34 years (20.28 ± 4.97), who are single (20.66 ± 4.92), having no children (20.53 ± 4.98), and living in the city (18.88 ± 5.20); those with postgraduate education (22.03 ± 3.80); those whose incomes are less than their expenses (21.06 ± 4.17); those who exercise during the pandemic process (20.09 ± 4.79); those who have a negative coronavirus test (21.25 ± 4.27); those who receive their treatment at home (17.65 ± 5.32); those who do not have chronic diseases (19.23 ± 5.04); and those who have no pain (21.19 ± 4.62; p < 0.05) (Table 4).

Table 1	Socio-demographic characteristics of participants (n=364)		
Characteristics		n	%
Age, year			
18-34		158	43.4
35-51		156	42.9
≥ 52		50	13.7
Gender			
Female		199	54.7
Male		165	45.3
Marital status			
Married		261	71.7
Single		103	28.3
Having a child			
Yes		248	68.1
No		116	31.9
Place of residence			
City		294	80.8
Town		46	12.6
Village		24	6.6
Educational status			
Primary school		72	19.8
High school		81	22.2
Two-year college degree		49	13.5
Bachelor degree		131	36.0
Postgraduate degree		31	8.5
Income status			
High		113	31.0
Moderate		189	52.0
Low		62	17.0
Exercising during the pandemic			
Yes		173	47.5
No		191	52.5
Coronavirus test			
Positive		263	72.3
Negative		101	27.7
Hospitalization (n = 263)			
Yes		30	11.4
No		233	88.6
Having a chronic disease			
Yes		82	22.5
No		282	77.5
Having pain complaints			
Yes		266	73.1
No		98	26.9
Regions where pain is felt			
Neck		87	10.6
Back		182	22.2
Shoulder		46	5.6
Arms		38	4.6
Waist		122	14.9
Hip		85	10.5
Knee		58	7.1
Legs		157	19.2
Feet		43	5.3
Effect of pain on daily life			
Never		118	32.4
Little		132	36.3
High		114	31.3

Table 2	Mean scores of the sample on the CAS, BRS, and SACAM.		
	Mean ± SD	Median	Min-Max
Coronavirus Anxiety Scale (CAS)	4.76 ± 4.67	3	0-16
Brief Resilience Scale (BRS)	18.30 ± 5.55	19	6-30
Scale for Attitudes toward Complementary and Alternative Medicine	15.73 ± 5.47	15	8-37
Attitudes towards alternative medicine	7.67 ± 2.84	8	4-19
Attitudes towards complementary medicine	8.05 ± 2.98	8	4-18

Table 3	Correlation between the CAS, BRS, and SACAM scores			
		CAS	BRS	SACAM
CAS	r	1		
	p	-		
BRS	r	-0.667*	1	
	p	0.000	-	
SACAM	r	-0.332*	0.348*	1
	p	0.000	0.000	-

* Correlation is significant at the 0.01 level. CAS = Coronavirus Anxiety Scale; BRS = Brief Resilience Scale; SACAM = Scale for Attitudes toward Complementary and Alternative Medicine.

As seen in Table 4, the mean SACAM score is high in men (16.56 ± 6.19); those who are between ages 18 and 34 (16.41 ± 4.90), single (16.46 ± 5.24), having no children (16.09 ± 4.89), and living in the city (16.15 ± 5.44); those with a postgraduate education (19.38 ± 7.39); those whose incomes are less than their expenses (17.08 ± 4.97); those who exercise during the pandemic process (16.72 ± 5.51) and have a negative coronavirus test (17.24 ± 5.23); those who receive their treatment at home (15.35 ± 5.37); those who do not have chronic disease (16.52 ± 5.53); those who have no pain (17.72 ± 5.85); and those whose pain does not affect their daily life at all (17.91 ± 5.71; p < 0.05).

Discussion

The coronavirus anxiety levels of the patients who applied to the clinic were found to be low. However, the anxiety level was high in women; those aged 52 and above; those who are married, have children, live in villages, and are primary school graduates; those whose income is equal to their expenses; those who do not exercise during the pandemic process; those who have positive coronavirus tests; those who are hospitalized; those who have chronic disease; those who have pain; and those whose pain affects their daily life considerably. Similarly, Lee et al. found that age, gender, and education affected dysfunctional coronavirus anxiety [18]. In another study conducted in the general population, the anxiety levels of those who were over the age of 30, women, high education level, married, and non-governmental workers were found to be increased [19]. Accepting the factors obtained in this study as risk factors in terms of coronavirus anxiety enables problem identification in the early stage and supported and resolved with appropriate interventions.

This study revealed that the resilience of the patients who applied in the COVID-19 outpatient clinic was at a significant level. In addition, men, young people, single people, those who do not have children, those who live in the city, those who have a high education level, those who have low income, those who

Characteristics	Coronavirus Anxiety X ± SD	Resilience X ± SD	Attitudes toward CAM X ± SD
Gender			
Female	5.80 ± 4.94	17.04 ± 5.15	15.04 ± 4.71
Male	3.52 ± 3.99	19.83 ± 5.66	16.56 ± 6.19
z	-4.682	-4.795	-2.082
p	0.000	0.000	0.037
Age, year			
18-34	3.05 ± 3.79	20.28 ± 4.97	16.41 ± 4.90
35-51	5.21 ± 4.54	17.44 ± 5.12	15.71 ± 6.05
≥ 52	8.78 ± 4.87	14.74 ± 6.19	13.60 ± 4.82
x2	56.596	39.862	14.604
p	0.000	0.000	0.001
Marital status			
Married	5.50 ± 4.76	17.37 ± 5.52	15.44 ± 5.55
Single	2.91 ± 3.88	20.66 ± 4.92	16.46 ± 5.24
z	-5.284	-4.895	-2.103
p	0.000	0.000	0.035
Having a child			
Yes	5.75 ± 4.78	17.26 ± 5.51	15.56 ± 5.73
No	2.67 ± 3.64	20.53 ± 4.98	16.09 ± 4.89
z	-6.353	-5.031	-1.631
p	0.000	0.000	0.103
Place of residence			
City	4.24 ± 4.18	18.88 ± 5.20	16.15 ± 5.44
Town	6.39 ± 5.37	16.17 ± 6.19	14.23 ± 5.93
Village	8.12 ± 6.63	15.37 ± 6.72	13.33 ± 3.82
x2	10.316	16.868	13.829
p	0.006	0.000	0.001
Educational status			
Primary school	8.51 ± 4.88	13.88 ± 5.72	12.83 ±4.30
High school	4.34 ± 4.54	18.79 ± 5.26	15.39 ± 5.18
Two-year college degree	4.28 ± 4.41	19.83 ± 4.89	16.04 ± 4.97
Bachelor degree	3.54 ± 3.77	18.98 ± 4.84	16.54 ± 5.17
Postgraduate degree	3.09 ± 3.96	22.03 ± 3.80	19.38 ± 7.39
x2	52.044	61.905	38.678
p	0.000	0.000	0.000
Income status			
High	4.64 ± 4.61	18.66 ± 5.55	16.10 ± 5.97
Moderate	5.43 ± 4.77	17.19 ± 5.63	15.06 ± 5.25
Low	2.96 ± 3.97	21.06 ± 4.17	17.08 ± 4.97
x2	14.549	24.936	10.058
p	0.001	0.000	0.007
Exercising during the pandemic			
Yes	3.66 ± 3.82	20.09 ± 4.79	16.72 ± 5.51
No	5.76 ± 5.13	16.68 ± 5.71	14.83 ± 5.30
z	-3.357	-5.548	-3.724
p	0.001	0.000	0.000
Coronavirus test			
Positive	5.65 ± 4.82	17.17 ± 5.58	15.14 ± 5.46
Negative	2.45 ± 3.28	21.25 ± 4.27	17.24 ± 5.23
z	-6.169	-6.123	-3.968
p	0.000	0.000	0.000
Hospitalization (n=263)			
Yes	10.56 ± 5.49	13.43 ± 6.20	13.56 ± 6.04
No	5.02 ± 4.35	17.65 ± 5.32	15.35 ± 5.37
z	-5.068	-3.764	-2.410
p	0.000	0.000	0.016
Having a chronic disease			
Yes	8.46 ± 5.27	15.10 ± 6.05	13.01 ± 4.33
No	3.69 ± 3.87	19.23 ± 5.04	16.52 ± 5.53
z	-7.033	-5.377	-5.603
p	0.000	0.000	0.000
Pain			
Yes	5.82 ± 4.82	17.24 ± 5.50	14.99 ± 5.15
No	1.90 ± 2.59	21.19 ± 4.62	17.72 ± 5.85
z	-7.526	-5.883	-4.430
p	0.000	0.000	0.000
Effect of pain on daily life			
Never	2.03 ± 2.56	21.03 ± 4.42	17.91 ± 5.71
Little	3.80 ± 3.35	19.06 ± 4.95	15.40 ± 5.15
High	8.71 ± 5.06	14.61 ± 5.32	13.84 ± 4.79
x2	107.625	75.632	37.056
p	0.000	0.000	0.000

Table 4 The comparison of the socio-demographic characteristics between mean scores of the sample on the CAS, BRS, and SACAM.

exercise during the pandemic process, those who have negative coronavirus test, those who receive their treatment at home, those who do not have chronic diseases, and those who have no pain had higher psychological resilience. Contrary to the findings obtained in this study, in a study conducted with hemodialysis patients, those with good income were found to have higher psychological resilience, whereas gender, marital status, education level, and history of chronic disease were not found to be effective [20]. Moreover, in a study conducted in arthritis patients during the COVID-19 pandemic, it was found that they had higher psychological resilience than healthy controls [21]. Therefore, we conclude that the disease process can increase resilience by activating coping skills and adaptability and that some sociodemographic characteristics can affect the level of resilience.

Exercising in quarantine during the pandemic process increased resilience by leading to higher locus of control, self-efficacy, and optimism and that gender had a crucial effect on this relationship [22]. In a study conducted with menopausal women during the pandemic process, it was found that doing physical activity improved quality of life and increased resilience [23]. Another study showed that regular physical activity during the quarantine process increased psychological resilience and reduced depressive symptoms along with positive affect, improving focus of control, optimism, and self-efficacy [24]. In line with the results of this study, we can say that the participants who exercise during the pandemic process have higher psychological resilience.

The participants' level of attitude toward complementary and alternative therapy was found to be low. However, men, young people, single individuals, those who do not have children, those who live in the city, those who have a high education level, those who have low income, those who exercise during the pandemic process, those who have negative coronavirus test, those who receive their treatment at home, those who do not have chronic diseases, and those who do not have pain and whose pain does not affect daily life at all had more positive attitudes. In a study conducted at the isolation center during the COVID-19 process, it was determined that approximately one third of the participants used CAM products during treatment and after discharge [8]. As mentioned, in a study conducted during the pandemic process, it was found that 57.6% of the participants took herbal products and that women, young people, those with a high level of education, single individuals, and those living in the city used herbal products more [10]. Studies on SACAM during the COVID-19 pandemic process are limited. However, in the third version of the National COVID-19 Diagnosis and Treatment Guidelines in China, traditional herbal Chinese medicine was proposed as a treatment during the pandemic [25]. World Health Organization declared that it will support scientifically proven traditional medical support in the fight against COVID-19 [26]. In recent days, the use of complementary alternative medicine to prevent or treat coronavirus disease in Turkey has been frequently reported, and its benefits, harms, and side effects have been discussed [27]. In this respect, it should be kept in mind that the use of products that are not scientifically proven may cause unwanted side effects. The low attitudes toward CAM use in this study can be considered as a good result in this sense.

This study found that as the resilience increased, the coronavirus anxiety levels of the participants decreased. Similarly, in a study conducted with doctors during the pandemic process, an inverse relationship was determined between anxiety and resilience [28]. In a study conducted with nurses, a strong relationship was found between coronavirus-related anxiety and

resilience [29]. Further, in another study with healthcare workers, high resilience was associated with low COVID-19 anxiety [30]. In studies conducted with the general population during the pandemic process, a negative relationship was found between anxiety and resilience [31,32]. In fact, resilience was defined as the ability to cope with difficult life events such as illness and disasters and to recover again [33]. It can be said that the disease process during pandemic improves the resilience level, and the anxiety level decreases as the level of psychological resilience increases.

A strong relationship between the participants' attitudes toward complementary and alternative medicine and coronavirus anxiety was observed, and as their CAM attitudes increased positively, their anxiety levels decreased. Similarly, in a study conducted with patients with solid tumors, the anxiety levels of those using CAM were found to be lower than those of who did not use it, and it was found to be associated with anxiety [34]. In another study conducted with cancer patients, no significant relationship was found between CAM use and anxiety level [35]. There was no other study conducted on this subject during the pandemic process. However, it was stated that complementary and integrative medicine can strengthen mental and physical health and reduce symptoms such as anxiety and depression in COVID-19 patients [36].

Conclusion

In conclusion, it was determined that patients who applied to the COVID-19 outpatient clinic had low coronavirus anxiety and attitudes toward CAM, and their psychological resilience levels were good. Chiefly, as the psychological resilience levels of the participants increased, their coronavirus anxiety and attitude toward CAM decreased. This finding is believed to provide crucial contributions to experimental studies on the subject. In this regard, psychological resilience-based psychosocial interventions have been recommended for individuals diagnosed with COVID-19 who are under hospital or home treatment. It was predicted that these interventions could reduce or improve mental symptoms such as anxiety. Identifying sociodemographic characteristics that pose a risk for coronavirus anxiety, performing mental follow-up of the person who is thought to be at risk, and supporting them with psychosocial interventions may as well be beneficial in reducing mortality and morbidity.

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