Solunum Sistemi Hastalıklarına Sahip Bireylerin COVID-19 Fobisi İle COVID-19 Aşısına Yönelik Tutumları

COVID-19 Phobia and Attitudes Towards COVID-19 Vaccines in Individuals with Respiratory Diseases

[1]Alev YILDIRIM KESKİN, [2]Sibel ŞENTÜRK

Özet: Amaç: Bu araştırmanın amacı, solunum sistemi hastalıklarına sahip bireylerin COVID-19 fobisi ile COVID-19 aşısına yönelik tutumları arasındaki ilişkiyi belirlemektir. **Gereç ve Yöntem:** Tanımlayıcı-kesitsel nitelikteki bu araştırma, 15 Mart 2021- 15 Haziran 2021 tarihleri arasında 368 göğüs hastası ile tamamlanmıştır. Veriler, araştırmacılar tarafından geliştirilen "Hasta Tanıtım Formu", "Koronavirüs 19 Fobisi Ölçeği" ve "COVID-19 Aşısına Yönelik Tutumlar Ölçeği" ile toplanmıştır. Verilerin değerlendirilmesinde, tanımlayıcı istatistikler, Independent Sample T test, ANOVA testi ve Pearson Korelasyon analizi kullanılmıştır. **Bulgular:** Solunum sistemi hastalığına sahip hastaların %51.4'ünün kadın olduğu, %99.5'inin COVID-19 aşısı yaptırdığı, %70.1'inin solunum sıkıntısı durumunda kaygı yaşadığı saptanmıştır. Hastaların COVID-19 fobi puan ortalamalarının 56.33±6.47 ve COVID-19 Aşı Tutum Ölçeği puan ortalamalarının ise 4.08±0.27 olduğu bulunmuştur. COVID-19 fobisi ölçeği toplam puanı, COVID-19 fobi ölçeği psikolojik ve sosyal alt boyutu ile COVID-19 aşısı olumlu tutum alt boyutu arasında pozitif yönde anlamlı, somatik alt boyut ve ekonomik alt boyut arasında ise negatif yönde anlamlı bir ilişki saptanmıştır (p<0.05). COVID-19 fobisi ve aşı tutumunun COVID-19 temaslı/pozitif olma durumu, yakınlarında COVID-19 pozitiflik durumu, genel sağlık durumu algısı, solunum sıkıntısı/kaygısı çekme ve solunum sistemi hastalık tanılarına göre anlamlı düzeyde farklılaştığı bulunmuştur (p<0.05). **Sonuç ve Öneriler:** Solunum sistemi hastalığına sahip hastaların, COVID-19 fobisinin orta düzeyin üzerinde olduğu ve COVID-19 aşısına yönelik tutumlarının olumlu olduğu saptandı. Hastaların fobisi arttıkça COVID-19 aşısına yönelik olumlu tutumlarının arttığı tespit edilmiştir.

Anahtar Kelimeler: Aşı, COVID-19, Fobi, Göğüs hastası, Tutum.

Abstract: Aim: The purpose of this study is to determine the relationship between the COVID-19 phobia levels of individuals with respiratory diseases and their attitudes towards COVID-19 vaccines. **Material and Method:** This descriptive cross-sectional study was carried out with 368 pulmonology patients between 15 March 2021 and 15 June 2021. The data were collected using a "Patient Information Form" that was developed by researchers, the "COVID-19 Phobia Scale (C19P-S)", and the "COVID-19 Vaccine Attitudes Scale (ATV-COVID-19)". The data analyses included descriptive statistics, independent-samples t-test, ANOVA, and Pearson's correlation analysis. **Results:** It was determined that 51.4% of the participants were women, 99.5% had received COVID-19 vaccination, and 70.1% experienced anxiety in cases of respiratory difficulties. The mean C19P-S and ATV-COVID-19 scores of participants were 56.33±6.47 and 4.08±0.27, respectively. The total C19P-S scores of participants and their scores in the psychological and social dimensions of C19P-S were significantly and positively related to their scores in the positive attitudes dimension of ATV-COVID-19, while their scores in the somatic and economic dimensions of C19P-S were significantly and positively related to the latter (p<0.05). The COVID-19 phobia levels and vaccine attitudes of participants were found to vary significantly in terms of being COVID-19-positive or in contact with a COVID-19 patient, COVID-19 positivity in relatives, perception of general health status, having breathing problems/experiencing anxiety, and respiratory disease diagnosis types (p<0.05). **Conclusion:** The COVID-19 phobia levels of participants were above-average, and their attitudes towards COVID-19 vaccines were positive. As the COVID-19 phobia levels of the participants increased, their positive attitudes towards COVID-19 vaccines increased.

Keywords: Vaccine, COVID-19, Phobia, Pulmonology patient, Attitude.

[2] Selçuk Üniversitesi, Akşehir Kadir Yallagoz Sağlık Yüksekokulu, Hemşirelik Bölümü, Konya
[1] Burdur Mehmet Akif Ersoy Üniversitesi, Bucak Sağlık Yüksekokulu, Hemşirelik Bölümü, Burdur

INTRODUCTION

The novel coronavirus disease-2019 (COVID-19) is a viral disease that started in animal markets in the Wuhan city of China, has caused prevalent pneumonia cases and continues to take a hold of the world due to its high contagiousness through respiratory droplets (Kusk et al., 2021; Zhu et al., 2020). The Turkish Ministry of Health reported the total number of COVID-19 as 10,808,770 and the number of COVID-19-related deaths as 85,600 (MH, 2022). The World Health Organization (WHO) reported the number of COVID-19 cases in the world as 373,229,380, and the number of COVID-19-related deaths was stated as 5,658,702 (WHO, 2022).

The most frequently observed symptoms of COVID-19 include dry cough, dyspnea, fever, malaise, myalgia, headache, sore throat, arthralgia, taste/smell disorders, gastrointestinal symptoms, and psychological symptoms (Zakaria et al., 2020; Asmundson & Taylor, 2020; Amin, 2020). It was stated that 23.7% of COVID-19 patients had at least one underlying chronic disease or comorbidity, while this rate increased to 40-54% in severe cases (Guan et al., 2020; Wu et al., 2020). One of the patient groups that are influenced most in the COVID-19 pandemic are those who have chronic respiratory diseases, especially chronic obstructive pulmonary disease (COPD) and asthma (Halpin et al., 2020; Kusk et al., 2021; Wu et al., 2020). Studies conducted with patients of respiratory diseases who had COVID-19 have found that these patients frequently had poor prognoses such as more severe dyspnea, hypoxemia, severe coughing, secretion, fatigue, blackouts, pathologic signs in the lungs, mechanical ventilation need, and death (Kusk et al., 2021; Mousing & Sorensen, 2021; Philip et al., 2020; Wu et al., 2020).

Due to unexplained deaths, the COVID-19 pandemic has become a globally significant source of psychological stress, fear, panic, helplessness, hopelessness, and uncertainty in individuals who have chronic diseases (Arora et al., 2020; Asmundson & Taylor, 2020; Kalk & Damme, 2020; Kusk et al., 2021; Li et al., 2020). In the COVID-19 pandemic period, changes out of the routine, catching the disease despite being vaccinated, distrust developing against health systems, and conflicting news stories developing rapidly on social media, the internet, television and radio channels have led to the development of fears of COVID-19, especially among individuals who have significant chronic diseases such as respiratory diseases (Amin, 2020; Asmundson & Taylor, 2020; Fedele et al., 2021; Yumru & Demirkaya, 2021). Fear of COVID-19 is defined as coronaphobia. A phobia is described as a constant excessive fear of an individual, an activity or a situation and an anxiety disorder (Arora et al., 2020; Asmundson & Taylor, 2020). Studies have emphasized that in the COVID-19 pandemic period, patients with chronic respiratory disorders experience shortness of breath, they are afraid of catching the disease, they have concerns about dying, and thus, their phobia rates are very high (Kusk et al., 2021; Mousing & Sorensen, 2021; Philip et al., 2020; Pleguezuelos et al., 2020; Wu et al., 2020). Studies conducted with different disease groups have also revealed COVID-19 phobia varying in the moderate-severe range among patients (Amin, 2020; Arora et al., 2020; Asmunson & Taylor, 2020; Karkın et al., 2020; Kulekcioğlu et al., 2020; Tarus et al., 2021; Toprak et al., 2020). Phobias are situations that lead to avoidance behaviors in individuals and significantly affect and restrict their lives (Arora et al., 2020; Kalk & Damme, 2020). Due to the COVID-19 pandemic, individuals with some chronic diseases have had to cope with COVID-19 phobia in addition to scientific and natural fears (Basanez et al., 2021; Zhang et al., 2021).

Throughout history, people have been physically, psychologically and socially affected by epidemic diseases, and they have been saved by vaccines (Zhang et al., 2021). Vaccines are an effective, safe and inexpensive method in the prevention of life-threatening transmittable diseases and the management of symptoms (WHO, 2021). The positive attitudes developed by individuals towards vaccines are important in the process of taking contagious diseases under control (Fedele et al.,

2021; Williams et al., 2020). It has been underlined that the attitudes of individuals towards vaccines are influenced by the roles of the media and communication, vaccination policies of governments, roles of healthcare professionals, individual decision-making processes, individuals' knowledge about vaccines, their past experiences about vaccines, vaccination services that are provided, and the perception of the importance of vaccination in the protection of health (Basanez et al. 2021; Salali & Uysal, 2020; Williams et al., 2020; Zhang et al., 2021).

While there are studies carried out with different groups, the review of the literature in this study did not reveal any previous study that focused on COVID-19 phobia and attitudes towards COVID-19 vaccines together in individuals with respiratory diseases (Basanez et al., 2021; Erdem & Karaman, 2021; Kılıç et al., 2021; Oruç & Öztürk, 2021; Sönmez et al., 2021; Tarus et al., 2021). Considering that the COVID-19 pandemic has not ended yet, its cases peak frequently, it increases the associated phobia levels of individuals with respiratory diseases by affecting their psychology negatively (Kusk et al., 2021; Pleguezuelos et al., 2020), and this situation affects attitudes towards COVID-19 vaccines.

Aim

This study was conducted to determine the relationship between the COVID-19 phobia levels of individuals with respiratory diseases and their attitudes towards COVID-19 vaccines.

The research questions were as follows:

1. What are the COVID-19 phobia levels of pulmonology patients and the nature of their attitudes towards COVID-19 vaccines in the pandemic period?

2. Do the sociodemographic and disease-related characteristics of pulmonology patients affect their COVID-19 phobia levels and attitudes towards COVID-19 vaccines in the pandemic period?

3. Is there a relationship between the COVID-19 phobia levels of pulmonology patients and their attitudes towards COVID-19 vaccines in the pandemic period?

MATERIAL AND METHODS

Study Design

A descriptive and cross-sectional design was used in this study.

Study population and setting

The population of this study consisted of all individuals registered at a Family Health Center (FHC) located in the south of XXX between 15 March and 15 June 2021. The minimum required sample size was calculated using the formula n= $Nt^2pq/d^2(N-1)+pq$. The number of all individuals with respiratory diseases registered at the FHC was 620, and the minimum sample size was determined as 237 based on a confidence interval of 95% and an error margin of 5%. The study was completed with a total of 368 individuals who were at or over the age of 18, had a diagnosis of a respiratory disease, did not have any sensory loss related to sight and hearing, spoke Turkish, were open to verbal communication, did not have a history of psychiatric conditions, filled out the data collection forms in the period when the study was conducted and agreed to participate.

Instruments

The data were collected by a Patient Information Form, the "COVID-19 Phobia Scale", and the " Attitudes towards the COVID-19 Vaccine (ATV-COVID-19) Scale ".

Patient Information Form

The information form was prepared by the researchers based on their review of the relevant literature (Kılıç et al., 2021; Arora et al., 2020; Asmundson & Taylor, 2020; Cornwall, 2020; Toprak et al., 2020; Kulekcioğlu et al., 2020). The form contained 7 closed-ended questions on the sociodemographic of the participants including age, gender, education level, marital status, economic

status, place of residence and smoking status, as well as 10 questions on their disease-related characteristics including their status of having been in contact with a COVID-19 patient, COVID-19 positivity in themselves, COVID-19 positivity in their relatives, status of taking the necessary precautions against COVID-19, status of having been vaccinated against COVID-19, perceptions of general health status, status of having breathing problems, status of experiencing anxiety in cases of breathing problems, disease diagnosis, and status of having a respiratory disease.

COVID-19 Phobia Scale (C19P-S)

"COVID-19 Phobia Scale (C19P-S)", was developed by Arpacı et al. (2020) to measure phobia that may develop against COVID-19 (Arpacı et al., 2020). It is a 5-point Likert-type self-report scale where each item is scored with response options varying from 1 "Absolutely Disagree" to 5 "Absolutely Agree". Items 1, 5, 9, 13, 17 and 20 constitute the Psychological Dimension, items 2, 6, 10, 14 and 18 constitute the Somatic Dimension, items 3, 7, 11, 15 and 19 constitute the Social Dimension, and items 4, 8, 12 and 16 constitute the Economic Dimension. While the score of each dimension is obtained by summing the scores of the items under that dimension, the total C19P-S score is calculated by summing the scores of all four dimensions and varies in the range of 20 to 100. Higher scores indicate higher levels of phobia in the context of the relevant dimension or in general. The Cronbach's alpha coefficient of the scale was reported as 0.92 (Arpacı et al., 2020). In this study, the Cronbach's alpha coefficient was found as 0.88.

Attitudes Towards the COVID-19 Vaccine (ATV-COVID-19) Scale

The scale was developed by Geniş et al. (2020) It is a 9-item scale with two dimensions (Positive Attitudes and Negative Attitudes). Each item has response options varying from 1 "Absolutely Disagree" to 5 "Absolutely Agree". The items in the Negative Attitudes dimension are inversely scored. The total score obtained by adding the scores of all items in a dimension together is divided by the number of items, and a score in the range of 1-5 is obtained. Higher scores in the Positive Attitudes Dimension indicate more positive attitudes. In the Negative Attitudes dimension whose items are inversely scored, higher scores indicate attitudes that are less negative. The inversely scored items are coded in the form of 1→5; 2→4; 3→3; 4→2; 5→1. The minimum and maximum total scores in the scale are 9 and 45. The Cronbach's alpha coefficients of the scale were reported as 0.80 for the overall scale, 0.96 for the Positive Attitudes dimension, and 0.78 for the Negative Attitudes dimension (Geniş et al., 2020). In this study, the Cronbach's alpha coefficient of the total scale was found as 0.72.

Data Collection

The data were collected by the researchers in compliance with facemask, social distancing and hygiene rules in the waiting room of a FHC located in the south of XXX using the face-to-face interview technique with pulmonology patients presenting to the FHC for examination between 15 March and 15 June 2021. Before the implementation, the individuals to be included in the study were provided information about the purpose and method of the study, and they were ensured that their information would be used for scientific purposes only. The implementation of the data collection forms took approximately 10-15 minutes for each participant.

Data Analysis

Data analysis was performed using SPSS 21.0 (Statistical Package for the Social Sciences, Chicago, Illinois). Categorical variables were presented as frequencies and percentages. Continuous variables were expressed as mean and standard deviation (SD). Fore valuating the normality of the data distribution, the Kolmogorov-Smirnov test were used. Independent-Samples T Test were used in two groups which had continuous variables and one-way analysis of variance (ANOVA) for more than two groups. Cronbach's alpha value was found using reliability analysis.

Pearson Correlation Analysis was also performed to search the relationship between the scales. A two-sided p value < 0.05 was considered significant for all analyses.

Ethical Approval

Before data collection, Ethics committee approval was gained from the Ethics Committee of Non-Interventional Clinical Studies of XXX University (Decision Number: GO 2021/31). Written and verbal consent was obtained from the patients. In addition, a written permission was obtained from the scale owner to use the scale. In the study, the principles in the Declaration of Helsinki were complied with.

RESULTS

It was determined that 52.0% of the participants were in the age group of 36-55, 51.4% were women, 39.9% were high school graduates, 84.2% were married, 45.12% were living in the city, 75.0% had a moderate level of income, and 45.1% were smokers (Table 1).

In our study, it was found that the participants who were 65 years old or older, those who had primary-secondary school or lower education levels, those who were married, those who were living in villages/towns and those who were not smokers had significantly higher mean total C19P-S scores (p<0.05) (Table 1). It was found that the participants in the age group of 18-35, those with higher education, those who were single, those living in districts and those who were not smokers had significantly higher mean total ATV-COVID-19 scores (Table 1).

As seen in Table 2, 85.1% of the participants had not been in contact with COVID-19 patients, 73.1% had not been diagnosed with COVID-19, no relatives of 85.1% had been diagnosed with COVID-19, 100% stated that they took the necessary precautions against COVID-19, 99.5% received COVID-19 vaccines, 48.1% perceived their general health status as good, 73.4% did not experience breathing problems frequently, 70.1%

experienced anxiety caused by breathing problems, the respiratory disease duration of 46.2% was longer than 11 years, and 50.0% were asthma patients (Table 2).

In our study, it was determined that the participants who had a history of contact with COVID-19 patients, those with no history of COVID-19 positivity, those with no history of COVID-19 positivity in their relatives, those who perceived their general health status as poor, those who frequently experienced breathing problems, those who experienced anxiety caused by breathing problems, those whose duration of their respiratory disease was between 1 year and 5 years and those who were COPD patients had significantly higher mean total C19P-S scores (p<0.05) (Table 2).

Moreover, it was found that the participants in our study who had a history of contact with COVID-19 patients, those with a history of COVID-19 positivity, those with a history of COVID-19 positivity in their relatives, those who perceived their general health status as good, those who did not experience anxiety caused by breathing problems and those whose diagnosis was bronchitis had significantly higher mean total ATV-COVID-19 scores (p<0.05) (Table 2).

As shown in Table 3, the mean total C19P-S and ATV-COVID-19 scores of the participants of our study were 56.33±6.47 and 36.76±2.45, respectively. Accordingly, the participants had above-average COVID-19 phobia levels and above-average levels of positive attitudes towards COVID-19 vaccines (Table 3).

Table 1. Distribution of Attitudes Towards COVID-19 Phobia and COVID-19 Vaccine According to Sociodemographic Characteristics of Individuals with Respiratory System Diseases

Variables	Count	Percent (%)	Coronavirus 19 Phobia Scale (C19P-S)	COVID-19 Vaccine Attitude Scale
Age				36.70±2.15
18-35 age	99	26.9	53.98±7.84	37.15±2.67
36-55 age	176	52	56.14±5.94	35.76±2.06
56-64 age	52	14.1	56.80±3.34	36.38±2.18
65 age and above	41	11.1	61.55±4.21	
F/p			F=16.491, **p=0.000**	F=4.623, **p=0.003**
Multiple comparison			d>c>b>a	b>a>d>c
Gender				
Female	189	51.4	56.55±7.36	36.87±2.43
Male	179	48.6	56.11±5.38	36.64±2.46
t/p			t=0.641,p=0.522	t=0.880,p=0.380
Level of education				
Elementart and below	111	30.2	58.75±4.56	36.45±2.43
Secondary education	147	39.9	55.89±6.03	36.42±2.43
High education	110	29.9	54.49±7.84	37.53±2.32
F/p			F=13.413,**p=0.000**	F=8.106,**p=0.000**
Multiple comparison			a>b>c	c>a>b
Marriage status				36.61±2.45
Married	310	84.2	56.98±5.31	37.53±2.31
Single	58	15.8	52.87±10.12	
t/p			t=4.553, **p=0.004**	t=-2.631, **p=0.009**
Where lives				
Province	166	45.1	55.15±4.48	36.88±2.50
District	155	42.1	56.50±8.24	37.03±2.27
Village/town	47	12.8	59.97±3.99	35.44±2.43
x^2/p			F=10.793,**p=0.000**	F=8.233,**p=0.000**
Multiple comparison			c>b>a	b>a>c
Income status				
Good	64	17.4	55.62±8.68	36.35±2.68
Middle	276	75.0	56.38±6.16	36.92±2.31
Bad	28	7.6	57.50±1.87	36.10±3.04
F/p			F=0.847, p=0.430	F=2.485, p=0.085
Multiple comparison			c>b>a	b>a>c
Smoking status			54.60±6.71	35.75±2.34
Yes	166	45.1	57.76±5.91	37.59±2.22
No	202	54.9	t=-4.805, **p=0.000**	t=7.722,**p=0.000**
t/p				

Table 2. Distribution of Attitudes towards COVID-19 Phobia and COVID-19 Vaccine of Individuals with Respiratory System Diseases by Disease Characteristics

Variables	Count	Percent (%)	Coronavirus 19 Phobia Scale (C19P-S)	COVID-19 Vaccine Attitude Scale
Diagnosis of disease				
Asthma	184	50.0	56.66±4.86	36.23±2.50
Bronchitis	159	43.2	54.88±6.74	37.50±2.32
COPD	25	6.8	63.54±9.90	36.00±1.31
F/p			F=14.143, **p=0.000**	F=9.223, **p=0.000**
Multiple comparison			c>a>b	b>a>c
The duration of your respiratory disease				
1-5 years				
6-10 years	31	8.4	59.77±10.92	36.51±1.99
11 years and above	167	45.4	55.55±6.82	36.68±2.11
	170	46.2	56.48±4.61	36.88±2.81
F/p			F=5.794, **p=0.003**	F=0.468,p=0.627
Multiple comparison			a>c>b	c>b>a
Frequent respiratory distress				
Yes	98	26.6	60.16±6.78	36.64±1.85
No	270	73.4	54.95±5.77	36.80±2.63
t/p			t=6.763, **p=0.000**	t=0.668, p=0.505
Anxiety in case of respiratory distress				
Yes	258	70.1	57.38±5.66	36.34±2.34
No	110	29.9	53.89±7.53	37.73±2.43
t/p			t=4.883, **p=0.000**	t=-5.141, **p=0.000**
Evaluate general health status				
Good				
Middle	177	48.1	54.02±4.84	37.16±2.60
Bad	166	45.1	57.89±7.25	36.40±2.39
	25	6.8	62.44±3.44	36.24±0.72
Multiple comparison			F=31.764,**p=0.000**	F=4.828,**p=0.009**
			c>b>a	a>b>c
COVID-19 contact status				
Yes				
No	55	14.9	59.10±7.96	38.50±2.52
	313	85.1	55.85±6.06	36.45±2.30
t/p			t=2.889, **p=0.005**	t=5.993, **p=0.000**
The status of being positive for COVID-19				
Yes				
No	99	26.9	55.08±7.46	37.54±2.62
	269	73.1	56.80±6.01	36.47±2.32
t/p			t=-2.276,**p=0.023**	t=3.570, **p=0.000**
The status of being positive for COVID-19 in their relatives				
Yes	179	14.9	54.96±6.49	37.07±2.75
No	189	85.1	57.64±6.20	36.46±2.09
t/p			t=-4.042,**p=0.000**	t=2.395, **p=0.017**
Situation of taking necessary measures against COVID-19				
Yes	368	100.0	56.33±6.47	36.76±2.45
t/p			t= 166.939,**p=0.000**	t=287.757, **p=0.000**
Have you had the COVID-19 Vaccine?				
Yes				
No	366	99.5	56.33±6.49	36.76±2.45
	2	0.5	57.00±0.00	36.50±0.70
t/p			t=-0.144, p=0.885	t=0.152,p=0.879

Table 3. Mean Scores of Individuals with Respiratory System Diseases on the Attitude Scale towards COVID-19 Phobia (C19P-S) and COVID-19 Vaccine

	Count	Min	Max	$\bar{X} \pm SS$
Coronavirus 19 Phobia Scale	368	43.0	74.0	56.33±6.47
Psychological Sub-Dimension	368	9.0	30.0	23.28±3.59
Somatic Sub-Dimension	368	5.0	22.0	9.83±9.00
Social Sub-Dimension	368	6.0	24.0	16.67±3.25
Economic Sub-Dimension	368	4.0	18.0	6.54±1.94
Positive Attitude	368	3.5	5.0	4.40±0.37
Negative Attitude	368	2.8	5.0	3.83±0.51

According to the responses of the participants to the items in the ***positive attitudes dimension*** of ATV-COVID-19 as "Agree" and "Absolutely Agree", 98.4% stated that they wanted their family members to get vaccinated, 100% stated that this vaccine should be administered to them at the first opportunity, and 68.7% stated that they trusted the explanations made about the vaccine. The rates of those who responded to these items as "Undecided" were respectively 10.6% and 25.5%. According to the results of the examination of participant responses to the items in the ***negative attitudes dimension*** of ATV-COVID-19, 91.3% of the participants did not agree that the vaccine will lead to the spread of the disease, 94.8% did not agree that the vaccine will not have a protective effect, 72.3% did not agree that the vaccine is dangerous, 44.0% did not agree that the effectiveness of the vaccine had not been tested enough, and 44.3% did not agree that they could overcome the pandemic without getting vaccinated (Table 4).

In the comparison of the mean scale scores of the participants, it was determined that their scores in the psychological dimension of C19P-S were significantly and positively related to their scores in the positive attitudes dimension of ATV-COVID-19 and negatively related to their negative attitudes dimension scores (p<0.05). The C19P-S scores of the participants were negatively related to their scores in the positive attitudes dimension of ATV-COVID-19 and positively related to their negative attitudes dimension scores (p<0.05). The scores of the participants in the social dimension of C19P-S were positively related to their total ATV-COVID-19 scores and their scores in the positive attitudes dimension of ATV-COVID-19 (p<0.05). There was a positive significant relationship between the participants' total ATV-COVID-19 scores and their scores in the positive attitudes and negative attitudes dimensions (p<0.05) (Table 5).

Table 4. Responses of Individuals with Respiratory System Disease to the Questions on the Attitude Scale towards COVID-19 Vaccine

		I strongly disagree (1)	I do not agree (2)	I'm indecisive (3)	I agree (4)	Absolutely I agree (5)
Positive Attitude						
1	I want my family to have the vaccine to be developed/developed for this disease.	-	6(1.6)	-	104(28.3)	258(70.1)
2	I want to have the vaccine to be developed/developed for this disease as much as possible.	-	-	-	97(26.4)	271(73.6)
3	I think everybody should have the vaccine to be developed/developed for this disease as much as possible.	-	5(1.4)	39(10.6)	106(28.8)	218(59.2)
4	I trust to explanations made for the vaccine to be developed/developed.	2(0.5)	19(5.2)	94(25.5)	212(57.6)	41(11.1)
Negative attitude						
5	The vaccine to be developed/developed may couse spread of the disease.	158(42.9)	178(48.4)	31(8.4)	-	1(0.3)
6	I think the vaccine to be developed/developed will not/does not have aprotective effect.	117(31.8)	232(63.0)	19(5.2)	-	-
7	The vaccine to be developed/developed is dangerous.	144(39.1)	122(33.2)	67(18.2)	35(9.5)	-
8	I think the effectiveness of the vaccine to be developed/developed will not be/has not been tested adequately.	32(8.7)	130 (35.3)	76(20.7)	104 (28.3)	26(7.1)
9	I think I may survive the epidemic without a vaccine	49(13.3)	114(31.0)	155(42.1)	49(13.3)	1(0.3)

Table 5. The relationship between the mean scores of Individuals with Respiratory System Diseases from the "Coronavirus Phobia Scale" and the "Attitude Scale towards the COVID-19 Vaccine"

		COVID-19 Vaccine Attitude Scale	Vaccine positive attitude	Vaccine negative attitude
Coronavirus Phobia Scale	r	0.065	0.155**	-0.028
	p	0.216	**0.003**	0.591
Psychological Sub-Dimension	r	0.005	0.216**	-0.120*
	p	0.927	**0.000**	**0.021**
Somatic Sub- Dimension	r	0.083	-0.131*	0.155**
	p	0.114	**0.012**	**0.003**
Social Sub- Dimension	r	0.152**	0.349**	-0.057
	p	**0.004**	**0.000**	0.277
Economic Sub- Dimension	r	-0.169**	-0.272**	-0.004
	p	**0.001**	**0.000**	0.935

DISCUSSION

The trust of individuals in vaccines and their attitudes towards vaccines are a global public health problem (Zhang et al., 2021). Recently, because of the constantly mutating SARS-CoV-2 virus, the large number of anti-vaccine people and the constant increase in the numbers of cases and mortalities despite vaccination (Arpacı et al., 2020; Altın, 2020; Toprak et al., 2020), the COVID-19 creates concerns, unpreventable fear or anxiety in especially those with chronic diseases and continues to show its effects in the form of corona phobia (Asmundson & Taylor, 2020; Kılıç et al., 2021; Oruç & Öztürk, 2021; Sönmez et al., 2021, Kulekçioğlu et al., 2020). Regarding this issue, in Turkey and around the world, the vaccination of individuals with chronic diseases, those at or over the age of 65 and those at risk has been prioritized (MH, 2022). Understanding how COVID-19 phobia and vaccine-related attitudes are perceived by individuals who have chronic diseases is important in terms of taking the necessary precautions. For this reason, in this section, the results of our study on the COVID-19 phobia levels and COVID-19 vaccine-related attitudes of patients with respiratory diseases are discussed in comparison to other studies in the literature.

In our study, the mean total C19P-S score of the participants was above-average (56.33±6.47), their mean scores in the psychological and somatic dimensions of C19P-S were high, and their mean scores in the social and economic dimensions of C19P-S were low (Table 3). In the literature, while there are results similar to those in our study and studies showing moderate total C19P-S scores and high psychological and social dimension scores (Arpacı, 2020; Kulekçi et al., 2020; Sönmez et al., 2021), there are also studies showing in contrast to our study that these dimension scores are moderate (Çelenay et al., 2020) or low (Arpacı et al., 2020; Toprak et al., 2020). Studies have reported high levels of COVID-19 phobia in patients with respiratory diseases (Boer et al., 2021; Mousing & Sorensen, 2021). Studies that have investigated COVID-19 phobia levels have reported mean ATV-COVID-19 scores in the range of 52.84±17.55 to 57.18±19.10 (Kusk et al., 2021; Amin, 2020; Arpacı et al., 2020; Kulekçioğlu et al., 2020). The reasons for the differences in the mean C19P-S total and dimension scores in different studies may include the differences in their population characteristics, news stories about COVID-19 and vaccines, and the morbidity and mortality rates of COVID-19. These results made us think that patients with respiratory diseases think they would experience a severe case if they got infected, they experience fears about the COVID-19 pandemic for this reason, their fears turn into phobia in time, they are psychologically affected, and their social lives may be negatively influenced by their probability of catching the disease.

The participants of our study had high mean total ATV-COVID-19 and dimension scores (4.08±0.27) (Table 3). In the literature, there have been similar reports to those in our study, and more than half of individuals (at rates varying from 52% to 75%) have shown positive attitudes towards vaccines (Erkekoğlu et al., 2020; Grech et al., 2020; Kwok et al., 2020; Reiter et al., 2020). Previous studies have revealed moderate and above-average scores of participants regarding their total vaccine-related attitudes in general, as well as their positive and negative attitudes in particular (Özer & Özkan, 2021; Sönmez et al., 2021). In our study, it was thought that the participants, who consisted of patients with respiratory diseases, were vaccinated at a rate of 99% because they experienced COVID-19 phobia. Additionally, in our study, it was seen that the vaccine-related attitudes of the participants were positively influenced by their statuses of having a history of contact with a COVID-19 patient, COVID-19 positivity in themselves and COVID-19 positivity in their relatives (Table 2). Vaccination, developed to prevent diseases and alleviate symptoms, has been the most successful public health intervention from the past to the present (Erkekoğlu et al., 2020). These results led us to think that the participants may have been encouraged by state policies and positive vaccine-related news on social media to get vaccinated, individuals in society may have facilitated their perception of vaccines as a method of protection

from the disease, and they had sufficient knowledge about COVID-19 vaccines. Keeping these data in mind, it is seen that the display of positive attitudes towards COVID-19 vaccines by the participants in our study was an expected result in the process of reducing their chances of getting infected with the disease.

In our study, it was found that the participants who were 65 years old or older, those who had primary-secondary school or lower education levels, those who were married, those who were living in villages/towns and those who were not smokers had significantly higher COVID-19 phobia levels (Table 1). It is a reality that the most affected and fearful group in the COVID-19 pandemic period includes individuals over the age of 65 who have chronic diseases (Yadav et al., 2021). Studies in the literature have stated that patients with respiratory diseases, diabetes mellitus and hypertension already have higher psychological burdens, and they experience the fear of COVID-19 more intensely due to the uncertainty of the prognosis of COVID-19 (Çölkesen et al., 2021; Kohler et al., 2021; Mousing & Sorensen, 2021; Pleguezuelos, 2020). COVID-19 fears may change the responses of individuals at or over the age of 65 with respiratory diseases by strengthening the damage induced by the disease itself. It is believed to be important to provide support for especially individuals over the age of 65 who have chronic diseases for empowering them in overcoming this phobia.

In our study, the participants in the age group of 18-35, those with higher education, those who were single, those living in districts and those who were not smokers had more positive attitudes towards COVID-19 vaccines. The literature includes reports similar to those in our study showing increasingly positive vaccination-related attitudes at older ages (Kılıç et al., 2020; Thorneloe et al., 2020). Previous studies have reported that the vaccine-related attitudes of individuals with high education levels are affected more (Biasio et al., 2020; Khubchandani et al., 2021; Leng et al., 2021; Oruç & Öztürk, 2021). In our study, it was determined

that gender did not affect attitudes towards vaccines. However, some previous studies have shown that men have more positive views about vaccines than women do (Akarsu et al., 2020; Kılıç et al., 2021), whereas others have reported that women have negative attitudes about vaccines (Bell et al., 2020; Li et al., 2020). As opposed to our findings, a previous study reported higher rates of vaccination among those who were married in comparison to those who were single (Bell et al., 2020). While the participants in our study who were not smokers had more positive attitudes towards COVID-19 vaccines, another study also reported negative attitudes among smokers (Oruç & Öztürk, 2021). These results suggested that as education levels increase, individuals become more knowledgeable and responsible in terms of diseases and vaccination, and thus, they show more positive attitudes towards COVID-19 vaccines. Increasingly more positive attitudes at older ages may be associated with the thoughts of individuals that the increases in the numbers of their comorbidities will become worse with the disease. Considering that the pandemic is still in motion, it is clear that the constant provision of information about COVID-19 and its vaccines by health authorities will lead to positive behavioral changes. Otherwise, negative attitudes may emerge in individuals in terms of having their vaccination doses and ensuring the continuity of the effects of these vaccines.

In our study, the participants who had a history of contact with COVID-19 patients, those with no history of COVID-19 positivity, those with no history of COVID-19 positivity in their relatives, those who perceived their general health status as poor, those who frequently experienced breathing problems, those who experienced anxiety caused by breathing problems, those whose duration of their respiratory disease was between 1 year and 5 years and those who were COPD patients had higher COVID-19 phobia levels (Table 2). Studies in the literature that were conducted about individuals with respiratory diseases have emphasized that COVID-19 increases coronaphobia by affecting the psychology of individuals negatively (Kusk et al.,

2021; Sönmez et al., 2021; Pleguezuelos et al., 2020). Sönmez et al. (2020) determined that the perceived COVID-19-related risk levels of healthcare workers were high, and as perceived risk increased, more positive attitudes developed towards the vaccine (Sönmez et al. 2021). Salali and Uysal (2020) reported that individuals with high levels of anxiety had more positive attitudes towards COVID-19 vaccination (Salali & Uysal, 2020). Kılıç et al. (2020) found higher levels of acceptance of COVID-19 vaccines among individuals who had higher levels of fear of COVID-19 (Kılıç et al., 2020). Zhang et al. (2021) provided results that were similar to those in our study, and they stated that individuals who perceived their health as poor experienced more anxiety, and those who perceived their health as good displayed positive attitudes towards COVID-19 vaccines (Zhang et al., 2021). Oruç and Öztürk reported that the death of a relative due to COVID-19 led to more positive views about vaccination (Oruç & Öztürk, 2021). Based on the results of this study, it may be stated that having a history of contact with a COVID-19 patient or not having such a history both cause COVID-19-related phobia, and the high phobia levels of especially patients with breathing problems are an important issue to consider in providing this patient group with the necessary psychological assistance.

In our study, while a positive significant relationship was found between the C19P-S total, psychological dimension and social dimension scores of the participants and their scores indicating positive attitudes towards COVID-19 vaccines, their C19P-S somatic dimension and economic dimension scores had a negative significant relationship to their positive vaccine attitude scores. The participants' total ATV-COVID-19 scores were significantly associated with their scores in the social dimension of C19P-S in a positive direction and their scores in the economic dimension of C19P-S in a negative direction (p<0.05) (Table 4). Our findings were similar to those reported in other studies in the literature (Sönmez et al., 2020; Kwok et al., 2020; Karlsson et al., 2020). Previous studies have shown that

when COVID-19-related risk, fear, anxiety, as well as coronaphobia that is defined as a more advanced form of these increase, positive vaccination-related behavioral changes develop (Kwok et al., 2020; Karlsson et al., 2020; Sönmez et al., 2021; Tarus et al., 2021). It has been emphasized that individuals who have high levels of anxiety associated with the COVID-19 pandemic are more likely to agree to COVID-19 vaccination (Salali & Uysal, 2020; Turhan et al., 2021). In light of these results, we believe that because the number of problems that could be encountered by the patients in our study who had respiratory diseases due to their disease was high, their positive attitudes about COVID-19 vaccines increased in proportion to their increased COVID-19 phobia levels. It is seen that fear has reached the level of phobia in the COVID-19 pandemic period. Considering that the COVID-19 pandemic prevents individuals with chronic diseases from attending routine health follow-ups by causing them to adopt avoidance behaviors, it is important to acknowledge the increased numbers of diagnosed and hospitalized patients despite vaccination, eliminate the anxieties and fears of individuals who have respiratory diseases in the ongoing pandemic period by taking preventive measures and ensure that they are psychologically supported.

CONCLUSION AND RECOMMENDATIONS

While the COVID-19 pandemic period and the vaccination process are still going on, it is highly important to determine the COVID-19 phobia levels of individuals with chronic diseases such as respiratory diseases and their attitudes towards COVID-19 vaccines. In this study, it was concluded that the coronaphobia levels of the participants were above-average, while their attitudes towards COVID-19 vaccines were positive in general.
In line with these results:

- ✓ It is needed to investigate the positive and negative coping strategies used by individuals who have chronic diseases such as respiratory diseases against coronaphobia.

✓ Positive coping methods should be developed, and the use of negative methods should be discouraged.
✓ Psychological counseling should be provided.
✓ Individuals should be informed about COVID-19 vaccines, and the necessary strategies should be developed to encourage people to adopt positive behaviors about vaccination.

Limitations

This study had some limitations. The results of this study do not reflect the general population in XXX. Sample of this study are limited to patients with respiratory diseases who accepted to participate in the study and present to the FHC where the study was carried out for their examinations. Moreover, our results may be specific to Turkish patients with respiratory diseases due to cultural differences.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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