ATTITUDES AND RELATED FACTORS OF ADULT INDIVIDUALS IN TURKEY TOWARD CORONAVIRUS-19 PHOBIA AND COVID-19 VACCINE

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ABSTRACT

The aim of this study is to determine the attitudes and related factors of adult individuals in Turkey toward Coronavirus-19 phobia and the COVID-19 vaccine. This descriptive, cross-sectional study was completed with 2053 people aged between 18-65 years using the regional stratified sampling method. The data were collected with a socio-demographic information questionnaire, Coronavirus-19 phobia scale, and scale of attitudes toward the COVID-19 vaccine. The mean age of the participants was 34.26±12.50 years. As a result of the study, the participants were found to have a moderate coronaphobia and a vaccination attitude above moderate. It was found that as the level of coronaphobia increased, the vaccination attitude enhanced positively. Individuals with Corona Virus 19 Phobia level; Statistically significant results were found between gender, age, marital status, number of children, place of residence, income level, region of residence, number of siblings, and education about COVID-19. With the Attitudes of Individuals towards the COVID-19 Vaccine; Statistically significant results were found between gender, age, marital status, number of children, income level, region of residence, number of siblings, and education about COVID-19. Coronaphobia and vaccination attitude were affected by many factors such as age, marital status, and region of residence, and recommendations were provided in line with the results of the study.

Keywords: Adult individuals; phobias; COVID-19 vaccines; attitude.

INTRODUCTION

According to the WHO report dated May 12, 2022, COVID-19 has caused a number of physiological, social, economic, and psychological public health problems (Lai et. al., 2020) and approximately 546 million cases and the death of more than 6.3 million people (WHO, 2022) and has not been fully controlled yet (Arpaci et. al., 2020a). In the literature, pandemics, in general, are associated with depression, anxiety, fear of death, fear of losing loved ones, and post-traumatic stress disorder (Akat&Karatas, 2020) and similarly, the COVID-19 pandemic is stated to cause many negative psychological conditions such as post-traumatic stress disorder, anxiety, depression, loneliness, distress, fear, anger, and fear of stigma (Alyami et. al., 2020; Arslan et. al., 2020; Cao et. al., 2020; Kong et. al., 2020; Moghanibashi-Mansourieh, 2020; Yang et. al., 2020; Wang et. al., 2020; Wheaton&Ward, 2020) as well as suicides(Mamun&Griffiths, 2020).

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The COVID-19 or Corona pandemic disrupts people's routines and thus leads to anxiety and phobic reactions (Arpaci et. al., 2020a; Li et. al., 2020; Duan&Zhu, 2020; Wang et. al., 2020; Xiao, 2020). The term "coronaphobia" was defined by researchers as "extreme fear due to COVID-19" (Arpaci et. al., 2020a; 2022; Asmundson&Taylor, 2020; Lindinger-Sternart et. al., 2021). It is important to operationalize and define COVID-19 phobia, to provide timely psychological support to individuals with high levels of COVID-19 phobia, and to prevent more complex psychiatric disorders (Arpaci et. al., 2020 a; 2020b; Arpaci et. al., 2021; Duan&Zhu, 2020; Qiu et. al., 2020).

Global efforts to diminish the health and socio-economic impact of the pandemic are predominantly based on preventive efforts (Nicola et. al., 2020; Calina et. al., 2020). Among the pandemic prevention efforts, vaccination is one of the most cost-effective preventive interventions (Lurie et. al., 2020; Bai et. al., 2020). WHO estimates that annually 2-3 million lives are saved with the vaccine (WHO Why Vaccine, 2021). In a systematic review of COVID-19 vaccine acceptance rates by Sallam (2021), the results of 33 different countries were reviewed and the highest COVID-19 vaccine acceptance rates were highest in Ecuador(97.0%), Malaysia(94.3%), Indonesia(93.3%) and China(91.3%); and lowest in Kuwait(23.6%), Jordan(28.4%), Russia(54.9%), Poland(56.3%), USA(56.9%), and France(58.9%) among adults representing the general public. The same study reported the vaccine acceptance rate in Turkey as 66%. It is required to provide population immunity and exceed the threshold rate by vaccinating many people in order for vaccines to be effective in a pandemic. Therefore, it is of great importance for many countries to attempt to develop effective strategies for the acceptability of vaccination considering all factors determining vaccination intention (Bingham, 2021). In Turkey, 2 out of 5 available vaccines(Sinovac and Biontech/Pfizer) are currently being administered and a 3rd and newly produced TURCOVAC vaccine has been started to be administered with 16 vaccine production studies still in progress(Ministry of Health, Vaccine Production Technologies, 2021). On April 24, 2021, when the study was planned, 7,955, 200 (10.5% of the country's population) people completed the second dose of COVID-19 vaccine in Turkey, while almost 53 million people (62.6%) have been administered the second dose of vaccine by February 15, 2022(Ministry of Health, 2022). Despite great efforts to achieve a successful COVID-19 vaccination, vaccine hesitancy and negative attitude toward approved and prospective COVID-19 vaccines may constitute major barriers (Sallam, 2021). An acceptance rate of 66% and a vaccination rate of 62.6% (Ministry of Health, 2022) are not sufficient for pandemic control (Sallam, 2021). As far as is known, there are studies on Coronaphobia and COVID-19 vaccine attitudes with individuals aged 18 (Turan et. al., 2021) and elderly individuals (Ozer&Ozkan, 2021). There is no study utilizing regional stratified sampling and has a sample group as large as our study with a sample between the ages of 18-65. Therefore, our aim in this study is to determine the attitudes and related factors of adult individuals in Turkey toward Coronavirus-19 phobia and the COVID-19 vaccine.

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Aim of the study: This study was conducted to determine the attitudes and related factors of adults in Turkey toward Coronavirus-19 phobia and the COVID-19 vaccine.

MATERIAL AND METHOD

Type of study: It is a descriptive and cross-sectional study.

Study questions:
- What is the level of Adult Attitude towards COVID-19 Phobia and COVID-19 Vaccine?
- Is there a relationship between socio-demographic data and Adults' Attitudes towards COVID-19 Phobia and COVID-19 Vaccine?
- Is there a relationship between Attitudes toward COVID-19 Phobia and the COVID-19 Vaccine in Adults?

The place and qualifications of the study: This study was carried out on platforms where adults living in Turkey can participate online(from social media accounts via Google Forms).

Population-sample: The population of the study consists of 52,827,513 individuals in the age group 18-65, registered in the Address Based Population Registration System of the Turkish Statistical Institute in 2020 (TUIK, 2020). There are 81 provinces and 7 regions in Turkey. It is important to determine a sample that is as large as possible in terms of time and possibilities and that is strong enough to represent the universe for determining the size of the sample(Fraenkel et. al., 2018). Therefore, in determining the sample size, the required sample size was calculated as 1849 individuals with a confidence level of 99%, a confidence interval of 4%, and a sampling error of ±5% for the non-homogeneous universe. The stratified method according to regions was used for the distribution of the sample individuals. In the sample stratified calculation for the Marmara region, the stratified ratio was calculated by dividing the region's population by the total population for 597 individuals out of 17,063,995 individuals (17,063,995/52,827,513=0.323) and by multiplying the result with the total number of samples to be reached (0.323x1,849=597), thereby acquiring the regional sample number. Stratified sampling was conducted according to the regions(Marmara 597, Aegean 244, Mediterranean 235, Central Anatolia 300, Black Sea 176, Southeastern Anatolia 162, Eastern Anatolia 135) and all stratifications were reached. The study was completed with 2.053 people.

Data Collection Tools:

Socio-demographic information questionnaire: It is a form consisting of 21 questions including socio-demographic characteristics and other affecting factors created by researchers in line with the literature(Arpaci et. al., 2020a; 2022; Bai et. al., 2020; Wide et. al., 2020; Lindinger- Sternart et. al., 2021).

Coronavirus-19 Phobia Scale(C19P-S): The C19P-S is a 5-point Likert-type self-assessment scale with 4 sub-dimensions(Psychological, Psycho-somatic, Social and Economic), developed to measure the phobia that may develop toward the Coronavirus. Scale items are evaluated as follows:(1)"Strongly Disagree" and(5)"Strongly Agree". While the sub-dimension scores are obtained by the sum of the answers given to the items of the related sub-dimension, the total C19P-S score is obtained by the sum of the sub-dimension scores and ranges from 20 to 100 points. Higher scores indicate the higher scores in sub-dimensions and general Coronavirus phobia. Cronbach's alpha values of the scale by Arpaci et. al. were as follows: The Psychological Sub-dimension was .87, the Psycho-somatic Sub-dimension was .89, the Social Sub-dimension was .903, the Economic Sub-dimension was .851 and the total score was .925(Arpaci et. al., 2020a). In this study, the Psychological Sub-Dimension was calculated as .928, the Psycho-somatic Sub-Dimension as .927, the Social Sub-Dimension as .923, the Economic Sub-Dimension as .914, and the total score was .968. The internal consistency of the scale was proven by researchers(Arpaci et. al., 2022; Lindinger-Sternart et. al., 2021).

The scale of Attitudes toward COVID-19 Vaccine: It consists of 9 items and has two sub-dimensions(positive and negative attitude.) The statements in the scale are evaluated as "Strongly disagree(1)" and "Strongly agree(5)". Items in the negative attitude sub-dimensions are inversely scored. High scores obtained from the positive attitude sub-dimension indicate a positive attitude toward the vaccine. The items in the negative attitude sub-dimension are inversely calculated and the high scores in this sub-dimension indicate a lower negative attitude toward the vaccine. Genis et. al. calculated positive attitude Cronbach's alpha as .96; negative attitude Cronbach's alpha as .78 and the scale total Cronbach's alpha as .80 (Genis et. al., 2020). In this study, Cronbach's alpha values were calculated as .954 for positive attitude, .884 for negative attitude and .804 for the entire scale.

How to Collect Data: The questionnaire adaptation program(doc.google) prepared for the study was sent to the participants via social media(via WhatsApp, Facebook, or students' e-mail addresses) and the participants were asked to fill in.

Data Analysis: The data obtained in the study were evaluated by the researchers using 10 different analysis methods using the Statistical Package for Social Sciences version 26.00 (SPSS IIBM, 2019) package program on the computer. Frequency, percentage, Pearson's Product-Moment correlation analysis, Linear Regression analysis, t-test, One-Way Analysis of Variance, Kruskal Wallis H test, LSD Post Hoc test, Dunnet T3 Post Hoc test and Cronbach's Alpha analysis were used to evaluate the data in the study. The normal distribution suitability of the variables was evaluated with Skewness-Kurtosis. In statistical analyzes, the level of significance is accepted as $p<.05$.

Challenges and limitations of the study: One of the limitations of the study is that the study was conducted online and could only be generalized to the participants with internet access and accepting to participate in the study.

Inclusion criteria for the study: Individuals between the ages of 18-65, who volunteered to participate in the study, and who could have online access were included in the study.

Start-end date of the study: The study was conducted between 01.05.2021 and 31.08.2021.

Research Ethıcs: Ethics committee approval was obtained for this research after being examined in the session numbered 81829502.903/196, dated 01.06.2021 and numbered 17 of the Non-Interventional Ethics Committee of the Faculty of Health Sciences of a university. Permission was received from the authors who developed the measurement tools used in the research. It was stated to the individuals who will participate to the research that data to be gathered from the research would only be used for scientific purposes, and that they could desist the research at any time they want. The first page of the online questionnaire was the consent page that participants were asked whether they agreed to participate in the study or not. While the participants who agreed to participate in the study were allowed to proceed to the next page of the online questionnaire; those who did not agree to participate were not allowed to proceed to see the questions. Identities of the researchers were also provided on the first page of the questionnaire.

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RESULTS

The study was completed with 2,053 adults. 57.1% of the participants are female, 36% are 21-30 years old(mean age, 34.26±12.50), 52.4% are married, 49.29% have no children, 23.5% have 2 children, 29.1% live in Marmara region, 65.8% live in the province, 70.3% have a medium-income, 72.1% do not use any substances, 22.1% are smokers, 50.3% have 2 siblings, 32.9% have a bachelor's degree, 28.5% are from other professions(other than self-employed, teacher, academician, police/soldier/security guard, doctor, psychologist, student, government employee, nurse/midwife, secretary/laborant/anesthesiologist/imaging specialist/paramedic, engineer, physiotherapist, pilot/cabin attendant), 48.3% have mothers of primary school graduation, 43.1% have fathers of primary school graduation.

Table 1. Findings related to the characteristics of the participants regarding COVID-19 (n=2.053)

	S	%
Training on COVID-19		
Yes	539	26.3
No	1.514	73.7
Having infected with COVID-19 disease		
Yes	396	19.3
No	1.657	80.7
Family members or close friends infected with COVID-19		
Yes	1.507	73.4

No	546	26.6
Training on COVID-19 vaccine		
Yes	361	17.6
No	1.692	82.4
Having a chronic disease		
Yes	342	16.7
No	1.711	83.3
Considering/getting a COVID-19 vaccine		
Yes	1.212	59.0
No	841	41.0
Why does he/she want to get the COVID-19 vaccine, why did he/she get the vaccine?		
High severity of the disease	97	6.2
High mortality due to disease	67	4.3
Loss of relatives due to disease	39	2.5
Protecting family and friends	203	13.0
Feeling safe with vaccine	138	8.8
Due to the safety of the vaccine	72	4.6
For more than one reason	949	60.6
Why does not he/she want to get the COVID-19 vaccine?		
Belief in multiple side effects of the vaccine	147	13.5
Disbelief in vaccine protection	97	8.9
Belief in light recovery from the disease	60	5.5
Having infected with COVID-19 Disease	40	3.7
Importation of the vaccine from another country	70	6.4
Disbelief in the life-threatening nature of the infection	24	2.2
For more than one reason	650	59.7

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On examination of table 1, it is seen that 73.7% of the participants did not receive any training on COVID-19. 80.7% of them have not been infected with COVID-19 disease. 73.4% have family members/relatives infected with COVID-19 disease. 82.4% have not received any training on the COVID-19 vaccine. 83.3% do not have a chronic disease. 59% have got or are considering getting the COVID-19 vaccine. 41% have not got or are not considering getting the COVID-19 vaccine. 60.6% of people who have got or are considering getting the COVID-19 vaccine want the vaccine for more than one reason. It is seen that 59.7% of them do not want to be vaccinated for more than one reason.

Table 2. Linear Regression Analysis Results regarding the prediction of Coronavirus-19 Phobia Scale scores on the Scale of Attitudes toward COVID-19 Vaccine scores (n=2.053)

	Variable	B	Standart Error	Beta	t	P
POSITIVE ATTITUDE	Stable	1.873	.073		25.586	.000
	Psychological	**.110**	**.008**	**.582**	**13.555**	**.000**

	Psychosomatic	**.042**	**.012**	**.171**	**3.528**	**.000**
	Social	-.010	.011	-.045	-.946	.344
	Economic	-.001	.014	-.005	-.096	.923
	R=.449	R²=.202				
	F₍₄.₂₀₄₈₎=129.353	**p<.001**				
NEGATIVE ATTITUDE	Stable	3.720	.064		58.210	.000
	Psychological	**-.021**	**.007**	**-.138**	**-2.956**	**.003**
	Psychosomatic	**-.027**	**.010**	**-.136**	**-2.563**	**.010**
	Social	**-.021**	**.009**	**-.116**	**-2.216**	**.027**
	Economic	-.022	.012	-.090	-1.747	.081
	R=.224	R²=.050				
	F₍₄.₂₀₄₈₎=26.925	**p<.001**				
ATTITUDE TOTAL	Stable	2.899	.049		59.132	.000
	Psychological	**.060**	**.005**	**.506**	**11.135**	**.000**
	Psychosomatic	**.034**	**.008**	**.216**	**4.197**	**.000**
	Social	**.016**	**.007**	**.113**	**2.232**	**.026**
	Economic	-.013	.010	-.066	-1.329	.184
	R=.323	R²=.104				
	F₍₄.₂₀₄₈₎=59.559	**p<.001**				

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Participants scored 52.28±20.93 in the Corona Virus 19 Phobia Scale, 17.66±7.18 in the Psychological sub-dimension, 11.5±5.50 in the Psycho-somatic sub-dimension, and 13.85±5.98 in the Social sub-dimension. It was found that the participants scored 3.24±.86 in the total of the COVID-19 Vaccine Attitudes Scale, 3.17±1.36 in the positive attitude sub-dimension, and 3.24±.86 in the negative attitude sub-dimension.

Positive Attitude scores toward the COVID-19 Vaccine indicate significant relationships with the sub-dimensions of Coronavirus-19 Phobia: "Psychological", "Psycho-somatic", "Social", "Economic" (R=.449; R²=.202; p<.05). "Psychological", "Psycho-somatic", "Social", and "Economic" variables of Coronavirus-19 Phobia explain 20% of the total variance of Positive Attitude toward the COVID-19 Vaccine. On examination of the t-test results regarding the significance of the regression coefficients, only the Psychological Sub-dimension and the Psycho-somatic Sub-dimension variables seem to increase the Positive Attitude toward the COVID-19 Vaccine and are significant predictors(table 2).

Negative Attitude scores toward the COVID-19 Vaccine indicate significant relationships with the sub-dimensions of Coronavirus-19 Phobia: "Psychological", "Psycho-somatic", "Social", "Economic"(R=.224; R²=.050; p<.05). "Psychological", "Psycho-somatic", "Social", and

"Economic" variables of Coronavirus-19 Phobia explain 5% of the total variance of Negative Attitude toward the COVID-19 Vaccine. On examination of the t-test results regarding the significance of the regression coefficients, the Psychological Sub-dimension, the Psycho-somatic Sub-dimension, and Social Sub-dimension variables seem to decrease the Negative Attitude toward the COVID-19 Vaccine and are significant predictors(table 2).

Attitude total scores toward the COVID-19 Vaccine indicate significant relationships with the sub-dimensions of Coronavirus-19 Phobia: "Psychological", "Psycho-somatic", "Social", "Economic"(R=.323; R^2=.104; p<.05). "Psychological", "Psycho-somatic", "Social", and "Economic" variables of Coronavirus-19 Phobia explain 10% of the total variance of Attitude toward COVID-19 Vaccine total scores. On examination of the t-test results regarding the significance of the regression coefficients, the Psychological Sub-dimension, the Psycho-somatic Sub-dimension, and Social Sub-dimension variables seem to increase total scores of Attitude toward the COVID-19 Vaccine and are significant predictors (table 2).

As seen in table 3, the mean score of the Coronavirus-19 Phobia Scale and the Psycho-somatic and Economic Sub-dimensions are higher for men than for women. The mean scores of the Scale of Attitudes toward the COVID-19 Vaccine and the Positive Attitude Sub-dimension of women were found higher compared to men and significant at the p<.05 significance level. The mean scores of the Coronavirus-19 Phobia Scale and the Psycho-somatic, Social, and Economic Sub-dimensions of the 51-60 age group were higher than all other age groups and found significant at the p<.05 significance level. The scale of Attitudes toward COVID-19 Vaccine mean scores, Positive Attitude and Negative Attitude Sub-dimensions were found higher and significant at p<.05 significance level for those aged 61 and above compared to other age groups. The mean scores of the Coronavirus-19 Phobia Scale and the Psychological, Psycho-somatic, Social, and Economic Sub-dimensions of the widows were higher than those of the single and married, and significant at p<.05 significance level, while the mean scores of the Scale of Attitudes toward COVID-19 Vaccine and the Negative Attitudes sub-dimension were found higher in the singles than in the married ones and significant at the p<.05 significance level. The mean scores of the Coronavirus-19 Phobia Scale and Psychological, Psycho-somatic, Social, and Economic Sub-dimensions were found higher and statistically significant for those who had 1, 2, 3, or more children compared to those who did not have children. The Scale of Attitudes Towards COVID-19 Vaccine mean scores of those not having children compared to those having 1 and 2 children; Positive Attitude sub-dimension scores of those having 3 or more children compared to those having less children; and Negative Attitude sub-dimension scores of those having no children compared to those having children were found higher and significant at the p<.05 significance level. The mean scores of the Coronavirus-19 Phobia Scale and Psycho-somatic, Social, and Economic Sub-dimension scores were found higher and statistically significant for those living in the province than those living in towns and villages. The differences between the Negative Attitude sub-dimension scores of those living in the district and those living in the province were higher and found to be significant at the p<.05 significance level.

As seen in table 3, the differences between the Coronavirus-19 Phobia Scale scores of those living in the Marmara, Aegean, and Mediterranean regions and those living in the Black Sea region and between those living in the Central Anatolia region and those living in other regions are higher and significant at the p<.05 significance level. The differences between the scores of the Scale of Attitudes toward the COVID-19 Vaccine and the Negative Attitudes sub-dimension of those living in the Mediterranean and Eastern Anatolia regions and those living in the Marmara and Central Anatolia regions were found higher and significant at the p<.05 significance level. The differences between the scores of the Positive attitude sub-dimension of those living in the Marmara, Mediterranean, Eastern Anatolia, and Southeastern Anatolia regions than those living in the Central Anatolia region are higher and significant at the p<.05 significance level.

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As seen in table 3, the Coronavirus-19 Phobia Scale mean scores and Psychological and Social Sub-dimensions of those in the middle-income group and those in the low-income group are higher and significant at the p<.05 significance level. The differences between the Psycho-somatic Sub-dimension and the Economic Sub-dimension scores of the high-income and low- and middle-income groups are higher and significant at the p<.05 significance level. The differences between the scores on the Scale of Attitudes toward COVID-19 Vaccine in the middle-income group and those in the high-income group were found higher and significant at the p<.05 significance level. The Positive Attitude is higher in the middle-income group than in the low-income group and significant at the p<.05 significance level. The differences between the Negative Attitude sub-dimension scores of those with low and middle-income levels and those with high income are higher and significant at p<.05 significance level.

Table 3. Comparison of Coronavirus-19 Phobia Scale and Scale of Attitudes toward COVID-19 Vaccine scores according to the descriptive characteristics of the participants (n=2.053)

		Coronavirus-19 Phobia Scale	Psychological	Psychosomatic	Social	Economic	Attitudes toward COVID-19 Vaccine	Positive Attitude	Negative Attitude
		X± SD	X±SD	X±SD	X± SD	X± SD	X± SD	X± SD	X± SD
Gender	Female	51.37±20.38	17.73±7.22	11.08±5.26	13.63±5.88	8.93±4.272	3.29±.85	3.25±1.33	3.32±1.06
	Male	53.50±21.59	17.57±7.11	12.05±5.74	14.15±6.08	9.74±4.737	3.17±.85	3.07±1.37	3.24±1.10
	P Value[1]	p=.023	p=.613	p<.001	p=.051	p<.001	p=.001	p=.003	p=.094
Age	20 years and under	47.32±18.48	16.56±7.02	9.94±4.556	12.57±5.57	8.25±3.740	3.31±.79	3.21±1.34	3.40±1.09
	21-30 years	48.58±19.28	16.70±7.01	10.49±4.89	12.78±5.60	8.62±4.057	3.26±.80	3.16±1.33	3.33±1.07
	31-40 years	51.04±21.71	17.11±7.37	11.36±5.65	13.50±6.02	9.08±4.622	3.13±.88	2.98±1.40	3.26±1.07
	41-50 years	56.72±20.91	18.90±7.05	12.60±5.59	15.27±6.09	9.95±4.625	3.21±.94	3.22±1.35	3.19±1.09
	51-60 years	64.45±21.03	20.83±6.66	14.85±5.89	17.00±5.78	11.76±4.98	3.23±.85	3.30±1.29	3.17±1.07
	61 years and older	56.14±21.35	19.12±6.31	12.23±6.39	15.05±5.90	9.74±4.933	3.80±869	4.02±1.07	3.62±1.05
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p=.015
Marital status	Single	47.59±18.34	16.64±6.94	10.06±4.59	12.59±5.42	8.30±3.84	3.33±.77	3.23±1.32	3.41±1.05
	Married	55.57±22.15	18.34±7.29	12.54±5.87	14.72±6.21	9.97±4.82	3.16±.91	3.12±1.38	3.18±1.14
	Widow	62.12±20.20	20.25±6.52	14.00±5.65	16.67±5.80	11.21±4.57	3.29±.83	3.18±1.35	3.38±1.03
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p=.251	p<.001
Number of children	None	46.48±18.14	16.02±6.82	9.98±4.36	12.26±5.50	8.22±3.74	3.33±.73	3.14±1.36	3.47±1.09
	1 child	53.54±21.30	18.00±7.47	11.66±5.42	14.62±6.20	9.25±4.47	3.08±.99	3.00±1.42	3.15±1.11
	2 children	56.12±21.63	18.54±7.19	12.70±5.69	14.81±6.12	10.07±4.76	3.11±.90	3.06±1.37	3.15±1.09
	3 or more children	59.68±23.87	19.08±7.37	14.04±6.53	15.51±6.38	11.05±5.23	3.27±.86	3.35±1.35	3.21±1.11
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001
Place of residence	Province	53.90±21.37	18.13±7.19	11.91±5.67	14.27±6.06	9.59±4.65	3.23±.89	3.21±1.35	3.24±1.09
	District	49.03±19.31	16.79±7.02	10.63±4.95	13.07±5.71	8.54±3.99	3.27±.80	3.09±1.35	3.41±1.06
	Village	49.62±20.91	16.66±7.23	10.91±5.35	13.01±5.80	9.05±4.43	3.21±.70	3.14±1.33	3.27±1.03
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p=.568	p=.261	p=.011
Region of residence	Marmara Region	52.14±21.27	17.63±7.08	11.48±5.74	13.76±5.91	9.26±4.60	3.20±.92	3.22±1.35	3.18±1.09
	Aegean Region	52.87±19.07	18.13±7.05	11.4±4.867	14.19±5.90	9.07±4.07	3.23±.96	3.10±1.37	3.32±1.12
	Central Anatolia Region	57.14±20.81	19.10±7.02	12.61±5.59	15.54±5.96	9.89±4.71	3.10±.99	2.95±1.37	3.22±1.18
	Mediterranean Region	54.24±24.31	17.75±7.61	12.53±6.59	13.96±6.50	10.00±5.29	3.34±.68	3.22±1.34	3.45±.99
	Eastern Anatolia Region	48.67±19.13	16.87±7.37	10.21±4.42	12.95±5.61	8.64±4.00	3.37±.75	3.32±1.33	3.41±1.05
	Southeastern Anatolia Region	51.47±21.56	17.27±7.17	11.41±5.55	13.34±6.01	9.44±4.47	3.28±.68	3.19±1.28	3.36±.99
	Black Sea Region	47.85±17.63	16.33±6.76	10.36±4.43	12.75±5.50	8.41±3.58	3.24±.73	3.20±1.40	3.28±1.04
	P Value[2]	p<.001	p=.001	p<.001	p<.001	p<.001	p=.004	p=.043	p=.011
Income	Low	48.13±20.04	16.19±7.42	10.75±5.18	12.52±5.64	8.67±4.17	3.18±.82	2.95±1.38	3.37±1.13
	Medium	51.32±20.23	17.52±7.02	11.11±5.25	13.70±5.89	8.98±4.32	3.28±.85	3.23±1.34	3.32±1.05
	High	61.14±22.73	19.82±7.18	14.09±6.20	15.93±6.18	11.30±5.04	3.10±.88	3.12±1.36	3.08±1.14
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p=.002	p=.004	p=.001

[1] t test was used   [2] F Test (LSD Post Hoc test) was used

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Table 4. Comparison of Coronavirus-19 Phobia Scale and Scale of Attitudes toward COVID-19 Vaccine scores according to the characteristics of the participants relating to COVID-19 (n=2.053)

		Coronavirus-19 Phobia Scale X±SD	Psychological X±SD	Psychosomatic X±SD	Social X±SD	Economic X±SD	Attitudes toward COVID-19 Vaccine X±SD	Positive Attitude X±SD	Negative Attitude X±SD
Training on COVID-19	Yes	45.97±17.86	16.22±6.89	9.64±4.10	12.23±5.49	7.89±3.49	3.41±.86	3.32±1.39	3.48±1.07
	No	54.53±21.48	18.17±7.21	12.16±5.77	14.43±6.03	9.77±4.70	3.18±.84	3.12±1.33	3.22±1.08
	P Value[1]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p=.003	p<.001
Having infected with COVID-19 disease	Yes	49.95±21.46	16.98±7.49	11.19±5.40	12.87±6.02	8.91±4.42	3.27±.84	3.13±1.37	3.38±1.12
	No	52.84±20.77	17.82±7.09	11.57±5.51	14.09±5.94	9.37±4.50	3.23±.85	3.18±1.35	3.27±1.07
	P Value[1]	p=.013	p=.036	p=.222	p<.001	p=.068	p=.349	p=.544	p=.052
Family members or close friends infected with COVID-19	Yes	53.51±21.35	18.07±7.21	11.77±5.64	14.19±6.02	9.48±4.61	3.28±.82	3.23±1.33	3.32±1.05
	No	48.89±19.33	16.52±6.96	10.73±4.98	12.93±5.76	8.71±4.09	3.13±.92	3.01±1.40	3.22±1.15
	P Value[1]	p<.001	p<.001	p<.001	p<.001	p<.001	p=.001	p=.001	p=.090
Training on COVID-19 vaccine	Yes	44.82±17.79	15.62±6.80	9.48±4.11	11.87±5.48	7.84±3.54	3.44±.89	3.37±1.39	3.50±1.09
	No	53.88±21.21	18.09±7.18	11.93±5.65	14.27±5.99	9.58±4.61	3.19±.84	3.13±1.34	3.24±1.07
	P Value[1]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p=.002	p<.001
Having a chronic disease	Yes	56.77±22.11	18.84±7.27	12.84±5.97	14.95±6.15	10.15±4.88	3.38±.83	3.27±1.35	3.46±1.04
	No	51.39±20.58	17.42±7.13	11.23±5.35	13.63±5.92	9.10±4.39	3.21±.85	3.15±1.35	3.26±1.09
	P Value[1]	p<.001	p=.001	p<.001	p<.001	p<.001	p=.001	p=.145	p=.001
Considering getting a COVID-19 vaccine	Yes	53.06±20.04	18.39±7.02	11.30±5.32	14.22±5.84	9.15±4.35	3.61±.71	3.67±1.23	3.57±.98
	No	51.17±22.11	16.60±7.27	11.78±5.73	13.33±6.13	9.46±4.68	2.69±.74	2.45±1.18	2.89±1.10
	P Value[1]	p=.049	p<.001	p=.053	p=.001	p=.132	p<.001	p<.001	p<.001
Why does he/she want to get the COVID-19 vaccine, why did he/she get the vaccine?	High severity of the disease	40.06±15.85	14.07±6.46	8.72±3.60	10.31±4.80	6.96±3.10	2.98±.93	2.71±1.37	3.20±1.20
	High mortality due to disease	41.16±17.98	13.88±7.06	9.03±3.91	10.81±5.31	7.45±3.45	3.09±.94	2.88±1.48	3.26±1.27
	Loss of relatives due to disease	39.26±22.59	12.82±7.79	8.95±5.08	9.85±5.91	7.64±4.55	2.94±.87	2.55±1.47	3.26±1.38
	Protecting family and friends	42.66±16.98	14.76±6.61	9.15±4.03	11.04±4.94	7.70±3.49	3.10±.78	2.83±1.29	3.31±1.09
	Feeling safe with vaccine	44.49±17.58	15.51±6.73	9.57±4.26	11.86±5.27	7.55±3.61	3.56±.77	3.53±1.31	3.58±1.08
	Due to the safety of the vaccine	41.18±16.29	13.53±6.61	9.13±3.67	10.85±4.78	7.68±3.19	3.02±.91	2.77±1.36	3.23±1.16
	More than one reason	56.10±20.06	19.32±6.77	12.01±5.52	15.05±5.80	9.72±4.51	3.59±.73	3.69±1.22	3.50±1.00
	P Value[2]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p=.004
Why does not he/she want to get the COVID-19 vaccine, why have not he/she got the vaccine?	Belief in multiple side effects of the vaccine	45.35±18.18	15.71±7.12	9.69±4.41	11.97±5.46	7.99±3.71	3.20±.64	3.01±1.25	3.36±1.06
	Disbelief in vaccine protection	41.11±16.74	13.69±6.53	9.22±3.83	10.73±4.91	7.47±3.22	2.83±.71	2.54±1.24	3.06±1.21
	Belief in light recovery from the disease	42.98±17.12	14.62±6.87	9.57±3.98	11.10±5.08	7.70±3.38	3.44±.68	3.21±1.43	3.62±.92
	Having infected with COVID-19 Disease	48.55±18.74	16.10±6.70	11.00±5.33	12.83±5.26	8.63±3.96	3.56±.62	3.34±1.20	3.75±.94
	Importation of the vaccine from another	44.97±16.72	15.56±7.30	9.51±3.38	12.06±5.13	7.84±3.24	3.18±.68	3.03±1.23	3.29±.98
	Disbelief in the life-threatening nature of the infection	40.33±20.84	13.54±7.58	9.29±5.12	10.08±5.61	7.42±3.90	3.17±.70	3.02±1.50	3.29±1.17
	More than one reason	54.10±22.78	17.37±7.33	12.55±5.96	14.14±6.27	10.03±4.88	2.64±.75	2.45±1.22	2.80±1.09
	P Value[3]	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001	p<.001

[1] t-test was used [2] f test (LSD Post Hoc) was used [3] f test (Dunnet T3 Post Hoc) was used

On examination of table 4, the Coronavirus-19 Phobia Scale mean scores and Sub-dimension scores, Scale of Attitudes toward COVID-19 Vaccine mean scores, Positive Attitude and Negative Attitude Sub-dimensions of those who have not received any training on COVID-19 were found higher(p<.05). The Coronavirus-19 Phobia Scale mean scores and the Psychological and Social Sub-dimension of the participants not having been infected with COVID-19 disease were found higher compared to those having been infected with COVID-19 disease(p<.05). Coronavirus-19 Phobia Scale mean scores and its Sub-dimensions and Scale of Attitudes toward COVID-19 Vaccine mean scores and Positive Attitude Sub-dimension of those having family or close friends infected with COVID-19 were found higher and significant at p<.05 significance level, compared to those with no family members or close friends infected with COVID-19. The coronavirus-19 Phobia Scale mean scores and its Sub-dimensions and the Scale of Attitudes toward COVID-19 Vaccine mean scores and Positive Attitude of those who have not received any training on COVID-19 vaccine were found higher and Negative Attitude score lower at a significance level of p<.05. Coronavirus-19 Phobia Scale mean scores and its Sub-dimensions and Scale of Attitudes toward COVID-19 Vaccine mean scores were found higher in those having a chronic disease than those not having a chronic disease at the p<.05 significance level. Coronavirus-19 Phobia Scale mean scores and Psychological, Social Sub-dimensions and Scale of Attitudes toward COVID-19 Vaccine mean scores, and Positive Attitude Sub-dimension were found higher in those considering getting or having got COVID-19 vaccine and significant at p<.05 significance level, compared to those who have not got the COVID-19 vaccine.

On examination of table 4, it is seen that the Coronavirus-19 Phobia Scale mean scores and its Sub-dimensions are higher, among those who want to get/have got the COVID-19 vaccine, in those stating "More than one reason" and statistically significant compared to those stating the reasons "High severity of the disease", "High mortality due to disease", "Loss of relatives due to disease", "Protecting family and friends", "Feeling safe with vaccine", and "Safety of the vaccine." The differences between the Scale of Attitudes toward COVID-19 Vaccine mean scores, Positive Attitude, and Negative Attitude Sub-dimension scores are higher and statistically significant in those stating "Feeling safe with vaccine" and "More than one reason" than those stating the reasons "High severity of the disease", "High mortality due to disease", "Protecting family and friends" and "Because of the safety of the vaccine". The differences between the Attitudes Scale mean score, Positive Attitude, and Negative Attitude Sub-dimension scores were found to be higher and statistically significant.

On examination of table 4, it is seen that the differences between the Coronavirus-19 Phobia Scale mean scores and the Sub-dimension scores are higher and significant at the p<.05 significance level in those stating "More than one reason" among those who do not want to get/have not got the COVID-19 vaccine than those stating the reasons "Belief in multiple side effects of the vaccine", "Disbelief in vaccine protection", "Belief in light recovery from the disease", "Importation of the vaccine from another country" and "Disbelief in life-threatening nature of the infection." It is seen that the differences between the Scale of Attitudes toward COVID-19 Phobia Vaccine mean scores and the Positive Attitude and Negative Attitude Sub-dimension scores are higher and significant at the p<.05 significance level in those who do not want to get/have not got the COVID-19 vaccine and stating the reasons "Belief in multiple side effects of the vaccine", "Disbelief in vaccine protection", "Belief in light recovery from the disease", "Importation of the vaccine from another country" and "Disbelief in life-threatening nature of the infection" than those stating "More than one reason."

DISCUSSION

It will make important contributions to the literature, as it is the first study to investigate the Attitudes and related factors of Adult Individuals in Turkey toward Coronavirus-19 Phobia and

COVID-19 Vaccine with a large sample group throughout Turkey and conducted with a regional systematic sampling method.

In our study, coronaphobia levels of adults were found to be moderate (52.28±20.93). The level of coronaphobia was also found moderate in studies involving different populations (Arpaci et. al., 2020a; Atilgan&Aksoy, 2021; Labrague&De los Santos, 2020; Ozer&Ozkan, 2021; Turan et. al., 2021; Yayla&Eskici-Ilgin, 2021). In another study conducted with adults in the literature, low scores were reported for coronaphobia and its sub-dimensions (Arpaci et. al., 2022). It suggests factors related to the time of the study. As in many areas, the pandemic has had negative social and mental health consequences at the international level (Nazari et. al., 2021; Mamun et. al., 2020; Feng et. al., 2020; Tolares et. al., 2020; Rossi et. al., 2020). In this study, on evaluation of the Coronaphobia sub-dimensions, the mean scores of the psychological and social sub-dimensions were found high. In studies conducted with the Turkish sample by Toprak-Celenay et. al., (2020) and Turan et. al., (2021), psychological and social phobia scores were found higher. The difference among studies indicates the requirement for a further investigation of the subject.

Participants for the vaccine had positive attitude scores (3.17±1.36) and a total attitude score above average for the vaccine (3.24±.86). While there are studies indicating similar data (Genis et. al., 2020; Kilic et. al., 2021), there are also studies indicating moderate attitude toward the vaccine (Turan et. al., 2021) and high attitude scores(Campo-Arias&Pedrozo-Pupo, 2022; Genis et. al., 2020; Kilic et. al., 2021; Ozer&Ozkan, 2021). The difference in the study findings is associated with the differences in sample groups such as employees, students, and age groups and the time differences at the time of the study. As a matter of fact, as of May 12, 2022, when the results of the study were discussed, the fact that 62.6% of the population of Turkey and 85.6% of the population over the age of 18 had at least 2 doses of vaccine supports our findings(Ministry of Health, 2022).

Significant correlations were found in this study between the sub-dimensions of Coronavirus-19 Phobia and Positive Attitude toward COVID-19 Vaccine scores(R=.449; R^2=.202; p<.001). At the end of the regression analysis, the Psychological Sub-dimension and the Psycho-somatic Sub-dimension variables seem to increase the Positive Attitude toward the COVID-19 Vaccine and are determined to be significant predictors. Attitude total scores toward the COVID-19 Vaccine indicate significant relationships with the sub-dimensions of Coronavirus-19 Phobia(R=.323;R^2=.104;p<.001). At the end of the regression analysis, the Psycho-somatic Sub-dimension, and Social Sub-dimension variables were found to increase total scores of the attitude toward the COVID-19 Vaccine and are significant predictors(table 2). In this study, the literature was supported by similar results by indicating the increase in vaccine attitude due to coronaphobia (Karlsson et. al., 2020; Kwok et. al., 2020; Ozer&Ozkan, 2021; Turan et. al., 2021).

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It was found in this study that the coronavirus-19 phobia was significantly affected by gender (being male), age (being 51-60 years old), marital status (being widowed), number of children (3 or more), place of residence (living in the province), region of residence(higher in Central Anatolia Region, lower in Eastern Anatolia Region), income level (having a high-income level). Furthermore, the status of being trained on COVID-19 (not trained), the status of having been infected with COVID-19 disease (not having been infected with COVID-19), the status of being trained on COVID-19 vaccine (not trained), the status of having a chronic disease, the status of considering getting the COVID-19 vaccine (considering getting or having got the vaccine), the reason for getting the COVID-19 vaccine (reporting more than one reason) and the reason for not wanting to get the COVID-19 vaccine (reporting more than one reason) were found to be statistically significant (table 3-4). In the studies of Atilgan and Aksoy, the Coronavirus-19 phobia scores of men were found higher (Atilgan&Aksoy, 2021). There are studies reporting a higher death rate in men due to COVID-19 in terms of gender (WHO, Coronavirus Death Rates, 2021; Ustun&Ozciftci, 2021). There are studies reporting that women have higher phobia scores and that the presence of chronic disease is effective on phobia (Arpaci et. al., 2022; Ozer&Ozkan, 2021; Zorlu&Kiskac, 2021). There is a study indicating

that the chronological increase in age increases the level of phobia and obtaining similar results with this study (Atilgan&Aksoy, 2021).

In this study, the factors affecting positive vaccine attitude are as follows: gender (being female), age (61 years and above), number of children (3 and more), region of residence (lower in Central Anatolia Region), income level(lower in the middle-income group); the status of being trained on COVID-19 (trained), the status of having infected with COVID-19 disease (higher in not having infected ones), the status of being trained on COVID-19 vaccine(trained), the presence of chronic disease, the status of considering getting COVID-19 vaccine (having got/considering getting the vaccine), the reason for getting the COVID-19 vaccine(having more than one reason) and the reason for not wanting to get the COVID-19 vaccine(higher in those stating more than one reason than those stating one reason) (table 3-4). In the study conducted by Kilic et. al., (2021), it was found that conditions such as being male, increased life satisfaction, increased perceived health status, fear of being infected with COVID-19, presence of other relatives infected with COVID-19, increased age, and not being a worker or a tradesman affected positive vaccine attitude. COVID-19 phobia, age, considering getting//having positive attitude toward COVID-19 vaccine are among the findings in line with our study(Kilic et. al., 2021). Unlike this study, there are also studies that found the vaccine attitude of men to be significant in terms of gender(Akarsu et. al., 2020; Bell et. al., 2020; Kilic et. al., 2021) and that gender had no effect on vaccine attitude(Pogue et. al., 2020). There are studies that support our study findings by indicating that increased age was one of the factors affecting the vaccine attitude (Thorneloe et. al., 2020; Kilic et. al., 2021). Motoki et. al. (2021) found that perceived knowledge of COVID-19 vaccines was positively correlated with attitudes toward COVID-19. As seen in this study, the absence of training on COVID-19 disease and vaccine increases the level of phobia, and the presence of training increases the positive attitude toward the vaccine. It is thought that as the knowledge level of individuals is increased, the attitude toward the vaccine will increase and thus uncertainties will be minimized, and the level of phobia may decrease (Ozer&Ozkan, 2021).

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CONCLUSION

As a result of the study, moderate coronaphobia and above-average positive attitude, and overall attitude scores toward the vaccine were determined in adults. Psychological Sub-dimension, Psycho-somatic Sub-dimension, and Social Sub-dimension scores were found to be effective on positive COVID-19 vaccine attitude and overall score.

COVID-19 phobia levels of men, those aged 51-60, widowed, having 3 or more children, living in the Central Anatolia region, not having trained on COVID-19 and COVID-19 vaccine, having a chronic disease, not considering getting the COVID-19 vaccine, wanting to be vaccinated for more than one reason, not wanting to be vaccinated for more than one reason were found higher. It is an expected result that the level of phobia has increased due to COVID-19, and it is recommended to plan trainings on COVID-19 disease and vaccine to include individuals, especially men, those aged 51-60, and those with 3 or more children.

It was found that women, those aged 61 years and above, those with 3 or more children, those living in the Central Anatolian Region, those in the middle-income group, those receiving training on COVID-19 disease and COVID-19 vaccine, those not having been infected with the COVID-19 disease, those with chronic diseases, those considering getting the COVID-19 vaccine and those not wanting to get the COVID-19 vaccine for more than one reason had a positive COVID-19 vaccine attitude. In line with the results, it is possible to increase the rate of vaccination by organizing vaccination campaigns containing information about COVID-19, including men, those under the age of 61, those having 1 or 2 children, those living outside the Central Anatolia Region, and those not having received any training on COVID disease and vaccine. It is thought that negative situations such as fear, phobia, and anxiety about the disease will decrease to some extent by eliminating the uncertainties about the vaccine and by increasing the vaccination rates in societies. It is important for

health professionals, governments, and society to cooperate globally to prevent diseases from turning into pandemics, to manage current and future pandemic processes, to protect the health of the society, and to minimize mortality rates (Lai et. al., 2020).

Conflict of İnteresting: The authors report no actual or potential conflicts of interest.

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