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The Relationship between COVID-19 Phobia and Health Cognitions and Psychosocial Factors

COVID-19 Fobisi ile Sağlık Bilişleri ve Psikososyal Faktörlerin İlişkisi

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Abstract

Objective: The study aimed to determine the levels of corona-phobia experienced by individuals in a broad population representative of Turkish society, and the correlation with health cognitions and psychosocial factors.

Material and Method: This descriptive, cross-sectional, and correlational study was conducted with 1620 participants who lived in different regions of Turkey. Data were collected using an information form, the COVID-19 Phobia Scale (C19P-S), and the Health Cognitions Questionnaire.

Results: The mean age of the participants was 34.13±10.90 and 62.8% of them were female. The mean score of COVID-19 phobia score was 51.84±13.53 and health cognition was 60.17±9.61. COVID-19 phobia was significantly related to cognitions of difficulty coping with illness, medical services adequacy, the awfulness of illness and the likelihood of illness. The factors influencing the C19P-S of participants were, being female, having a chronic illness, having too much impact on daily life, difficulty coping with illness, awfulness of illness, and likelihood of illness.

Conclusion: It is recommended to plan interventions to increase public awareness of COVID-19 and to reduce corona-phobia. These interventions should be especially about the negative impact of corona-phobia on people with a chronic illness and women's mental health.

Keywords: COVID-19, phobia, health cognitions, psychosocial, pandemic.

Öz

Amaç: Bu çalışmanın amacı, Türk toplumunu temsil eden geniş bir popülasyonda bireylerin koronafobi düzeylerini ve koronafobinin sağlık bilişleri ile psikososyal faktörler arasındaki ilişkiyi belirlemektir.

Gereç ve Yöntem: Tanımlayıcı, kesitsel ve ilişkisel araştırma, Türkiye'nin farklı bölgelerinde yaşayan 1620 katılımcı ile gerçekleştirilmiştir. Veriler bir bilgi formu, COVID-19 Fobi Ölçeği (C19P-S) ve Sağlık Bilişleri Anketi kullanılarak toplanmıştır.

Bulgular: Katılımcıların yaş ortalaması 34,13±10,90 olup %62,8'i kadındır. COVID-19 fobi puanı 51,84±13,53 ve sağlık bilişleri puan ortalaması 60,17±9,61'dir. COVID-19 fobisi, hastalıkla başa çıkma zorluğu, tıbbi hizmetlerin yeterliliği, hastalığın korkunçluğu ve hastalık olasılığı bilişleri ile anlamlı şekilde ilişkiliydi. Katılımcıların C19P-S'lerini etkileyen faktörler; kadın olmak, kronik hastalığı olmak, günlük yaşamın çok fazla etkilenmesi, hastalıkla baş etmede güçlük, hastalığın korkunçluğu, hastalık olasılığıdır.

Sonuç: Toplumun COVID-19 farkındalığını artırmak ve koronafobi düzeylerini azaltmak için müdahalelerin planlanması önerilmektedir. Bu müdahaleler özellikle koronafobinin kronik hastalığı olan kişiler ve kadınların ruh sağlığı üzerindeki olumsuz etkilerine yönelik olmalıdır.

Anahtar Kelimeler: COVID-19, fobi, sağlık bilişleri, psikososyal, pandemik.

1. Introduction

In March 2020, the World Health Organization (WHO) announced the COVID-19 outbreak to be a pandemic (1). Due to the high contamination rate of COVID-19, millions of confirmed cases (487 million) and numerous deaths (6.1 million) have occurred worldwide (2). In Turkey, the first case of COVID-19 was identified on 11 March 2020 (3). COVID-19 has become a public health problem with a serious effect on life (4,5).

The effects of COVID-19 have been not only medical but also social, professional, political, economic, ethical and moral (6,7). COVID-19 caused health problems in two ways. The first was the immediate physical health problems which it caused, but the second was the mental health problems associated with the outbreak. The highly contagious nature of the virus and its associated consequences, as well as the uncertainties regarding effective treatment or vaccines, have contributed to increased mental health concerns among the general population (8). Studies concluded that particularly in the period when the disease first appeared and the case numbers were increasing, unhappiness, hopelessness, helplessness, fear, anxiety and stress also increased (9-14). These feelings have spread to the whole of society, and the factors causing this fear have begun to take control of people (6). The COVID-19 pandemic has shown directly that people are not emotionally prepared for the effects of this kind of biological disaster but can be vulnerable and helpless (15,16). Making a broad assessment of the level of phobia of COVID-19 experienced by society and the factors affecting this phobia is important in that it will allow more correct and realistic interventions to be carried out as psychological support.

The aim of the study was to determine the levels of corona-phobia experienced by individuals in a broad population representative of Turkish society, and the correlation with health cognitions and psychosocial factors.

2. Materials and Methods

2.1. Procedure and Participants

This study was designed as a cross-sectional study. The population of the study consisted of individuals living in different regions of Turkey. Criteria for inclusion in the study were being aged 18 years and older, being literate, and residing in Turkey. Research data were collected between August and October 2020 using an online questionnaire. We created the questionnaire on Google Form and distributed it using social media.

At the head of the questionnaire form, information was given to the participants on the aim of the research, confidentiality, the voluntary nature of participation and the right to withdraw, and the time to complete the form (15-20 minutes). All participants provided electronic informed consent. If they did not, they were not given the questionnaire. To be sure that the participants met the inclusion criteria, they were asked to approve the demographic characteristics on the first page of the questionnaire, that they were aged 18 years and older, and living in Turkey. Those who did not meet the criteria were not allowed to continue. snowball sampling method was used.

A total of 2588 people from different regions of Turkey were invited to participate in the study. Of these 2588 people, 1812 decided to participate and gave responses, with a resulting response rate of 70%. In forming the data set, duplicate responses were eliminated (N=1620).

2.2. Data Collection

We developed "The Information Form", consisting of 18 questions to determine the sociodemographic characteristics, and some issues related to COVID-19 and created by reviewing the literature.

2.2.1. The COVID-19 Phobia Scale (C19P-S)

The C19P-S is a self-report instrument to measure the levels of coronavirus phobia among individuals of a wide age range. The scale is based on the "Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)" specific phobia criteria. The C19P-S has 20 items which are rated on a five-point Likert-format from "1= strongly disagree" to "5= strongly agree". The scale includes social factors, psychological factors, economic factors and psychosomatic factors. The social factor gauges social phobia due to COVID-19; the psychological factor is related to excessive anxiety and fear due to infection with coronavirus; the economic factor is related to hoarding behaviours due to the excessive fear of running out of supplies and the psycho-somatic factor is related to the physical symptoms. Total scale scores range between 20 and 100. The height of the total and sub-scales scores indicate the greater phobia. It can be thought that 20-46 points represent low phobia, 47-73 points represent moderate phobia, and 74-100 points represent high phobia. The subscale reliabilities ranged from 0.851 to 0.903 and Cronbach alpha for the overall scale was 0.926. Cronbach alpha for the current study was 0.930 (17).

2.2.2. Health Cognitions Questionnaire (HCQ)

This scale was developed by Hadjistavropoulos et al. (2012) and assesses the non-functional beliefs concerning health connected to the severity of the health anxiety experienced by people (18). The scale consists of four categories: difficulty in coping with illness, medical services inadequacy, the likelihood of illness, and the awfulness of illness. The scale items are scored from 1 to 5 (1 = I definitely disagree, 5 = I definitely agree). A high score on the scale reflects the non-functional beliefs of a person concerning health (19). It can be thought that 20-46 points represent a low degree, 47-73 points represent a moderate degree, and 74-100 points represent a high degree. The Cronbach's alpha of the scale in this study was found to be 0.846. In the study in which the scale was developed (18), the internal consistency coefficients of the factors in a group without a physical diagnosis were found to be 0.72-0.90, and in a group with a physical diagnosis they were 0.75-0.91.

2.3. Statistical Analysis

Downloaded data were cleaned and uploaded onto SPSS version 21. The significance level was accepted as 0.05. Descriptive statistics of frequencies, percentages, means, min-max, and standard deviations were calculated for socio-demographic and some issues related to COVID-19, health cognition and COVID-19 phobia. The differences in C19P-S, according to the general characteristics, were

analyzed using a paired samples t-test, ANOVA, LSD post-hoc test. The associations between difficulty coping with illness, medical services inadequacy, the awfulness of illness, and the likelihood of illness, and C-19P-S were analyzed using the Pearson correlation coefficient. The impact on C19P-S was analyzed using multiple regression analysis. Cronbach's alpha was used to test the consistency of the survey results.

2.4. Ethical Considerations

All procedures performed in studies involving human participants were by the ethical standards and with the Helsinki Declaration and its later amendments or comparable ethical standards. Manisa Celal Bayar University's Ethics Committee approval (29/07/2020-20.478.486/482) and written permissions from the Ministry of Health were obtained to conduct the study. Informed consent was obtained from all participants.

3. Results

The mean age of the participants (n=1620) was 34.13±10.90 and 62.8% of them were female. 53.1% were bachelor's degree, 57.8% were public employees, 53.6% were married, 46.4% had a child, 49.2% had income equal to expenses, 84.1% had no chronic illness, 54.7% reported that they had sufficient knowledge of COVID-19, 88.0% had not been tested for COVID-19, 89.8% had suspected COVID-19, 27.4% reported that were people with suspicion around them, 30.8% had family members with a high risk of getting COVID-19 in their family and 53.1% were more affected by COVID-19 (Table 1).

Table 1. Differences in Covid-19-Phobia According to Socio-Demographic and Some Issues Related to Covid-19 (n=1620)

Characteristics	N (%)	Mean±SD[a]	t or F (p) Post hoc
Age (years)			
16-25[b]	407 (25.1)	2.68±0.71	3.46 (0.016)
26-35[c]	566 (34.9)	2.55±0.69	c, d, e< b
36-45[d]	390 (24.1)	2.58±0.65	
46 and more[e]	257 (15.9)	2.59±0.68	
Mean± SD		34.13±10.90	
Gender			
Female	1017 (62.8)	2.70±0.67	8.41 (<0.001)
Male	603 (37.2)	2.41±0.63	
Academic level			
Primary/Secondary school	31 (1.9)	2.74±0.76	3.57 (0.014)
High school	127 (7.8)	2.62±0.57	e<d
Bachelor	860 (53.1)	2.63±0.70	
Master	602 (37.2)	2.52±0.65	
Working status			
Student[b]	288 (17.8)	2.68±0.73	5.45(0.001)
Private Sector[c]	240 (14.8)	2.60±0.67	d<b, e
Public Employee[d]	937 (57.8)	2.54±0.66	
Retired /Unemployed[e]	155 (9.6)	2.72±0.60	
Marital Status			
Married	868 (53.6)[b]	2.55±0.65	3.66 (0.026)
Single	683 (42.2)[c]	2.64±0.70	b<d
Divorced /Widow	69 (4.3)[d]	2.60±0.61	

Table 1 (Continued). Differences in Covid-19-Phobia According to Socio-Demographic and Some Issues Related to Covid-19 (n=1620)

Characteristics	N (%)	Mean±SD[a]	t or F (p) Post hoc
Having Child			
Yes	752 (46.4)	2.57±0.65	-1.12 (0.262)
No	868 (53.6)	2.61±0.69	
Income			
More than income[b]	418 (25.8)	2.46±0.66	13.53 (<0.001)
Equalto expenses[c]	797 (49.2)	2.60±0.64	b<c<d
Less than income[d]	405 (25.0)	2.70±0.73	
Chronic illness			
Yes	258 (15.9)	2.72±0.73	3.22 (0.001)
No	1362 (84.1)	2.57±0.66	
Knowledge level about Covid-19			
Little[b]	107 (6.6)	2.67±0.74	3.51 (0.015)
Some[c]	510 (31.5)	2.61±0.63	c, d<e
Enough[d]	886 (54.7)	2.55±0.67	
Toomuch[e]	117 (7.2)	2.75±0.83	
Covid-19 Test			
Yes	195 (12.0)	2.51±0.67	-1.72/0.085
No	1425 (88.0)	2.60±0.68	
COVID-19 suspicion			
Yes	165 (10.2)	2.82±0.73	4.34 (<0.001)
No	1455 (89.8)	2.57±0.67	
COVID-19 positive in the vicinity			
Yes	444 (27.4)	2.68±0.71	2.99 (0.003)
No	1176 (72.6)	2.56±0.66	
Risky people for COVID-19 in the family			
Yes	1121 (69.2)	2.65±0.68	5.384(<0.001)
No	499 (30.8)	2.46±0.66	
The impact of COVID-19 on daily life			
Little/Some[b]	227 (14.0)	2.14±0.55	129.80 (<0.001)
Much[c]	860 (53.1)	2.52±0.57	b<c<d
Too much[d]	533 (32.9)	2.90±0.75	

C19P-S differed significantly according to sociodemographics, and some issues related to COVID-19. There is a difference in the COVID-19 phobia scores according to several characteristics such as age and gender, academic level, working status, marital status, income, having chronic illness, knowledge level about COVID-19, suspicion of COVID-19, having risky people for COVID-19 in family and impact of COVID-19 on daily life variables of the participants. However, there was no difference in C-19P-S according to having a child and COVID-19 test (Table 1).

The mean score of health cognition is 3.01±0.48. Among the subscales of health cognition, difficulty coping with illness, medical services inadequacy, the awfulness of illness, and the likelihood of illness scores were 2.70, 3.10, 3.61, and 2.94, respectively. The mean COVID-19 phobia score was 2.59±0.68. Among the COVID-19 phobia psychological, psychosomatic, social, and economic scores were 3.23, 1.99, 2.83, and 2.09 respectively (Table 2).

Table 2. Scores of Scale and Subscales of Health Cognition and COVID-19 Phobia (n=1620)

Scale	Number of items	Possible score range	Mean±SD[a]	Mean ± SD[a]/ number of items
Difficulty coping with illness	8	1-5	21.58 ±5.11	2.70±0.64
Medical services inadequacy	4	1-5	12.38 ±2.94	3.10±0.74
Awfulness of illness	4	1-5	14.45 ±2.87	3.61±0.72
Likelihood of illness	4	1-5	11.76 ±2.89	2.94±0.72
HCQ	20	1-5	60.17 ±9.61	3.01±0.48
Psychological	6	1-5	19.37 ±5.26	3.23±0.88
Psyho-somatic	5	1-5	9.95 ±3.94	1.99±0.70
Social	5	1-5	14.15 ±4.27	2.83±0.85
Economic	4	1-5	8.36 ±2.75	2.09±0.69
C19P-S	20	1-5	51.84 ±13.53	2.59±0.68

HCQ: Health Cognitions Questionnaire; C19P-S:COVID-19 Phobia Scale.

COVID-19 phobia was significantly related to cognitions of difficulty coping with illness (r=0.37, p<0.001), medical services in adequacy (r=0.11, p<0.001), awfulness of illness (r=0.42, p<0.001), likelihood of illness (r=0.30, p<0.001) (Table 3).

Table 3. Correlations Among Subscales of Health Cognition and COVID-19 Phobia

Variables	Difficulty Coping with Illness	Medical Services Inadequacy	Awfulness of illness	Likelihood of Illness	C-19P-S
Difficulty coping with illness	1				
Medical services in adequacy	0.23	1			
Awfulness so of illness	0.44	0.18	1		
Likelihood of illness	0.33	0.14		1	
C-19P-S	0.37	0.11	0.42	0.30	1

p<0.001; C19P-S: COVID-19 Phobia Scale

Multiple regression was performed to identify the factors that affect COVID-19 phobia. Normality, independence of errors, and multicollinearity of data were all assumptions of multiple regression analysis were met. The regression analysis results revealed that the model was significant (F=99.26, p<0.001) and that it could predict 29.8% of C-19P-S. The factors influencing the C-19P-S of participants in this study were, gender being female (β=0.15, p<0.001), having chronic illness (β=0.06, p<0.001), having too much impact on daily life (β=0.20, p<0.001), difficulty coping with illness (β=0.19, p<0.001), awfulness of illness (β=0.25, p<0.001), likelihood of illness (β=0.09, p<0.001). In particular, the thought about awfulness of illness was the biggest factor influencing the COVID-19 phobia (Table 4).

4. Discussion

The participants were found to have a moderate level of mean C19P-S total score. In terms of sub-dimensions, it was found that mean psychological and social sub-dimension scores were high, while mean economic and psychosomatic sub-dimension scores were low. Parallel results were obtained in similar studies conducted in Turkey (17,20). In a study by Baloglu et al. (2021), the mean C19P-S score was higher than our study; however, like our study, it was found that both women and men showed the highest phobic reactions on the psychological subscale and the lowest on the psycho-somatic subscale (21). In the study conducted by Arpaci et al. (2020) in the USA (22), mean C19P-S total and sub-dimension scores were found to be low. Different results in studies conducted may be due to different populations and changing mortality and morbidity of COVID-19.

Gender is a significant variable that shapes how individuals behave. So, it's important to investigating gender as a variable on corona-phobia (23). The COVID-19 phobia scale scores of female participants were higher than those of males. In similar studies in the literature, the rate of COVID-19 phobia is higher in women (8,21,24-26). Corona-phobia may be evaluated on the DSM diagnosis system as a specific phobia. Specific phobias are seen more often in

Table 4. Factors Associated with COVID-19 Phobia (n=1620)

Variable	Non-Standard Coefficients		Standard Coefficients	t	p	Adjusted R²	F(p)
	B	S.E[a]	β				
Constant	0.79	0.10		8.29	<0.001	29.8	99.26 <0.001
Gender (female)[b]	0.21	0.03	0.15	7.17	<0.001		
Chronic illness(yes)[b]	0.12	0.04	0.06	2.98	0.003		
Impact on daily life (too much)[b]	0.29	0.03	0.20	9.26	<0.001		
Difficulty coping with illness	0.21	0.03	0.19	8.11	<0.001		
Medical services inadequacy	-0.03	0.02	0.04	-1.60	0.110		
Awfulness of illness	0.24	0.02	0.25	10.25	<0.001		
Likelihood of illness	0.08	0.02	0.09	8.11	<0.001		

[a]Standard error, [b]Dummy variables

women (3.8%) than in men (1.4%). Studies on gender also confirmed that women appear to have higher prevalence rates of specific phobia than men (27,28).

One of the factors relating to C19P-S in our study was having a chronic illness. People with chronic illnesses have lower levels of immunity, so COVID-19 has a more effect on them. These patients are aware of the higher risk, and they experience more fear (29). Karaaslan et al. (2021) found that corona-phobia was higher in those with a chronic illness (30). Different from our study, Bilgic et al. (2021) found that having a chronic illness did not affect C-19P-S (31). It is thought that the news and media emphasizing that the risk of morbidity and mortality are higher in those with chronic illnesses may increase C19P-S scores.

With the pandemic, there was an increase in using facemasks, washing hands more often, and avoiding public transit and public places (32). These are the factors that change daily life. The change in daily life was also found as a factor in increasing corona-phobia in our study. Similarly, Petzold et al. (2020) stated in a study that 17.1% of participants had exaggerated worries about COVID-19 and that in 25.1%, their worries restricted their daily lives. Women showed higher rates of anxiety on almost every item. The strongest differences compared to men are to be found in general (Mean= 4.23 vs. Mean=3.81) and social results (Mean=4.06 vs. Mean= 3.61) experience anxiety because of COVID-19 (33).

We found in our study that difficulty coping with illness affected corona-phobia. A large effect of the illness on daily life makes a person's adaptation to the illness and thus their coping with the illness more difficult (34). Lindinger-Sternart et al. (2021) examined the impact of coping with COVID-19 phobia among individuals from different nations (a cluster of European countries, India, Indonesia, Pakistan, and the United States of America). The result of this study is that specific coping styles significantly correlated with the level of corona-phobia. COVID-19 has been the cause of numerous restrictions and obstructions in a social, professional, and economic sense (35). In this situation when it is difficult to adapt to the rapid changes relating to health and illness, a rise in COVID-19 phobia is a possible result. The fact that everyone is at risk and the number of cases is rapidly increasing, causing worldwide trauma, explains the relationship between the likelihood of illness and corona-phobia as seen in the results of the study. Also, people can access correct and incorrect information about the disease and the risk of contracting it, so this can also cause exaggerated judgments about the possibility of illness, and it may increase corona-phobia.

It was found in the study that the most significant factor affecting corona-phobia was the awfulness of illness. This can be explained by the high death rates and the global crisis because of the pandemic. On the other hand, it is thought that the lack of vaccine and specific treatment for the disease at the time of the study increased the fear of the disease and this triggered corona-phobia. Asmundson and Taylor (2020) drew attention that a lack of faith in the healthcare system is likely to fuel fears about being ill. In our study, it was found that the thought of medical service inadequacy affects corona-phobia (32).

5. Conclusion and Recommendations

The COVID-19 pandemic has forced many individuals into quarantine or isolation, impacting mental health and well-being at personal and population-levels. Understanding the factors that cause or intensify corona-phobia may help when planning interventions such as improving people's quality of life, their social functionality, and their mental health. The interventions such as telehealth services and internet-based interventions, should be especially about the negative impact of corona-phobia on people with a chronic illness and women's mental health.

6. Contribution to the Field

Making a broad assessment of the level of phobia of COVID-19 experienced by society and the factors affecting this phobia is important in that it will allow more correct and realistic interventions to be carried out as psychological support.

Limitations of the study

The limitations of this study are as follows; The number of participants in the research varied from region to region. For this reason, it was not possible to make a comparison between regions; Completing the questionnaire was voluntary, and the number of those who did not continue for any reason and the number of those who do not use social media or communication apps or who do not have access to the internet is unknown; The results of the study cannot be generalized to Turkey. COVID-19

Ethical considerations

All procedures performed in studies involving human participants were by the ethical standards and with the Helsinki Declaration and its later amendments or comparable ethical standards. Manisa Celal Bayar University's Ethics Committee approval (29/07/2020-20.478.486/482) and written permissions from the Ministry of Health were obtained to conduct the study. Informed consent was obtained from all participants.

Conflict of Interest

There is no conflict of interest regarding any person and/or institution.

Authorship Contribution

Concept: ND; **Design:** ND, CG; **Supervision:** ND; **Funding:** ND, CG, SÜ, GÜ; **Materials:** ND, CG, SÜ, GÜ; **Data Collection/Processing:** ND, CG, SÜ, GÜ; **Analysis/Interpretation:** CG; **Literature Review:** ND, SÜ; **Manuscript Writing:** ND, CG, SÜ, GÜ; **Critical Review:** ND.

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