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The Effect of Fear of COVID-19 on Demonstrating Personal Health Behavior and Prosocial Behavior

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Abstract

The main purpose of this study is to determine the effect of fear of COVID-19 on showing personal health behavior and pro-social behavior during the period when new variations of the COVID-19 virus are seen in Turkey. A population-based cross-sectional research design was used in the study. The population of the study consisted of patients over the age of 18 who applied to a family medicine unit operating in Düzce city center and their relatives. Data were collected from 485 people using face-to-face survey technique. SPSS 23 and AMOS 26 package programs were used in the analysis of the data. The findings of the study revealed that the majority of the participants had a relatively high level of fear of COVID-19, their personal health behavior and their pro-social behavior. In addition, the empirical result of the study showed that the level of fear of COVID-19 significantly affects the level of personal health behavior and pro-social behavior. Thus, the increased level of COVID-19 fear leads to high personal health behavior and pro-social behavior. It was found that female participants had higher COVID-19 fear levels and exhibited more pro-social behavior than male participants; young individuals show more personal health behaviors and pro-social behavior; It has been determined that public employees have higher COVID-19 fear levels, show more personal health behaviors, and engage in pro-social behavior. In addition, it has been found that the majority of people who are afraid of the COVID-19 virus think that the virus is man-made.

Keywords: "COVID-19, fear, personal health behavior, prosocial behavior."

1. Introduction

Due to the fact that the COVID-19 disease is contagious, it is seen that it has turned into a global epidemic that threatens the health of societies. Governments around the world have played an important role in both mitigating the economic impact of the crisis and in preventing and controlling the disease to tackle the growing public health crisis caused by the COVID-19 pandemic. Many countries have implemented some sensible measures and regulations (e.g. social distancing, masks, hand washing, personal hygiene, and social isolation, mandatory quarantine) to prevent disease transmission and stabilize the economy. (World Health Organization, 2020). In addition, it has been stated that COVID-19, which was fatal in the elderly patient groups at the beginning of the pandemic, has recently led to deaths in younger age groups, and the disease has started to pose a serious risk factor for younger age groups (Çağatay et al., 2022). At the same time, when Turkey's health statistics are examined in general, when COVID-19 data (death rates, bed occupancy rates, etc.) are compared with other countries, it is stated that Turkey is successful in the fight against COVID-19 (Çağatay et al., 2021).

When the source of the danger is clear, the emotion experienced is called fear. The most important reason why pandemics create great fear on society; the infection is listed as (i) being contagious, (ii) posing an imminent threat, (iii) being invisible, (iv) increasing its area of influence (Pappas et al., 2009). Psychological reactions that occur during the pandemic can range from extreme fear to indifference to fatalism (Taylor, 2019). Fear emerges as a strong emotion that affects individuals' physical reactions, cognitive skills and moods. Increasing fear in individuals causes an increase in intolerance to uncertainty and negatively affects positivity levels. (Harper et al., 2020; Taylor et al., 2020).

Fear; It is one of the important psychological aspects of the COVID-19 pandemic (Lu et al., 2020). The uncertainty caused by the COVID-19 disease causes fear in people (Lum and Tambyah, 2020); It has been observed that this fear triggers feelings of helplessness, illness and death in individuals, leading to negative emotional states such as intolerance to uncertainty, depression, anxiety and stress (Bakioğlu et al., 2020). In addition, the uncertainty of the COVID-19 epidemic, health anxiety, constant

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exposure to true or false information on social media, and the fact that their loved ones are at risk have been identified as the sources of fear experienced by individuals (Mertens et al., 2020).

Fear and anxiety symptoms; It has been reported that people tend to respond positively to support and reassurance, accurate and timely information about the quarantine and isolation situation (Huremović, 2019). At the same time, the fear caused by the nature of the epidemic can also affect people's relationships in their daily lives. For example, more than half of quarantined individuals who were suspected of having come into contact with someone infected with the SARS virus stated that they tried to stay away from people who sneezed or coughed even weeks after the quarantine, 26% stated that they stayed away from crowded and closed areas, and 21% stated that they avoided all public areas. (Cava et al., 2005; Reynolds et al., 2008). The reactions of individuals coming out of quarantine or isolation by their environment, that is, the exposure of these individuals to stigmatization, are also considered as risk factors for psychological disorders (Bai et al., 2004).

At the same time, perceived and possessed social support is also considered as a protective factor during the epidemic disease process. In a longitudinal study of hospitalized individuals affected by the SARS epidemic, it was observed that psychological adjustment after recovery occurs as a result of increased social support, both perceived and possessed (Bonanno et al., 2008). In a study on the psychological effects of COVID-19, having good relationships with people living together emerged as a protective factor (Odriozola-González et al., 2020). Based on the above-mentioned scientific theoretical evidence and hypotheses, this study aimed to determine the effect of fear of COVID-19 on personal health behavior and pro-social behavior. It is predicted that fear of COVID-19 may have a statistically significant effect on displaying personal health behaviors and prosocial behavior. Therefore, the hypotheses we tested are:

"H1: Fear of COVID-19 has a statistically significant effect on personal health behavior."

"H2: Fear of COVID-19 has a statistically significant effect on prosocial behavior."

2. Material and Methods

2.1. Study Design, Procedures and Participants

In this study, a population-based cross-sectional research design was used. This cross-sectional study was conducted on patients over the age of 18 and their relatives who applied to a family medicine unit operating in the city center of Düzce between January and February 2022, using the face-to-face survey technique. The purpose of the study was explained to all participants beforehand. Basic instructions were given for completing the questionnaire and participants were informed that all their data would be recorded anonymously. It was stated that participation in the survey was voluntary. Data collected from 485 people in total were analyzed. 46% of the participants were male and 54% were female.

2.2. Instruments

The questionnaire consisted of five parts in total. The first part included information about the main purpose of the study, that the participation was voluntary and that personal information would be kept confidential. In the second part, statements revealing the socio-demographic characteristics of the participants are included. The third, fourth and fifth sections consisted of the following two measurement tools used in the research.

2.3. Fear of COVID-19

The COVID-19 fear level of the participants was determined using the "COVID-19 Fear Scale" (Ahorsu et al., 2020). The questionnaire consisted of 7 items measuring a general COVID-19 fear level. The questionnaire, which was prepared in Turkish, was evaluated using a five-point Likert scale. High scores indicated a high COVID-19 fear level (Cronbach's alpha = 0.944).

2.4. Personal Health Behavior

The personal health behavior of the participants was determined using the "personal health behavior scale" (Han et al., 2021). The questionnaire consisted of 3 items measuring the level of displaying a general personal health behavior. The questionnaire, which was prepared in Turkish, was evaluated using a five-point Likert scale. High scores indicated the level of showing positive personal health behavior (Cronbach's alpha = 0.877).

2.5. Prosocial Behavior

The prosocial behavior of the participants was determined using the "pro-social behavior scale" (Han et al., 2021). The questionnaire consisted of 4 items measuring the level of engaging in a general pro-social behavior. The questionnaire, which was prepared in Turkish, was evaluated using a five-point Likert scale. High scores indicated the level of positive prosocial behavior (Cronbach's alpha = 0.943).

2.6. Statistical Analysis

All statistical analyzes were performed using IBM SPSS 23 and AMOS package programs. First of all, descriptive statistics were made to reveal the demographic characteristics of the participants and the scores of the tested constructs (COVID-19 fear level, personal health behavior and pro-social behavior). Finally, structural equation modeling (SEM) was conducted using the maximum likelihood estimation method to examine the model that included the level of fear of COVID-19 in displaying personal health behaviors and engaging in pro-social behavior. That is, it was assumed that the level of fear of COVID-19 had a statistically significant effect on displaying personal health behaviors and engaging in pro-social behavior (see Figure 1 for the proposed model).

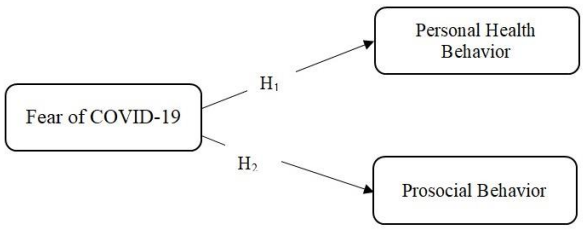

Figure 1. Theoretical model

3. Results

3.1. Demographic Findings and Descriptive Statistics

Table 1 shows the demographic characteristics of the participants and t test and ANOVA test regarding fear of COVID-19, personal health behavior and prosocial behavior.

Table 1. Sociodemographic characteristics of participants

				Fear of COVID-19		Personal Health Behavior		Prosocial Behavior	
Variables	**n**	**%**	**Mean**	**t Test/ Anova (t/F)**	**p-value (2tailed)**	**T Test/ Anova (t/F)**	**p-value (2tailed)**	**t Test/ Anova (t/F)**	**p-value (2tailed)**
Gender				-2,923[a]	**0.004**	1,541[a]	0,124	2,084[a]	**0,038**
male	223	46,0	1,682						
female	262	54,0							
Age				2,262[b]	0,062	4,234 [b]	**0,002**	5,342[b]	**<0,001**
18–25 years	154	31,8	2,285						
26-35 years	151	31,1							
36-45 years	65	13,4							
46-55 years	52	10,7							
>55	63	13,0							
Educational attainment				1,783[b]	0,150	,668[b]	0,572	1,633[b]	0,181
primary/secondary school	68	14,0	3,568						
high school	123	25,4							
university	249	51,3							
graduate	45	9,3							

Table 1. Sociodemographic characteristics of participants (Continuation)

				Fear of COVID-19		Personal Health Behavior		Prosocial Behavior	
Variables	**n**	**%**	**Mean**	**t Test/ Anova (t/F)**	**p-value (2tailed)**	**T Test/ Anova (t/F)**	**p-value (2tailed)**	**t Test/ Anova (t/F)**	**p-value (2tailed)**
Jobs									
employee	32	6,6							
officer	126	26,0							
retired	32	6,6							
housewife	68	14,0	1,581	2,601[b]	**0,012**	3,249[b]	**0,002**	4,244[b]	**<0,001**
self-employment	27	5,6							
student	117	24,1							
unemployed	36	7,4							
private sector employee	47	9,7							
Origin of COVID-19									
man-made	328	67,6	1,112	20,829[a]	**<0,001**	-4,866[a]	**<0,001**	-5,159[a]	**<0,001**
natural	157	32,4							

[a] Independent sample t-test [b] ANOVA test

3.2. The Model Fit Measures

Model fit was tested with different model fit indicators given in Table 2.

Table 2. Model fit measures

Measure	Estimate	Threshold	Interpretation
CMIN/DF	2.833	Between 1 and 5	good fit
CFI	0.978	≥ 0.90	acceptable value
GFI	0.940	≥ 0.85	acceptable value
NFI	0.967	≥ 0.90	acceptable value
IFI	0.979	≥ 0.90	acceptable value
TLI	0.973	≥ 0.90	acceptable value
RMR	0.045	< 0,08	acceptable value
RMSEA	0.062	< 0.08	acceptable value

3.3. The Results of The Measurement Model

Figure 1 shows the path analysis results and model fit for the variables of fear of COVID-19, personal health behavior and prosocial behavior.

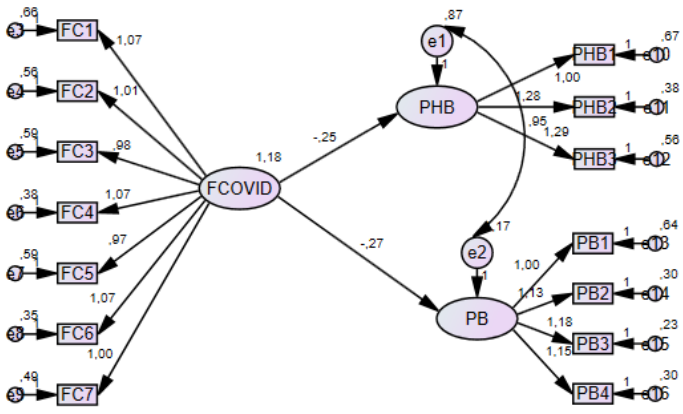

Figure 2. The results of the full model

The results for measuring the reliability and validity of the measurement model provide various measures of the measurement model, as shown in Table 3.

Table 3. The items' estimate and the constructs' Cronbach's α, AVEs and C.R.s.

Constructs	Items	Estimate	Cronbach's α	Mean (±SD)	AVE	CR
Fear of COVID-19 (FCOVID)	FCOVID7	,840	0.944	3,2094 (±1,14802)	0,706	0,943
	FCOVID6	,892				
	FCOVID5	,808				
	FCOVID4	,884				
	FCOVID3	,810				
	FCOVID2	,826				
	FCOVID1	,819				
Personal Health Behavior (PHB)	PHB1	,764	0.877	3,0351 (±1,23442)	0,707	0,878
	PHB2	,896				
	PHB3	,858				
Prosocial Behavior (PB)	PB1	,813	0.943	3,0727 (±1,28535)	0,808	0,944
	PB2	,919				
	PB3	,940				
	PB4	,920				

The fit values examined show that the data fit the model well. Table 4 shows the results of the structural model.

Table 4. The result of the structural model

Hypothesis	Paths	Estimate	S.E.	C.R.	P	Result
Effect of Fear of COVID-19 on Personal Health Behavior						
H_1	PHB <--- FCOVID	,248	,044	5,608	***	H_1 supported
Effect of Fear of COVID-19 on Prosocial Behavior						
H_2	PB <---FCOVID	,265	,049	5,412	***	H_2 supported

As a result, it was determined that fear of COVID-19 significantly and positively affected personal health behavior and prosocial behavior. Thus, H_1 and H_2 hypotheses are statistically supported.

4. Discussion

The emergence of COVID-19 has caused many changes in everyone's life, children have become obligated to distance education and adults to run their business from their homes. On the one hand, the unknown about the disease, on the other hand, the anxiety and fears have caused people to need more information about the epidemic and to show more personal protective health behaviors and pro-social behavior in order to be protected from the epidemic.

The findings of the study revealed that the majority of the participants had a relatively high level of fear of COVID-19, their personal health behavior and their pro-social behavior. In addition, the empirical result of the study showed that the level of fear of COVID-19 significantly affects the level of personal health behavior and pro-social behavior. Thus, the increased level of COVID-19 fear leads to high personal health behavior and pro-social behavior. In addition, female participants have higher COVID-19 fear levels and exhibit more pro-social behavior than male participants; young individuals show more personal health behaviors and pro-social behavior; It has been determined that public employees have higher COVID-19 fear levels, show more personal health behaviors, and engage in pro-social behavior. In addition, it has been found that the majority of people who are afraid of the COVID-19 virus think that the virus is man-made.

In similar studies in the literature; It was found that the level of fear of coronavirus of female participants was higher than the level of fear of coronavirus of male participants (Gencer, 2020). It has been stated that COVID-19 is a conspiracy theory, with male participants more than female participants (Aydın et al., 2021). In a similar study, it was determined that there was a statistically significantly higher fear of COVID-19 in women, those with fear of losing their loved ones, those with a change in their confidence in the health system after the COVID-19 epidemic, and those with chronic diseases (Yılmaz and Baskıcı, 2022). In the study on the evaluation of COVID-19 perceptions and attitudes of healthcare professionals; stated that they were concerned about the transmission of the virus and its transmission to the people around them, and that they did not need psychological support, although they were worried (Eriş & Ayhan, 2020).

During the COVID-19 period, significant increases were observed in the habits of smoking and alcohol consumption, which are among the negative personal health behaviors of individuals (BourionBédès et al., 2020; Chodkiewicz et al., 2020). It has been reported that a group with age ranges ranging from 14.6 to 42.1 showed a significant increase in alcohol and cigarette consumption compared to the pre-epidemic period (Vanderbruggen et al., 2020). In a study conducted on French students, it was revealed that there was a significant increase in cigarette consumption during the COVID-19 period (Bourion-Bédès et al., 2020). In addition, students with a higher fear of COVID-19 were also found to have a higher risk of smoking and consuming alcohol (Nguyen et al., 2020). The COVID-19 pandemic has also led to significant changes in the regular diet and food purchase habits of university students. During this period, staying at home significantly increased the level of food consumption (Yılmaz et al., 2020). High stress caused by the epidemic limited physical activity and negatively affected the quality and duration of sleep, which is one of the personal health behaviors (Al-Musharaf, 2020). Approximately one third of the students reported that spending time in front of the screen during the epidemic had negative effects on their mental health (Akulwar-Tajane et al., 2020).

When we look at the symptoms of those who are directly or indirectly affected by the epidemic, fear, feeling helpless due to social isolation, feeling stressed, feeling lonely and depression are prominent (International Federation of Red Cross and Red Crescent Societies Guide, 2020). The World Health Organization also stated that people may have fear, anxiety, stress and agitated mood due to social distance and isolation, and individuals may show avoidance behaviors (World Health Organization, 2020). In a systematic review study, it was shown that social isolation and quarantine practices resulting from physical restrictions negatively affect both mental and physical health (Leigh-Hunt et al., 2017). Polizzi et al. (2020) compiled how to respond to major crises and disasters experienced in previous years and stated that previously used coping strategies can be used in situations such as mandatory isolation, social distance, fear of contracting a deadly disease, and hopelessness experienced during the COVID-19 pandemic process. In another study, various protective factors such as social support, self-efficacy, and internal locus of control were determined in order to prevent situations such as fear and stress that health workers may encounter during the pandemic process (Conversano et al., 2020).

According to the results of the study, increased risk perception increases the protective behaviors of people. This information is compatible with the literature (Ibuka et al., 2010; Xu & Peng, 2015). It is known that risk perception is determined by evaluating the positive and negative possible outcomes in the outside world, and if the risk perception is high, people engage in health-protective behaviors that will increase positive outcomes and reduce negative outcomes (van der Plight, 1996). Therefore, it can be said that the high risk perception increases the need for self-protection and motivates the application of protective behaviors (Buçakcı et al., 2021).

5. Conclusion

Understanding and managing human behavior in the epidemic environment has a decisive role in achieving the goal of medical measures. In this context, understanding the factors that affect people's behavior to reduce infection, transmission and disease severity is important in terms of managing the pandemic. This study suggests that an understanding of the barriers is essential in order to develop pro-social behavior and behavioral interventions that anticipate people's possible response to the epidemic and attempt to contain the devastating impact of the pandemic. In addition, despite all the warnings and notifications made by health authorities all over the world in a global epidemic, it is remarkable that the numbers reach these dimensions and the failure of people to manage their preventive health behaviors and show pro-social behaviors.

Since the COVID-19 process is a disease process that spreads rapidly globally and requires urgency, it has revealed the necessity of states to work seriously on preventive health behaviors and pro-social behaviors in the future. Therefore, it is thought that future studies in the field should be reconsidered by health authorities. In this context, conceptual frameworks should be drawn that will facilitate the psychological causes of individual behavior in epidemics and their inclusion in policies and practices. In addition, it is predicted that the COVID-19 pandemic and possible future outbreaks can only be managed if their risks are handled holistically with the right time and methods. Furthermore, it is recommended that the spread of the disease, its prevention and increasing the effectiveness of treatment and rehabilitation processes can only be possible if they are handled with a holistic approach. For this reason, systematic and continuous new studies are needed to evaluate and prevent all possible risks related to the disease.

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