Research Article

EXAMINATION OF COVID-19 FEAR IN TERMS OF ITS DEFINING CHARACTERISTICS

Sevim ÇİMKE*[1] *Dilek YILDIRIM GÜRKAN[2]* *Derya ESENKAYA[3]*

[1] Department of Pediatric Health and Illnesses Nursing, Yozgat Bozok University, Yozgat, Turkey
[2] Public Health Nursing,Yozgat Bozok University, Yozgat, Turkey
[3] Surgery Nursing, Yozgat Bozok University,Yozgat, TURKEY
* Corresponding author; dilek.yildirim@yobu.edu.tr

Abstract: *The study aims to determine the fear of coronavirus and its affecting factors. It was conducted as a cross-sectional study. Data on participants were collected using an online questionnaire spread throughout social media, e-mail, and WhatsApp groups. Socio-demographic questionnaire form, COVID-19 Fear Scale, and Visual Analogue Scale (VAS) were used to collect data. Number, percentage, mean, t-test, One-Way ANOVA, and Pearson correlation analysis were used to evaluate the research data. The research was completed with 727 people. A statistically significant relation was found between the COVID-19 fear with age, gender, marital status, having children, having a chronic disease, working status and being health personnel, watching coronavirus news, and always talking about coronavirus at-home settings. Accordingly, it is recommended to determine the fear of coronavirus in society, to identify high-risk individuals by performing community screenings, and to provide psychological support. It is very important to diversify and implement protective intervention programs to reduce some of the psychological consequences of fear and fear.*

Keywords*: COVID-19, Fear, Pandemic*

1. Introduction

COVID-19, which was declared as a pandemic by the WHO on March 11, caused fear all over the world. Although measures have been taken to prevent the spread of the disease, the number of cases has increased day by day and the disease has spread rapidly all over the world [1]. While the whole world is trying to stop the physiological effects of COVID-19, the psychological effects of the disease have started to reach quite terrible dimensions. As well as threatening the physical health and lives of people, the COVID-19 outbreak is expected to trigger psychological problems such as anxiety, depression, panic attacks, and post-traumatic stress disorder, obsessive-compulsive disorder by increasing the stress and fear levels of people [2-4]. The news focused on the number of deaths in the media and the uncertainty about the course of the epidemic increases the fear and stress that people experience [2]. Cases of people who could not handle this pandemic course anymore and committed suicide were also recorded [5].

In infectious disease outbreaks, many factors such as individuals considering themselves as a risk for their close surroundings, death, quarantine course, sense of limitation, stigmatization, and financial problems may increase the fear [6]. Fear is often a primitive emotion and can be described as a real or perceived threat. The rising level of fear affects the individual not only psychologically, but also physiologically. It causes a stress response. The emergence of stress responses creates many physiological changes in the body. An increase in the level of stress causes an increase in the level of cortisol, also known as the stress hormone in the body. Cortisol is an important part of the body's stress

response and has a very significant effect on metabolism, cardiovascular function, and immune regulation [7]. The study on the level of cortisol in patients with COVID-19 showed that patients with high cortisol levels had a shorter survival time [8]. Fear weakens the immune system, making the person more susceptible to the disease and causing the prognosis of the disease to worsen after the disease [9].

Adding mental health problems to physical health problems caused by the outbreak will significantly worsen the situation. It can be said that any research on this subject is vital to prepare experts for possible mental health problems. Therefore, to minimize the problems experienced after the pandemic, it is very important to make plans according to all the research conducted in this period. It is essential that individuals prone to psychological disorders in the different groups are determined in order to minimize problems [10]. Especially, COVID-19 fear is studied in various countries and groups. The fact that case numbers and death rates are different among countries, together with the application of different sociocultural policies gave rise to varying levels of fear rates [11]. There are relevant studies in the local and international literature on this issue [12-17]. In these studies, it was determined that there are social and economic factors affecting COVID-19 fear. In these studies, it was also determined that individual characteristics are effective on COVID-19 fear. For instance, in many studies, it was established that the level of fear in women was higher than the level of fear in men. In addition, results indicated that individuals with chronic health conditions who lost someone they are close to due to COVID-19 have higher levels of fear [11-17]. Such results demonstrate that while experienced events are similar, every individual has a different level of being affected by them.

2. Methods

2.1. Study design and purpose
This study was planned to examine COVID-19 fear in terms of its defining characteristics.

2.2. Population and sample of the study
A cross-sectional study with a web-based survey design was used. A simple random sampling method was used in the determination of the study sample and it was not restricted based on cities. It remained limited to the area of influence of online platforms. Participant data were collected between 10.08.2020-01.09.2020 using an online questionnaire that was prepared via google forms and distributed throughout social media, e-mail, and WhatsApp groups. Participation was voluntary and online consent was obtained from the participants. Adults who have Turkish understanding and reading ability and are over 18 age were included in the study. Collection of data on online platforms limited data to subjects under the age of 65. The study was completed with 727 people. Post-hoc power analysis was performed using the correlation coefficient between COVID-19 Fear scale score and Visual Analogue Scale scores (r=0.533) over the last sample number. The power of the study (effect size: 0.743) was found to be 100%.

2.3. Data collection
The data of the research were obtained using the sociodemographic information form prepared by the researchers, the COVID-19 Fear Scale, and the Visual Analogue Scale (VAS).

2.3.1 Socio-demographic Information Form
This form includes questions about the participant's introductory information such as age, gender, marital status, employment status, and home life [10,11].

2.3.2 COVID-19 Fear Scale
This scale was developed by Ahorsu et al. The scale is a 7-item and five-point Likert type scale. The responses were recorded on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The minimum score that can be taken from each question is 1, the maximum score is 5. A total score is calculated by adding the scores given to each item (between 7 and 35). The increase in the

score indicates that the fear of COVID-19 is increasing [18]. The Turkish validity and reliability study of the scale was conducted by two different researchers [19]. In the studies conducted, it has been determined that the scale is a single factor, highly valid, and reliable measurement tool in Turkish society (Cronbach's Alpha = 0.86) [12]. In this study, scale factor loadings were 0.66-0.74, corrected item-total correlation was 0.47-0.56, and Cronbach's Alpha value was determined as 0.886.

2.3.3   Visual Analogue Scale (VAS)

It is a measurement tool frequently used in objective evaluations in all groups. Many evaluations can be made using VAS [20-22]. In this study, VAS was used to determine the level of fear perceived by individuals [23-25]. It is easy to use and common. A rating between 0 and 10 can be made using VAS [26].

2.4. Data analysis

SPSS 21.0 (The Statistical Package for the Social Sciences-PC Version 21.0) package program was used for the statistical analysis of the data. Number (n), percentage (%), mean and standard deviation (SD) were used as descriptive statistical methods. The compatibility of the data for normal distribution was evaluated using the Shapiro-Wilk test. The t-test was used to compare two independent groups according to the distribution characteristics of the data, and the One-Way ANOVA test was used to compare three or more independent groups. Tukey multiple comparison tests were used for further analysis. Correlation between scale scores was evaluated with Pearson correlation analysis ($p < 0.05$).

Ethical approval: Ethical approval for this study was obtained from the Ethics Commission of Yozgat Bozok University (Date: 25/08/2020; Number 95799348-050.0104-E.200). Consent was obtained from the individuals who participated in the study.

3. Results

Table 1 shows the distribution of individuals' COVID-19 Fear Scale and VAS scores by sociodemographic variables. In the study, it was determined that 48.8% of individuals were 26 years old and over, 44.3% were married, 34.6 % had children, 18.7% had a chronic illness, and 29.2% were healthcare professionals. A statistically significant relation was found between the COVID-19 Fear Scale and the score distributions obtained from VAS with age, gender, marital status, having children, having a chronic disease, working status, and being health personnel ($p < 0.05$). COVID-19 Fear Scale and VAS scores were found to be significantly higher in individuals aged 26 years and older, women, married, having children, with a chronic disease, active workers, and healthcare professionals than other groups (Table 1). According to Tukey Post-Hoc analysis, the 18-25 age group has statistically significantly lower COVID-19 Fear Scale scores and VAS values compared to other groups (a<b).

Table 1. Distribution of VAS scores and COVID-19 fear scale scores according to the descriptive features of individuals

Features	Number (%)	COVID-19 Fear Scales X±SD	Test	p	VAS X±SD	Test	p
Age Min-Max(18-63 years)							
18-25 year	372(51.2)	18.56±6.75[a*]	F:5.247	**0.05**	5.45±2.79	F:12.219	**<0.001**
26-35 year	165(22.7)	19.95±6.70[b]			6.30±2.78		
36 years and over	190(26.1)	19.34±6.78[b]			6.59±2.86		
Gender							
Female	583(80.2)	20.05±6.76	t:5.808	**<0.001**	6.22±2.75	t:5.444	**<0.001**
Male	144(19.8)	16.46±6.11			4.81±2.97		
Marital status							
Married	322(44.3)	20.19±6.75	t:3.039	**0.002**	6.46±2.82	t:4.416	**<0.001**
Single	405(55.7)	18.66±6.74			5.53±2.81		
Having a child							
Yes	298(59.0)	20.21±6.77	t:4.731	**<0.001**	6.53±2.80	t:4.731	**<0.001**
No	429(41.0)	18.73±6.73			5.53±2.81		
Have chronic illness							
Yes	136(18.7)	20.75±6.99	t:2.708	**0.007**	6.58±2.95	t:2.911	**0.004**
No	591(81.3)	19.01±6.70			5.80±2.81		
Working status							
Yes	300(41.3)	20.12±6.95	t:2.599	**0.010**	6.37±2.81	t:3.393	**0.001**
No	427(58.7)	18.79±6.62			5.64±2.84		
Working as a medical staff							
Yes	212(29.2)	20.31±7.04	t:2.478	**0.013**	6.70±2.59	t:4.649	**0.001**
No	515(70.8)	18.94±6.64			5.63±2.89		

t: t-test   F:One Way ANOVA   *This group is different from the others

Table 2 shows the distribution of the COVID-19 Fear Scale and VAS scores according to family information. When the table was analyzed, it was found that the individuals who stated that they had healthcare personnel and people with a chronic disease in the family had higher mean scores on the COVID-19 Fear Scale and VAS than other groups had, and this difference was statistically significant (p<0.05). However, no significant relationship was found between living with an individual with a chronic disease, living with an individual over 65, frequency of going out of the home, and the mean scores of the COVID-19 Fear Scale and VAS. In the study, it was found that the individuals who always watch COVID-19 news and always talk about COVID-19 at-home settings, received higher mean scores on the COVID-19 Fear Scale and VAS, and this difference is found statistically significant (p <0.05). According to Tukey Post hoc analysis, individuals that always watch COVID-19 news and discuss COVID-19 at home have statistically significantly higher COVID-19 fear scales and VAS scales compared to other groups (a<b<c).

Table 2. Distribution of VAS scores and COVID-19 fear scales cores according to family information

Features	Number (%)	COVID-19 Fear Scale X±SD	Test	p	VAS X±SD	Test	p
Health staff in the family							
Yes	190(26.1)	20.28±6.93	t:2.232	**0.026**	6.71±2.63	t:4.343	**<0.001**
No	537(73.9)	19.00±6.70			5.67±2.87		
Living with a healthcare professional							
Yes	127(17.5)	19.78±6.82	t:0.813	0.416	6.62±2.65	t:2.972	**0.003**
No	600(82.5)	19.24±6.78			5.80±2.87		
Individuals with a chronic disease in the family							
Yes	439(60.4)	20.02±6.80	t:3.372	**0.001**	6.21±2.80	t:3.085	**0.002**
No	288(39.6)	18.30±6.63			5.54±2.87		
Living with an individual with a chronic disease							
Yes	291(40.0)	19.83±6.74	t:1.592	0.112	6.00±2.77	t:0.446	0.656
No	436(60.0)	19.01±6.80			5.90±2.90		
People over 65 years present in the family							
Yes	349(48.0)	19.79±7.14	t:1.747	0.081	6.37±2.88	t:3.947	**<0.001**
No	378(52.0)	18.92±6.42			5.54±2.76		
Living with an individual over the age of 65							
Yes	100(13.8)	19.52±6.98	t:0.281	0.778	5.88±2.79	t:0.235	0.814
No	627(86.2)	19.31±6.76			5.95±2.86		
Frequency of watching news about coronavirus at home							
Sometimes	110(15.1)	17.25±6.15[a]*	F:22.931	**<0.001**	4.56±2.92	F:30.226	**<0.001**
Usually	354(48.7)	18.40±6.69[b]			5.69±2.76		
Always	263(36.2)	21.47±6.63[c]			6.86±2.62		
The frequency of talking about coronavirus at home							
Sometimes	176(24.2)	16.59±6.27[a]*	F:37.482	**<0.001**	4.57±2.96	F:39.892	**<0.001**
Usually	394(54.2)	19.21±6.42[b]			6.05±2.64		
Always	157(21.6)	22.73±6.78[c]			7.21±2.59		
How often do you leave your home							
Sometimes	176(24.2)	19.69±6.94	F:1.923	0.147	5.98±3.05	0.515	0.598
Usually	416(57.2)	18.93±6.49			5.86±2.75		
Always	135(11.8)	20.14±7.38			6.14±2.87		

t: t-test   F: One-way ANOVA   *This group is different from the others

In Table 3, the relationship between the COVID-19 Fear Scale total score and the VAS score is given. As a result of the analysis, a moderate positive correlation was found between the COVID-19 Fear Scale total score and VAS score (p <0.05).

Table 3. Relationship between COVID-19 Fear Scale total score and VAS score

Scales	VAS	
	r	p
COVID-19 Fear Scale	0.533	<0.01**

** Correlation is significant at the 0.01 level (2-tailed).

4. Discussion

COVID-19 pandemic is a medical phenomenon as well as a social phenomenon affecting individuals and societies on various levels, causing disruptions in many ways. In this study, the fear of COVID-19 and related factors in Turkish society were analyzed. In this study, the COVID-19 Fear Scale score and VAS score were found to be significantly lower in individuals under 18-25 years of age. In addition, the COVID-19 Fear Scale score and the VAS fear score are significantly higher in people with chronic diseases and those with a family history of chronic disease and a relative over 65 years of age (Table1, Table2). In several studies, there was no significant relationship between age and fear of coronavirus [12,27,28]. COVID-19 Fear Scale report, death cases were generally seen in older individuals with a systemic disease (hypertension, diabetes, cardiovascular diseases, cancer, and other immunosuppressive conditions; chronic lung diseases in particular) [29]. For this reason, it is thought that the fear of COVID-19 is higher in people who are in the at-risk group or who have a relative in it. In the study of Bakioğlu et al., it was found that people with chronic disease had higher fear scores, similar to the findings in this study [30].

Gender is one of the factors that affect fear. Although there are different results in the literature, there are findings of women being affected by fear or phobia more frequently than men in a ratio of 2:1 [22]. In this study, women's COVID-19 fear were found to be significantly higher than man. In studies conducted domestically and abroad, similar results to this study were found [12,13,30-32]. A study by Lin et al. assessed results of studies conducted in 10 countries using the COVID-19 fear scale and found that in all these countries women had higher fear scores compared to men [11]. This result shows that the coronavirus pandemic causes more psychological effects in women [14] and is parallel with the findings of previous studies on mental health in women [33].

According to this study, being married and having children are factors that increase the fear of COVID-19. The high fear scores of individuals who are married and have children may be due to their sense of responsibility and concern about losing their loved ones. According to the results of a study conducted in India, it is stated that married people have a higher fear of COVID-19 [13], oppositely, in another study conducted in the Philippines, there was no relationship between marital status and fear of COVID-19. In a study conducted with soccer players, a statistically significant difference was not established between marital status and COVID-19 fear [34]. In a study conducted in Turkey, single people were found to have higher fear levels [17]. In a study, it was established that individuals who had chronic diseases, who had someone close to them had COVID-19, and who experienced death due to the disease had higher fear levels [16].

In this study, having family members over the age of 65 with chronic diseases increased COVID-19 fear. However, living in the same house with such individuals did not affect fear scores. This result, having a family member in a risk group causes the person to experience fear at the same level even if they do not live in the same house.

In this process, media lead people to face their fears over and over [2,35]. In this study individuals that always watch the news on and discuss COVID-19 at home were found to have higher fear scores. It is considered that this is related to repetitive exposure of people to news and discussions that increase their anxiety.

Healthcare providers are at the forefront of struggling with coronavirus worldwide. For this reason, people at risk the most for COVID-19 transmission are healthcare providers. In this period, lots

of healthcare providers were infected and many of them died. In this study, it is found that being a healthcare provider and having a healthcare provider relative creates a significantly higher COVID-19 Fear Scale and VAS scores than it does for other groups of people. In the study carried out in India, the level of fear of healthcare providers was found higher [31]. The reason behind this finding is thought to be a result of their direct close contact with COVID-19 positive patients and the risk of disease transmission to their families.

The pandemic announced by the emergence of COVID-19 and the struggle of the countries with this pandemic constituted the agenda of the world press. People are watching the news about this recently defined virus, the disease it causes, the causes of the disease and prevention methods, and making research on the internet thousands of times every day. In this period, the content of daily conversations was frequently dominated by COVID-19. This is thought to affect people's mental health. There is evidence that repeatedly interacting with trauma-related media content for several hours after social trauma, can prolong acute stress experience [36]. Also, in the previous epidemic outbreaks (e.g., H5N1 avian flu), more media exposure is associated with increased fear [37]. In this study, it was found that people who always watch and talk about coronavirus at home setting have higher fear scores. The results of the study of Mertes et al. consisting of participants in 28 countries show similar results with our study. In this study, the data supporting the literature were obtained in this respect [29].

In the study, there is a moderate positive relationship between VAS and the scale mean score. Accordingly, it can be said that VAS is a measurement tool that can be used to evaluate COVID-19 fear. In the literature, there are studies conducted using VAS to assess fear [23-25]. However, no studies were found that used VAS to assess COVID-19 fear. In this context, the study is a first. Further studies demonstrating the effectiveness of VAS in assessing fear of COVID-19 are recommended.

There are many studies in the literature using the COVID-19 Fear Scale. In these studies, COVID-19 Fear Scale mean scores are similar to the results in this study [,30,13,15, 27, 38]. In a study conducted with the Iranian people, the COVID-19 fear scale score was found as 27.39 [10]. Increasing numbers of cases and death rates after the first incident in Iran, are thought to have an impact on this situation. In a study conducted by Lin et al., Iran was found to be the country with the highest level of fear among 10 countries while New Zealand was found to be the country with the lowest level of fear [11]. Island countries applied more successful strategies to protect their boundaries [11]. Differences among countries in fear levels are based on different measures employed by every country. The fact that scales were applied at different times and different applications were put in place during these times (applications such as full closure, curfews, discontinuing education) and different case and death numbers were the effective levels of fear. Different start dates of vaccine applications in countries, problems with the supply of vaccines might also cause changes in the level of fear.

5. Conclusion and Recommendations

As a result, it was determined that age, gender, marital status, being at high-risk work, and having a highly at-risk relative are the factors that increase the fear of COVID-19. It is recommended to detect coronavirus fear of society, make public surveys to find out highly at-risk individuals, and also, provide psychological support. It is very important to diversify and implement protective intervention programs to reduce some of the psychological consequences of fear and fear. The proliferation of vaccination might contribute to decreasing fear. It could be suggested that studies are conducted to compare fear levels between countries with high vaccination levels and countries with low vaccination levels.

Limitations and Suggestions for Future Studies

The sample size of this study and its representation of different groups are its strengths. However, the study's weaknesses are that data were collected within a certain period, the possibility of self-reporting of individuals causing potential bias, the high number of young population and low numbers

of elderly among the participants. Because the study was limited to online platforms, the population above the age of 65 could not be reached. Future studies that focus on certain groups and show comparisons between different periods to reach more specific findings are required.

Conflict of Interest

Authors declare that they have no conflict of interest.

Ethical approval

Ethical approval for this study was obtained from the Ethics Commission of Yozgat Bozok University (Date: 25/08/2020; Number: 95799348-050.0104-E.200). Consent was obtained from the individuals who participated in the study.

Authors' Contributions

S. Ç: Conceptualization, Methodology, Resources, Investigation Formal Analysis Writing - Original draft preparation (% 40)

D. Y. G: Conceptualization, Methodology, Resources, Writing - Original draft preparation (% 35).

D. E: Methodology, Resources, Writing - Original draft preparation (%25)

All authors read and approved the final manuscript

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