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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

FACTORS AFFECTING THE FEAR OF COVID-19*

COVID-19 KORKUSUNU ETKİLEYEN FAKTÖRLER

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ABSTRACT

The aim of the study is to determine the factors affecting individuals' fear of COVID-19. The sample of the study consisted of 1,582 individuals aged between 18 and 65 years living in Turkey. Data are collected through an online questionnaire. To analyze data, descriptive statistics, validity-reliability analysis, and hypothesis tests are performed. Results of the study show that participants have a very high level of fear of COVID-19. The backward multiple regression model is developed to determine the independent variables that affect the fear of COVID-19. It is determined that there is a statistically significant higher level of fear of COVID-19 in females, in those who use social media as a source of information, those who have a fear of losing their loved ones, those without a good economic situation, those with a change in health system confidence after the COVID-19 pandemic, those with moderate health status and those with chronic diseases. Consequently, it is recommended that multidisciplinary teams that include mental health professionals should be created to prevent the spread of outbreaks and their negative effects, and healthcare professionals should consider the fear of COVID-19 as a part of the management of chronic diseases.

Anahtar Kelimeler: Fear of Disease, COVID-19, Turkey, Outbreaks, Public Health.

JEL Sınıflandırma Kodları: I12, I18.

ÖZ

Bu çalışmanın amacı, Türkiye'de yaşayan bireylerin COVID-19 korkusunu etkileyen faktörleri belirlemektir. Araştırmanın örneklemini Türkiye'de yaşayan 18-65 yaş arası 1.582 kişi oluşturmuştur. Veriler çevrimiçi bir anket aracılığıyla toplanmıştır. Verileri analiz etmek için tanımlayıcı istatistikler, geçerlilik ve güvenilirlik analizi ve hipotez testleri yapılmıştır. Çalışmanın bulguları, katılımcıların çok yüksek düzeyde COVID-19 korkusuna sahip olduklarını göstermiştir. COVID-19 korkusunu etkileyen bağımsız değişkenleri belirlemek için geriye doğru çoklu regresyon modeli geliştirilmiştir. Modele göre kadınlarda, sosyal medyayı bilgi kaynağı olarak kullananlarda, sevdiklerini kaybetme korkusu olanlarda, ekonomik durumu iyi olmayanlarda, COVID-19 salgını sonrasında sağlık sistemine duyduğu güvende değişiklik olanlarda, sağlık durumu orta olanlarda ve kronik hastalığı olanlarda istatistiksel olarak anlamlı düzeyde daha yüksek COVID-19 korkusu olduğu tespit edilmiştir. Sonuç olarak, salgınların yayılmasını ve olumsuz etkilerini önlemek için ruh sağlığı profesyonellerini içeren multidisipliner ekiplerin oluşturulması ve sağlık çalışanlarının COVID-19 korkusunu kronik hastalıkların yönetiminin bir parçası olarak görmeleri önerilmektedir.

Keywords: Hastalık Korkusu, COVID-19, Türkiye, Pandemi, Halk Sağlığı.

JEL Classification Codes: I12, I18.

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GENİŞLETİLMİŞ ÖZET

Amaç ve Kapsam

İnsan hareketliliğindeki çarpıcı artışlar patolojik ajanların yayılmasının en önemli kolaylaştırıcı unsuru haline gelmiştir. Salgınların daha hızlı bir biçimde daha geniş alanlara yayılması yalnızca doğrudan sağlığı tehdit etmemiş aynı zamanda toplumsal düzeydeki bir korkunun kaynağı haline gelmiştir. Geçmiş deneyimler göstermiştir ki salgın hastalıklar sırasında zihinsel sağlığı etkilenen insan sayısı enfeksiyondan etkilenen insan sayısından fazla olma eğilimindedir. Ancak hastalıklara karşı bir ilaç veya aşının geliştirilemediği durumlarda hükümetlerin bütün gayretlerini salgının kontrol edilmesine yönlendirmesi, salgının korku gibi psikolojik boyutunu ve dolayısıyla zihinsel sağlığın korunmasını geri planda bırakabilmektedir. Bu da toplumlar açısından hem ekonomik hem de sosyal maliyetlere neden olmaktadır. Dolayısıyla otoritelerin/politika yapıcıların korkunun etkilerinin yalnızca bireysel düzeyde kalmayacağının farkında olması, salgına neden olan etiyolojik ajanın ne olduğu veya salgının nasıl bulaştığını araştırmanın yanında korkuyu etkileyen faktörlerin neler olabileceğine de odaklanması salgın sürecini yönetmenin bir parçası olmalıdır. Bu çalışmada COVID-19 pandemisine ilişkin korkuyu etkileyen faktörlerin belirlenmesi amaçlanmaktadır.

Yöntem:

Araştırma Türkiye'de yaşayan bireylerin COVID-19 korkularını etkileyen faktörleri belirlemek amacıyla analitik kesitsel modele dayanarak tasarlanmıştır. Çalışmanın evreni Türkiye'de yaşayan 18-65 yaş arası bireyler olarak belirlenmiştir. Ülke nüfusunun temsili açısından ulusal düzeydeki çalışmalarda 1000 kişilik bir örneklem büyüklüğünün ±%3 standart hata ile istatistiksel olarak anlamlı değerlendirmeler sağlayacağı ifade edilmektedir. Çalışmada kısa sürede hedef örneklem büyüklüğüne ulaşabilmek için kolayda örnekleme ve kartopu örnekleme yöntemleri kullanılmıştır. Çalışmaya dahil edilme kriterleri, 18-65 yaş arasında olma, okuryazar olma, Türkçe biliyor olma ve çalışmaya katılmaya gönüllü olma olarak belirlenmiştir. Çalışma online anket şeklinde tasarlandığı için internet erişimi olan katılımcılar çalışmaya katılabilmiştir. Çalışmanın verileri 30 Mayıs-30 Haziran 2020 tarihleri arasında toplanmıştır. Çalışmada 1582 katılımcı anketi tamamlamıştır. Çalışmanın verileri online anket formu ile toplanmıştır. Anket formu üç bölümden oluşmaktadır. İlk bölümde sosyo-demografik bilgiler (yaş, cinsiyet, medeni durum, eğitim, istihdam durumu ve ekonomik durum), bireylerin sağlık durumlarına (genel sağlık değerlendirmesi, kronik hastalığın varlığı) yönelik sorular ve sağlık davranışlarını değerlendirmek amacıyla Sağlıklı Yaşam Tarzı Bileşik Ölçeği yer almaktadır. İkinci bölümde araştırmacılar tarafından literatür araştırması sonucunda hazırlanan sağlık sistemine ulaşım ve güven ile ilgili ifadeler bulunmaktadır. Anket formunun üçüncü bölümünde katılımcılara COVID-19'a kendilerinin ve yakın çevrelerinin yakalanma durumları ve COVID-19 bilgi kaynakları sorulmuştur. Bu bölümde ayrıca COVID-19 korkusunun değerlendirilmesi amacıyla Champion ve arkadaşları (2004) tarafından ilk başta meme kanseri korkusu için geliştirilen, birçok hastalığa uyarlanan ve Türkçe geçerlilik güvenilirlik çalışması yapılmış ölçeğin COVID-19'a uyarlamasına yer verilmiştir. Verilerin istatistiksel analizi IBM SPSS 22.0 paket programında tanımlayıcı istatistikler, geçerlik ve güvenilirlik analizleri, hipotez testleri ile değerlendirilmiştir. COVID-19 korkusunu etkileyen faktörleri belirlemek amacıyla geriye doğru yöntemi ile çoklu regresyon analizi kullanılarak model geliştirilmiştir. Değerlendirmelerde istatistiksel anlamlılık düzeyi $p<0,05$ olarak kabul edilmiştir.

Bulgular:

Çalışmanın bulguları, katılımcıların çok yüksek düzeyde COVID-19 korkusuna sahip olduklarını göstermiştir. İstanbul ve Ankara'da yaşayanların, 35-65 yaş grubunun, kadınların, ekonomik durumu iyi olmayanların, çalışmayanların, bilgi kaynağı olarak kitle iletişim araçlarını ve sosyal medyayı kullananların, sevdiklerini kaybetmekten korkanların, kronik hastalığı olanların, genel sağlık değerlendirmesi kötü olanların, düzenli egzersiz yapmayanların, yeterli meyve-sebze tüketenlerin, VKİ ideal olmayanların ve sağlık sistemine duyduğu güven olumsuz yönde değişenlerin korku puanları ortalaması istatistiksel olarak anlamlı düzeyde daha yüksek bulunmuştur ($p<0,05$). COVID-19 korkusunu etkileyen tek demografik faktör cinsiyet olarak belirlenmiştir; kadınlarda korku düzeyinin erkeklere nazaran yüksek olma olasılığı 2,61 kat daha fazladır. Bilgi kaynağı olarak sosyal medya kullananların kullanmayanlara göre korku düzeyinin yüksek olma olasılığı 1,69 kat daha fazladır. COVID-19'dan sonra sağlık sistemine güveni artanların artmayanlara göre korku düzeylerinin tüksek olma olasılığı 1,48 kat daha fazladır. Sevdiklerini COVID-19'dan kaybetmekten korkanların korku düzeylerinin yüksek olma olasılığı, kaybetmekten korkmayanlara göre 5,97 kat daha yüksektir. Ekonomik durumunu iyi olarak değerlendirmeyenlerin korku düzeylerinin yüksek olma olasılığı iyi olarak değerlendirenlere göre 1,27 kat daha fazladır. Sağlık durumunu orta düzeyde ifade edenlerde sağlık durumu iyi olana göre 1,15; kronik hastalığı olanlarda olmayanlara göre daha yüksek korku düzeyine sahip olma olasılığı 1,47 kat daha fazladır.

Sonuç ve Tartışma:

Çalışmaya katılan bireylerin büyük çoğunluğu yüksek COVID-19 korku düzeyine sahiptir. Bu durum salgınların bireylerin ruh sağlığı üzerinde yarattığı olumsuz etkilerinin de dikkate alınması gerekliliğini ortaya koymaktadır. Bu doğrultuda salgınların yayılmasını önleme çalışmalarında ruh sağlığı profesyonellerinin dâhil olduğu multidisipliner ekiplerin oluşturulması önem taşımaktadır. Bugüne kadar olan tecrübeler göstermiştir ki medya ve internette salgına ilişkin çarpıcı hikayelerin paylaşılması toplumsal korkuyu en çok artıran faktörler arasındadır. Bilgi kanallarının ve içeriklerinin doğruluğunun teyit edilmesi bireylerin ruh sağlığının korunması açısından gereklidir. Yüksek düzeyde korku bireylerin davranışlarını güçlü biçimde şekillendirebilmektedir. Bu gücün yıkıcı etkilerini azaltmak için korkuyu daha verimli alanlara kanalize ederek bireyleri sağlıklı yaşam tarzı alışkanlıklarına yönlendirmek mümkün olabilir.

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1. INTRODUCTION

While it was estimated that 25 million people traveled around the world in 1950, the United Nations World Tourism Organization announced that this number reached 1.4 billion in 2018 (UNWTO, 2019). The dramatic increases in human mobility have become the most important facilitator of the spread of pathological agents (Ornell et al., 2020). Although many outbreaks have occurred throughout history, what is certain is that they were never around us as much as they are today. Considering the last two decades, outbreaks caused by coronaviruses can be shown as remarkable examples. Toronto had the second highest incidence for SARS-CoV, which first appeared in China with the highest number of cases in 2002, which is proof that physical boundaries are no longer important for outbreaks (WHO, 2003). The registration of MERS-CoV in a total of 37 countries in 2012 (Chen et al., 2018) and finally the approval of COVID-19 in 213 countries and regions (Worldometer, 2020) have been unique proofs of this proposition. The rapid spread of outbreaks to wider areas not only directly threatened health, but also became a source of social fear.

Fear is defined as an unpleasant emotional state, triggered by the perception of threatening stimuli (Pakpour & Griffiths, 2020), which is a feeling of anxiety or alarm (Kinsman, 2012). The uncertainties regarding outbreaks and the potentially fatal consequences of diseases form the basis of social fear. However, interventions such as quarantine and isolation applied to protect public health further increase the level of fear (Person et al., 2004). It is recognized that a moderate fear helps people cope with a disease (Cheung, 2015) and is also known to motivate a range of behaviors that reduce participation in risky behaviors (Harper et al., 2020). However, excessive fear can strongly shape individuals' behaviors by paralyzing them (Cheung, 2015; Shultz et al., 2016). For example, in South Korea, which has a high number of MERS-CoV-infected cases, the lack of sufficient information about the disease has prevented people from daily activities such as going out due to the fear it caused among citizens (Kim et al., 2017). The dramatic news about SARS-CoV published in the global press caused the fear to spread in societies. During and after the SARS-CoV outbreak, suicide rates among older people have increased in Hong Kong (Cheung et al., 2008). Similarly, COVID-19 has had profound psychological effects on all individuals (Pakpour & Griffiths, 2020). Fear of contracting COVID-19 has resulted in a suicide death in India (Goyal et al., 2020). Moreover, a similar case has been recorded in Bangladesh (Mamun & Griffiths, 2020).

Experiences have shown that the number of people whose mental health is affected during outbreaks tends to exceed the number of people affected by the infections (Reardon, 2015). However, if a drug or vaccine against a disease cannot be developed, directing all efforts by governments to control the outbreak may lead to the overlooking of the psychological dimension of the outbreak, such as fear, and thus not giving the necessary importance to the protection of mental health. This causes both economic burdens and social costs in societies. Therefore, it should be a part of the management of the outbreak process that authorities/policymakers should be aware that fear does not only lead to individual-level effects, and focus on uncovering the factors that affect fear, as well as investigating the etiological causes or ways of transmission of outbreaks (Kinsman, 2012). Fear is a highly researched psychological construct in the literature: fear of Alzheimer's disease (Cantegreil-Kallen & Pin, 2012), fear of falling (Legters, 2002), fear of breast cancer (Champion et al., 2004), fear of recurrence of cancer (Lichtenthal et al., 2017). There are also more limited studies on the fear of outbreaks (Kim et al., 2017; Kinsman, 2012; Mertens et al., 2020; Ornell et al., 2020; Pakpour & Griffiths, 2020). However, the researchers conducted in Turkey have not yet focused on this issue. In this study, it is aimed to determine the factors affecting individuals' fear of COVID-19. Thus, this study can guide the design of training and prevention programs on combating fear based on the needs of different groups.

2. CONCEPTUAL FRAMEWORK

Emotions are strong feelings that we directly refer to someone or something, and in this respect, they are seen as intentional situations (Deigh, 2004). However, there is a widespread acceptance that the rational mind is different from emotions and the assumption behind this divergence is that emotions are against rationality or can be harmful sometimes. The reason why individuals can react in different ways even though they are faced with the same situations (Gençöz, 1998) can be sought in this dissociation. Fear is one of the emotions in the focus of attention in the literature in terms of both the damage it causes to rationality and the differences it creates between individual reactions. Fear is seen as an adaptive emotion that activates the energy to cope with a potential threat (Dunsmoor & Paz, 2015; Mertens et al., 2020). When the threat is imminent, the function of fear is obvious: the organism must be alert and the body is quickly ready for immediate action, such as fleeing or fighting (Muris, 2007). In this

respect, fear helps the individual to defend herself against potential dangers. For example, it is accepted that moderate fear helps people cope with the disease (Cheung, 2015), and it is also known that fear motivates a range of behaviors that reduce participation in risky behaviors (Harper et al., 2020). However, when the level of fear increases, devastating results can occur both individually and socially. It can cause to the mental health problems such as phobia and social anxiety at the individual level, in addition that the effects it creates at the social level such as xenophobia are also common (Mertens et al., 2020).

There is an increasing interest in the fear levels of the disease in the literature. Although it is considered normal for people to be worried about their own and their loved ones' health, fear of illness or phobia is defined as an abnormal or irrational fear of getting a disease (Furer et al., 2007). In the evolutionary course of diseases, the relative importance of disease fears has also changed. Although degenerative diseases such as cancer, Alzheimer's disease, heart disease, stroke and diabetes are at the top of the list today, such diseases are evolutionary innovations; because its etiology and pathogenesis largely depend on risk factors and lifestyle habits typical of modern environments (e.g., longevity, high-calorie diet, sedentary lifestyle, obesity, smoking, alcohol, pollution, etc.). Our ancestors living in the naturel environment were not exposed to these risk factors and therefore were extremely unlikely to develop cancer or dementia. However, they were much more likely to die from an infection such as leprosy, syphilis. Fear of degenerative disease is largely cognitive and driven by cultural inputs. People know that smoking increases the risk of lung cancer or that obesity is associated with stroke and heart attack. Yet people continue to smoke and eat unhealthy foods; because the neural circuits in the human brain that mediate the fear response are not predisposed to perceive cigarettes or hamburgers as dangerous stimuli. On the contrary, the fear of infectious diseases, from cholera to leprosy, from plague to coronavirus, is deeply rooted in our emotional brain (Troisi, 2020).

SARS CoV-2, the new member of the coronavirus family, which has entered our lives in the last 20 years, has also turned into a highly feared disease in a short time. The reasons for this can be listed as: not knowing how long the pandemic will last, not being sure whether family members are affected, not having enough professionals to counsel people, finding the vaccine takes time, interrupting future plans, worrying and suspicious about contacting sick people (Ren et al., 2020; Schimmenti et al., 2020). High fear of COVID-19 affects public health in different ways by causing irrational and uncertain thoughts (Ahorsu et al., 2020). First, fear of COVID-19 increases the level of depression, anxiety, and stress in healthy individuals (Lai et al., 2020; Qiu et al., 2020; Sorokin et al., 2020; Yao et al., 2020), it intensifies the symptoms of those with a previous psychiatric disorder (Shigemura et al., 2020). Secondly, it is stated that fear and panic about COVID-19 may cause adjustment disorder and depression by leading diagnosed patients and their families to experience stigma and social exclusion associated with the disease (Zhang et al., 2020). Finally, the fear of a pandemic can affect health and healthcare by influencing health-protection behaviors and diagnostic procedures for the disease. The literature shows that patients, who actively seek information when faced with a threat, develop more anxiety in the face of medical procedures, show more adherence to disease diagnostic procedures, and visit their family physician even for less serious health problems than those who adopt a blunting coping style (i.e., information avoidance) (Millar & Millar, 1996; Miller et al., 1988; Steptoe & O'Sullivan, 1986;). Active information seekers, called observers, also worry more about illness, and have a greater fear of blood/injury (Muris & van Zuuren, 1992).

Because fear may be a central construct in explaining the negative individual and societal consequences of the COVID-19 pandemic, it is important to better understand what exactly people fear and to identify the factors that make it easier to predict (Coelho & Purkis, 2009; Taylor et al., 2020). Fear, which is considered an emotional response to the threat regardless of the severity of the risk of infection during the pandemic, has been associated with many different psychological, sociological, and genetic factors (Goodwin et al., 2011; Vaughan & Tinker, 2009). According to studies, some sociodemographic characteristics such as being older, being a woman, and being more educated are associated with higher fear of pandemics and the adoption of protective behaviors (Bish & Michie, 2010). It is thought that fear in the face of a threat does not arise in a vacuum, rather, individuals can be affected very quickly by the emotional reactions of others. This reveals that there is a strong relationship between perceiving the anxiety of family and friends and personal anxiety (Goodwin et al., 2011). At all stages of a pandemic, healthcare professionals should be aware of the circulating rumors and the potential risk of "emotional contagion" (Goodwin et al., 2011; Goodwin et al., 2009). Social status can also affect the level of fear experienced. For example, the low-income class is more concerned with the equitable and fair delivery of health services. Therefore, during a pandemic, this class may experience more negative emotional expressions such as anger or fear due to greater risk perception to health risks (Vaughan & Tinker, 2009). Another factor affecting the fear level

of the society is the trust in the government and the system. It is thought that individuals with high levels of trust carefully apply protective measures, while individuals with opposite values to the system pay less attention to desired behaviors (Goodwin et al., 2011). It has been concluded that trust is the basis for hearing, interpreting, and responding to messages about public health.

3. MATERIALS AND METHODS

The research was designed with an analytical-cross-sectional model to determine the factors affecting the fear of COVID-19 among individuals living in Turkey. This study was approved by TR Ministry of Health, General Directorate of Health Services on 16 May 2020 and approved by Başkent University Institutional Review Board on 28 May 2020 (Project no: KA20/189) and supported by Başkent University Research Fund.

3.1. Sample

The sample of the study consisted of 1582 individuals aged between 18 and 65 years living in Turkey. It is stated that a sample size of 1000 participants, which can represent the population of the country in national-level studies, will provide statistically significant evaluations with a standard error of ± 3% (Silber et al., 2018). In the study, convenience sampling (reaching researchers' own social networks) and snowball sampling methods (by asking the participants to share the questionnaire via their own social networks) were used. Inclusion criteria included being between the ages of 18 and 65 years, being literate, speaking the Turkish language, and volunteering to participate in the study. This study, which has an online questionnaire design, enabled only the inclusion of participants with an Internet access. The data of the study were collected between 30 May and 30 June 2020.

3.2. Data Collection Tools

Data were collected through an online questionnaire. The survey forms were accessed via personal QR codes and on various social media platforms. The questionnaire consists of three parts. The first part includes socio-demographic information (age, gender, marital status, education, employment status and economic status), questions on health status (general health status, presence of chronic diseases), and a Healthy Lifestyle Composite Measure that will assess health behavior. The Healthy Lifestyle Composite Measure consists of 5 indicators selected from the Behavioral Risk Factors Surveillance System by (Adams et al., 2016) based on the "Healthy People 2020" goals. These indicators include smoking, consumption of fruits and vegetables, physical activity, excessive alcohol consumption and adequate sleep (Yilmaz & Çağlayan, 2016). The second part includes statements about access to and trust in the healthcare system prepared by the researchers through a literature review. This section contains 5 Likert-type questions questioning the level of participation in 3 statements about the quality of, and access to healthcare services and 8 statements about trust in healthcare personnel, health institutions, healthcare system, Ministry of Health, and health statistics. The third part of the questionnaire questioned the transmission of COVID-19 to the participant or his relatives and the sources of information about COVID-19. In the continuation of the third part, to evaluate the fear of COVID-19, there was an adaptation for COVID-19 of a scale originally developed by (Champion et al., 2004) to evaluate the fear of breast cancer, which was later adapted to many diseases and whose Turkish validity and reliability study has already been conducted. This instrument to measure fear levels was chosen for three reasons. First, at the beginning of the pandemic, there was no standardized and validated instrument specifically developed to measure the fear of COVID-19. Furthermore, even though the Fear Scale was originally developed to measure fear of breast cancer, the question items are generic and comprehensive. The Fear Scale covers common responses to fear such as feeling scared, nervous, upset, depressed, jittery, uneasy, and anxious, as well as having heart palpitations (Choi et al., 2022). And finally, the 8-item Breast Cancer Fear Scale was one of the few instruments available to measure fear among the Turkish population (Secginli, 2012). This study also carried out the validity and reliability study of the Turkish adaptation of the scale to COVID-19. The fear scale created by (Champion et al., 2004) consists of 8 one-dimensional items in 5-point Likert type. Scoring is established by the total score of the scale items, where high total scores indicate a high level of fear. The threshold value of the scale is 25.

3.3. Data Analysis

Statistical analysis of the data was carried out on IBM SPSS 22.0 software using descriptive statistics, validity and reliability analysis and hypothesis tests. The normality distribution of the scores of the COVID-19 Fear Scale was evaluated with the Kolmogorov-Smirnov test. In this study, the only dependent variable was the fear of COVID-19, while the independent variables included demographic information, socio-economic status, health status,

healthy lifestyle habits, and access and trust in the healthcare system. The independent variables were expressed in numbers and percentages, and the score of the COVID-19 fear scale was expressed as mean and standard deviation. Since the Scale score met the parametric assumptions, the difference in the mean scale score of fear of COVID-19 among independent variables was tested using the Independent Sample T-test for two-group variables and the one-way analysis of variance (ANOVA) for variables in three or more categories. To determine the factors affecting the fear of COVID-19, a model was developed by multiple regression analysis using a backward method. $p<0.05$ value was considered statistically significant.

3.3.1. Validity Analysis

The content validity of the COVID-19 adaptation of the fear scale developed by Champion et al. (2004) was established with Expert Opinion. The scale items prepared as a result of the adaptation were examined by a group of 8 faculty members who are experts in different fields and evaluated in a 4-point rating system. The consistency between expert opinions was assessed using Kendall's coefficient of concordance (Kendall's W) analysis. The Kendall's W coefficient was calculated as 0.71, with a p value of 0.006, which in turn revealed a concordance between expert opinions.

3.3.2. Reliability Analysis

The reliability of the scale was evaluated with the internal consistency coefficient and item-total score correlation coefficients. For the internal consistency of the scale, we calculated Cronbach's alpha value recommended for Likert-type scales. The Cronbach's alpha coefficient of the scale was calculated as 0.919. The correlation of the items with the total score was evaluated by Pearson's correlation analysis. The item-total score correlations of the scale ranged from 0.675 to 0.875 at a significance level of 0.01.

4. RESULTS

The distribution of 1582 participants in the study by socio demographic characteristics is shown in Table 1. The average age of the participants is 33.66 ± 10.87 years, with 37.5% in the age group of 18 to 28 years. Of the participants, 69.3% were female and 55.2% were single. The evaluation of the socioeconomic situation showed that 83% of the participants were graduated from higher education, 37.4% were working with payroll and 55.9% had a poor economic situation.

Table 1. The Distribution of Participants by Their Demographic and Socio-Economic Characteristics

	Frequency (n)	**Percentage (%)**
Living city		
Istanbul	203	12.8
Ankara	958	60.6
Others	421	26.6
Age		
18-28	594	37.5
29-39	528	33.4
40-50	244	15.4
51-65	216	13.7
Gender		
Female	1097	69.3
Male	485	30.7
Marital status		
Have partner	873	55.2
No partner	709	44.8

	Frequency (n)	Percentage (%)
Education level		
High school	269	17
Higher education	1313	83
Employment status		
Payroll employee	591	37.4
Self employment	188	11.9
Government official	290	18.3
Unemployment	513	32.4
Economic status		
Poor	885	55.9
Good	697	44.1

Table 2 summarizes the health status and healthy lifestyle habits of the participants. Table 2 shows that 22.8% of the participants have a chronic disease, 67.6% stated that they have a moderate health status, and 75.5% have an ideal BMI. Evaluation of healthy lifestyle habits showed that 66.6% of the participants were not smokers, 92.1% were not excessive alcohol consumers, 68.3% were consuming enough fruits and vegetables every day, and 79.8% were getting an ideal level of sleep, but only 26% were doing regular exercises. Overall, it showed that 47% of the participants have healthy lifestyle habits.

Table 2. The Distribution of Participants by Their Health Status and Healthy Lifestyle Behaviors

	Frequency (n)	Percentage (%)
Chronic disease		
No	361	22.8
Yes	1221	77.2
Self-rated health		
Poor	17	1.1
Moderate	1070	67.6
Good	495	31.3
BMI[§]		
Underweight (< 18.49)	175	13.3
Normal weight (18.5 - 24.99)	992	75.5
Overweight (>25)	147	11.2
Smoking		
Smoker	529	33.4
Non-smoker	1053	66.6
Excessive alcohol consumption		
Yes	125	7.9
No	1457	92.1
Consumption of fruits and vegetables		
Inadequate	502	31.7
Adequate	1080	68.3
Sleep time		
Insufficient (<7 hour/day)	320	20.2
Ideal (≥7 hour/day)	1262	79.8

	Frequency (n)	Percentage (%)
Physical activity		
Not regularly	1170	74.0
Regularly	412	26.0
Healthy lifestyle behaviors		
No (0-3 scores)	838	53.0
Yes (4-5 scores)	744	47.0

[§]BMI was calculated from the information obtained by asking the height and weight of the participants (Weight (kg) / Height $(m)^2$)

Table 3 shows the level of participation in statements about access to and trust in the healthcare system. Of the participants, 74.6% expressed confidence in healthcare personnel, 61.4% in healthcare institutions, 57.7% in healthcare system, 56.4% in the Ministry of Health, 55% in getting the best treatment approach, whereas 39.1% stated that they do not trust official statistics on COVID-19. Considering the statements about access to the healthcare system, 61.8% of the participants were of the opinion that they could access all the needed medical care and 46.6% of them had access to the information they needed, but 53.1% of them were of the opinion that not everyone was provided with the same quality of healthcare services.

Table 3. Participants' Level of Participation in Statements about Healthcare System Access and Trust

	Disagree		Neither disagree or agree		Agree	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
I trust in healthcare professionals in my country.	95	6.0	307	19.4	1180	74.6
I trust in healthcare organizations in my country.	182	11.5	429	27.1	971	61.4
I trust in healthcare system in my country.	249	15.7	420	26.5	913	57.7
I trust in the Ministry of Health in my country.	307	19.4	382	24.1	893	56.4
I trust in the statistics officially shared about COVID-19 in my country.	618	39.1	426	26.9	538	34.0
I trust that the health system in my country can offer me the best treatment when I need it.	243	15.4	469	29.6	870	55.0
The health system in my country provides everyone with the same quality of service.	840	53.1	365	23.1	377	23.8
In my country. I can easily access information about health services when I need it.	349	22.1	496	31.4	737	46.6
I get all the medical care I need in my country.	234	14.8	371	23.5	977	61.8

Table 4 shows some of the general characteristics of the participants on COVID-19. Table 4 shows that 68.1% of the participants used mass media and 64% used social media to get information about COVID-19. While 79.2% of the participants stated that they were not infected with COVID-19, the answer of "I don't know" given by 20.4% was remarkable. Of the participants, 10.4% reported the history of COVID-19 infection in a relative and 88.8% reported fear of mortality from COVID-19 in a relative. The Fear Scale developed by Champion et al. reported a "higher" fear score in 61.9% of the participants. Moreover, there was no change in the confidence in the healthcare system after the COVID-19 pandemic in 49.9% of the participants, whereas there was a positive change in 43.2%.

Table 4. The Distribution of Participants by Their COVID-19 Characteristics

	Frequency (n)	Percentage (%)
Source of information about COVID-19[§]		
Health professionals	629	39.8
Social media	1013	64.0
Mass media (TV. newspapers)	1078	68.1
Getting COVID-19		
Yes	7	0.4
No	1253	79.2
I don't know	322	20.4
Any confirmed cases of COVID-19 in neighborhood		
Yes	164	10.4
No	1418	89.6
Fear of losing loved ones due to COVID-19		
Yes	1405	88.8
No	177	11.2
Fear of COVID-19		
Low	230	14.5
Medium	373	23.6
High	979	61.9
Trust in the health system changed after COVID-19		
Changed positively	683	43.2
Changed negatively	109	6.9
Unchanged	790	49.9

[§] More than one option could be marked.

Table 5 shows the descriptive statistics of items of Fear Scale. The highest and lowest means of fear of COVID-19 were related to "When I think about COVID-19, I get upset" and "When I think about COVID-19, my heart beats faster" of the scale, respectively.

Table 5. Items of Fear Scale

Item	N	Min	Max	Mean	Std. Dev.
The thought of COVID-19 scares me.	1582	1	5	3.33	1.219
When I think about COVID-19, I feel nervous.	1582	1	5	3.13	1.395
When I think about COVID-19, I get upset.	1582	1	5	3.66	1.241
When I think about COVID-19, I get depressed.	1582	1	5	2.94	1.364
When I think about COVID-19, I get jittery.	1582	1	5	3.52	1.280
When I think about COVID-19, my heart beats faster.	1582	1	5	2.11	1.224
When I think about COVID-19, I feel uneasy.	1582	1	5	3.23	1.360
When I think about COVID-19, I feel anxious.	1582	1	5	3.35	1.306
Total of Fear Scale	1582	8	40	25.27	8.30

Table 6 presents the factors affecting the fear of COVID-19 in the participants. The table shows that there was a statistically significantly higher mean score of fear in participants living in Istanbul and Ankara, females between the ages of 35 and 65 years, those who do not have a good economic situation, those who are unemployed, who use mass media and social media as a source of information, those who are afraid of losing their loved ones, those with chronic diseases, those who have a poor general health status, those who do not exercise regularly, those who consume sufficient fruits and vegetables, those who do not have an ideal BMI, and those who have a negative change in their trust in the healthcare system ($p<0.05$).

Table 6. The Factors Affecting the Fear of COVID-19

	Mean	Standard Deviation	p
Living city			
İstanbul	25.15	8.00	
Ankara	25.61	8.43	0.031*
Others	23.94	8.23	
Age			
18-34	24.42	8.15	0.002*
35-65	25.72	8.33	
Gender			
Female	26.95	7.92	0.000*
Male	21.49	7.90	
Mass media			
No	23.98	8.58	0.000*
Yes	25.88	8.10	
Social media			
No	23.94	8.77	0.000*
Yes	26.02	7.93	
Fear of losing loved ones due to COVID-19			
Yes	26.28	7.84	0.000*
No	17.31	7.51	
Chronic disease			
Yes	26.59	8.18	0.001*
No	24.88	8.30	
Physical activity			
Not regularly	25.62	8.35	0.000*
Regularly	24.30	8.09	
Consumption of fruits and vegetables			
Inadequate	24.49	8.21	0.000*
Adequate	25.64	8.32	
Economic status			
Poor	25.89	8.28	0.001*
Good	24.49	8.27	
Employment status			
Not working	26.34	7.93	0.000*
Working	24.76	8.42	
Self-rated health			
Poor	29.29	5.95	
Moderate	26.18	8.17	0.000*
Good	23.17	8.26	
BMI			
Underweight (< 18.49)	26.91	7.37	
Normal weight (18.5 - 24.99)	24.60	8.24	0.000*
Overweight (>25)	26.20	8.65	
Trust in the health system changed after COVID-19			
Changed positively	25.9019	8.09460	
Changed negatively	26.3028	9.20397	0.004*
Unchanged	24.5975	8.31173	

*p<0.05

Table 7 shows the backward multiple regression model developed to determine the independent variables that affect the fear of COVID-19. It was determined that the independent variables in the model presented in Table 7 could explain about 22.2% of the change in fear of COVID-19 (indicated by the adjusted R^2 value). The model in Table 7 has shown that there was a statistically significant higher level of fear of COVID-19 in females (β= 2.613) compared to males, in those who use social media as a source of information (β= 1.693) compared to those who do not, those who have fear of losing their loved ones (β= 5.974) compared to those without a good economic situation (β= 1.276) compared to those with, those with a change in health system confidence after the COVID-19 pandemic (β= 1.489) compared to those without, those with moderate health status (β= 1.158) compared to those with good health status, and those with chronic diseases (β= 1.479) compared to those without ($p<0.05$) (Table 7).

Table 7. Multiple Regression Analysis Results for Independent Variables Associated with COVID-19 Fear

Score of COVID-19 Fear Scale	Beta	%95 Confidence Interval	p
Gender (Female)	2.613	2.059-3.317	0.000*
Social media (Yes)	1.693	1.551-1.873	0.002*
Fear of losing loved ones (Yes)	5.974	3.970-8.990	0.000*
Trust (Changed positively)	1.489	1.181-1.877	0.001*
Trust (Changed negatively)	1.418	0.902-2.227	0.130
Economic status (Poor)	1.276	1.018-1.599	0.035*
Self-rated health (Poor)	1.218	1.044-2.084	0.063
Self-rated health (Moderate)	1.158	1.031-1.790	0.025*
Chronic disease (Yes)	1.479	1.122-1.951	0.006*

*p<0.05

5. DISCUSSION AND CONCLUSION

This study aimed to determine the factors affecting the fear of COVID-19 in individuals living in Turkey and applied the online questionnaire form to 1582 adults selected by convenience sampling and snowball sampling methods. The most important results of the study can be summarized as follows.

The vast majority (61.9%) of the participants reported a "high" level of fear of transmission of the COVID-19 according to COVID-19 fear scale. The results of the studies conducted on Turkish population showed that fear levels of participants related to COVID-19 were found as high (Arısoy & Çay, 2021; Kalafatoğlu & Yam, 2021) such as in Iran (Ahorsu et al., 2020), in Bangladesh (Sakib et al., 2020), and in the Netherlands (Mertens et al., 2020). In the systematic review and meta-analysis study conducted by Luo et al. (2021), it was found that the highest means of fear of COVID-19 had been found in Asia continent. In addition, moderate level of fear found in Spain (Martínez et al., 2020), in Cuba (Broche-Pérez et al., 2020) and low level found in India (Doshi et al., 2020). According to Luo et al. (2021) the lowest means of fear had been found in Australia continent. The different results from studies could be explained by collecting the data at different times of pandemic and in places where government responses to COVID- 19 vary along with the nature of public information available about the infectious disease (Martínez-Lorca et al., 2020). A high level of fear can strongly shape the behavior of individuals. To reduce the destructive effects of this power, it may be possible to direct individuals to healthy lifestyle habits by shifting fear to more productive areas (Shultz et al., 2016).

Another important conclusion of the study is that gender is the only demographic factor that affects the fear of COVID-19, with the level of fear in females being 2.61 times higher than in males. Similarly, studies on the level of fear of different diseases have also found that females have a higher fear of a disease (Aksoy et al., 2021; Doshi et al., 2020; Kassim et al., 2021; Kessler et al., 2012; Yang et al., 2019) which is consistent with the results of our study.

The economic situation has been identified as a socioeconomic factor affecting the fear of COVID-19, with the likelihood of fear levels being 1.27 times higher in those with poor economic status compared to those with good economic status. There is a statistically significant, but not surprising difference in the level of fear arising from the economic situation, albeit not so high. In a study conducted in 2020, Pakpour and Griffiths noted that people

in many parts of the world, not only in low and middle-income countries, are concerned about their work (Pakpour & Griffiths, 2020).

Health-related factors affecting the fear of COVID-19 included the presence of chronic diseases and general health status. The likelihood of having a higher level of fear was 1.47 times higher in participants with chronic diseases compared to those without, and 1.15 times higher in those expressing a moderate health status than those expressing a good health status. Evidence that COVID-19 has a higher effect in individuals with chronic diseases explains the higher levels of fear in these individuals. Mamun (2021) showed that having chronic diseases were associated with a higher level of fear of COVID-19 in Bangladesh. Bitan et al. (2020) found that chronic illness was positively associated with fear of COVID-19 In Israeli population.

The use of social media, which is the second most preferred source of information by the participants, has also been found to affect the fear of COVID-19, and it has been found that users are 1.69 times more likely to have a higher level of fear than non-users. There is evidence that the dark side of social media and its tendency to spread false news increase depression, anxiety, and fear, thus affecting mental health (Cheung et al., 2008; Zandifar & Badrfam, 2020). The attribution of the first suicide case due to COVID-19 in India to sensational videos on social media (Goyal et al., 2020) supports the potential negative effects of social media on fear. Mamun (2021) found that sing social media as COVID-19 information source were associated with a higher level of fear of COVID-19 in Bangladesh. In future outbreaks, it is important that authorities / managers develop policies to increase public confidence and ensure that information about risks is based on real resources. As suggested by Goyal et al. (2020), algorithms can be developed to control the sources of unproven information on social media that cause fear among society. In addition, an open communication with regular and accurate updates on the outbreak can also be part of the policies to be implemented (Xiang et al., 2020).

Another factor associated with the fear of COVID-19 is the fear of the death of loved ones. The likelihood of higher levels of fear of transmission of the disease is 5.97 times higher in participants who fear the death of their loved ones from COVID-19 compared to those who do not. The study by Mertens et al. (2020) reported that concerns about the health of loved ones are the factor that has the highest impact on fear of COVID-19. Results of the study conducted in Poland showed that two hundred and eleven of participants (74.8%) feared the death of loved ones because of the COVID-19 (Gawrych et al., 2021).

Our results should be evaluated considering some limitations of our study. First, the cross-sectional study design only reveals the relationships between variables but does not provide a cause-effect relationship. Since the data collection tool in our study is based on personal statements, it should not be ignored that there may be bias in the answers given. Since our study uses the convenience sampling method, generalization of the results may cause false evaluations. Future research may consider the use of research designs aimed at examining the change in fear of COVID-19 over time and its effects on people's behavior. The global prevalence of COVID-19 offers a convenient area for comparisons between countries in studies. In addition, the effects of the measures implemented within the framework of pandemic management in countries, their content and timing on fear levels can be compared at the international level.

DECLARATION OF THE AUTHORS

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