

Prevalence and predictors of psychological response during immediate covid-19 pandemic

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Abstract

Purpose: COVID-19 pandemic has created a serious psychological impact worldwide since it has been declared. This study aims to investigate the level of psychological impacts of COVID-19 pandemic on Turkish population and to determine related factors. **Methods:** The study was carried out by using an online questionnaire using the virtual snowball sampling method. The sociodemographic data were collected on the following subjects: Participants' experience on any signs of infection within the last month, the history of COVID-19 contact-treatment-quarantine, level of compliance with precautionary measures, the sources of information and level of knowledge about the pandemic process and their belief levels on the knowledge they acquire. Besides, questions that take place in the depression, anxiety, stress scale (DASS-21), and impact of events scale (IESR) were asked. **Results:** Of the 3549 participants, anxiety was found in 15.8%, depression in 22.6%, stress in 12.9%, and psychological trauma in 20.29%. Female gender, young age, higher education level, being single, high monthly income, presence of psychiatric illness, a high number of people living together, having any signs of infection, and contact history with COVID-19 infected person or contaminated object are identified as risk factors that may increase psychological impact. Compliance with the rules was found to reduce the risk of psychological response. **Conclusions:** During the pandemic, reducing the spread of the virus and knowing the risk factors in protecting the mental health of individuals will be guided in determining the measures to be followed and the policies to be followed.

What's known

1. The covid-19 pandemic caused various problems related to viral infection, including the risk of death.
2. In addition, it caused different levels of psychological effects in individuals.

What's new

1. Risk factors causing psychological response such as sociodemographic variables, data on areas of concern, the level of compliance with precautionary measures, the participants' information source, the presence of

physical symptoms, were determined in detail within the same study.

2. Female gender, young age, higher education level, being single, high monthly income, presence of psychiatric illness, a high number of people living together, having any signs of infection, and contact history with COVID-19 infected person are identified as risk factors that may increase psychological impact.

3. Compliance with the rules was found to reduce the risk of psychological response.

1 INTRODUCTION

COVID-19 emerged as pneumonia of unknown etiology in a group of patients with a connection to the Huanan South China Seafood Market in Wuhan, China, in late 2019, and soon spread across the world.¹ Being much more widespread than Severe Acute Respiratory Disorder Syndrome (SARS) in 2002, and Middle East Respiratory Syndrome (MERS) in 2012,² COVID 19, which is considered as the most common viral epidemic of our time, has spread to more than 200 countries worldwide and has affected thousands of people since its inception. The number of reported cases increases every day and at the time of writing this study (03.06.2020), throughout the world the number of confirmed cases has reached the number of 6.194.533 and 376.320 people died.³

The outbreak not only increased the risk of death from a viral infection but also caused people to experience unbearable psychological pressures.⁴ Before the declaration of any confirmed cases in Turkey, images and videos which were spread via social media and TV news have created a panic in Turkey as well as all over the world. These images and videos displayed examples of abrupt falling and deaths of people in the middle of the street, patients' agony in quarantine, and experiences of confluence during strife with the prohibitions and restrictions, and the suffering of people who could not see the funerals of their relatives.

Following the announcement of the first coronavirus case on March 11th, 2020, urgent measures were taken in order to prevent an outbreak by the authorities in Turkey. Entries and exits to the country have been forbidden and quarantine obligation has been introduced for the citizens who come from abroad. Schools, including universities, were closed, flexible working opportunities were provided in many public institutions, and a social distance rule was established to minimize contamination. People over the age of 65 and under 20 have been imposed a curfew and in many provinces, the public has been made to comply with this regulation on weekends. Also, public meetings were postponed, intercity travel was stopped, and new rules have been introduced for public transportation, markets, shopping malls, etc. The minister of health shared the current information about the coronavirus cases with the community every day and gave information about the precautionary measures. However, despite all these precautions, thousands of people were infected and many of our citizens died.

Many factors such as persistence of the epidemic in the world, the lack of current treatment, and the uncertainty of the duration of the measures taken brought forward the risk of being affected psychologically. As a matter of fact, recent studies have shown that struggling with this uncertainty as well as the physical effect of the disease, economic-educational losses, etc. due to social isolation, may decrease the communication among people and increase the rates of depression and anxiety over time.⁴⁻⁷ Naturally, in an extraordinary situation like a pandemic, acute psychological exposure may be a foregone conclusion, but continuing the process may cause permanent psychological and biological effects. Therefore, while evaluating the pandemic, the detection of psychological problems, and related factors that may develop; it is important to determine the target audience, to take the necessary precautions, and to direct the aid. In the light of this information, in this study, it is aimed to determine the level of psychological impact and the factors that may be related to the COVID-19 outbreak in Turkish society where precautionary measures are still being implemented in the 6th week of the pandemic in the country.

2 METHODS

2.1 Participants and Study Protocol

This study is a cross-sectional study and has been approved by the ethics committee. This study was

conducted 6 weeks after the first COVID-19 case was officially announced. The individuals who were planned to participate in the study were determined by a virtual snowball sampling method and invited to participate in the web survey online. Data acquisition was stopped when the targeted sample size was reached within 5 consecutive days. A questionnaire consisting of 7 sub-units was sent to the participants. Section 1 of the questionnaire included sociodemographic features, section 2 included questions on the presence of symptoms for any infectious disease, contact with COVID-19, treatment, quarantine history, section 3 included questions on compliance with the measures taken (these questions were inspired by the 14 rules determined by the official authorities in our country), section 4 included questions on the source from which information about COVID-19 was acquired; level of knowledge, belief in the information received, health services and measures sufficiency level, level of belief in life chances. Section 5 included questions on anxiety associated with possible health and sociological losses of the pandemic. The 6th section consisted of DASS-21 related questions and section 7 consists of questions related to IES-R. DASS and IESR were used in previous pandemic studies.^{8,9} Data for individuals 18 and older who agree to participate voluntarily are included. Data of individuals with a history of bipolar disorder and/or psychotic disorder were not evaluated during the analysis phase.

2.2 Data Collection Tools

Depression Anxiety Stress-21 Scale (DASS-21)

In the study, DASS-21 was used to evaluate the current mental impact. DASS-21 is a short-form version of the original 42-item questionnaire designed as self-report.¹⁰ Its validity and reliability in Turkish were done by Sarıçam in 2018.¹¹ The scale consists of depression, anxiety, and stress subfields. In the depression subscale, 0-4 points are normal, 5-6 points are mild, 7-10 points are moderate, 11-13 points are severe, and [?]14 points are extremely severe. 0-3 points are normal in the anxiety subscale; 4-5 points mild, 6-7 points moderate, 8-9 points severe, [?]10 points extremely severe anxiety; in the stress subscale, 0-7 points are normal, 7-8 mild, 10-12 moderate, 13-16 severe, and [?] 17 express extremely severe stress.

Impact Scale of Events (IESR)

The scale which was originally named as Impact of Event Scale-Revised (IES-R)¹² was used to measure the psychological trauma caused by the COVID-19 outbreak in the study. The Turkish validity and reliability of this scale, which is widely used in daily clinical practice and studies to evaluate the severity of post-traumatic stress, was made by Corapcıoğlu et al in 2016.¹³ There are 22 questions divided into 3 subgroups (intrusive, avoidance, hyperarousal) on the scale where the severity of symptoms in the last 7 days is scored between 0-4. For the total IESR score, 0-23 is normal, 24-32 mild, 33-36 moderate, and [?]37 indicate severe psychological impact.

2.3 Statistical Analysis

The quantitative data used in the study were summarized as arithmetic mean \pm standard deviation and qualitative data as numbers (percent). As the four dependent variables in the study, DASS-21 anxiety, depression and stress subfields, and IES-R total scores were selected, and the related data were converted into binary categorical data according to the following criteria. A cut-off of the IES-R total score [?]33 was used to reflect moderate-to-severe impact.¹⁴ Similarly, individuals with a score of 7 and above in the depression subscale, 6 and above in the anxiety subscale, 10 or above in the stress subscale cut-off points were used to determine the moderate and above psychological influence reflected on DASS-21.⁸ Since the number of dependent variables is four, four different binary logistic regression models were applied to the data set. Before applying the related models, variable selection algorithms based on each dependent variable were applied to the data, and independent variables considered to have no contribution to modeling were removed from the data set. As a variable selection method, LASSO (Least absolute shrinkage and selection operator)¹⁵ logistic regression technique was applied. The goodness of fit and coefficients of the created models were evaluated by Hosmer-Lemeshow ($p > 0.05$) and Omnibus ($p < 0.05$) tests, respectively. In logistic regression models, significance level for model coefficients was determined as $p < 0.05$. In the analysis, "BKSY: Information Discovery Process Software" developed by Inonu University Faculty of Medicine Department of Biostatistics and Medical Informatics was used for the data analysis.¹⁶

3 RESULTS

3.1 The Relationship between Sociodemographic Variables and Psychological Response

The data obtained from 3549 people were included in the research. The average age of the participants was 38.8 \pm 10.9 years, 1389 (39.1%) were male and 2160 (60.9%) were female. The average age for women was 37.8 (\pm 11.1) years and the average age for men was 40.3 \pm 10.7 years. When DASS-21 scores of 3549 participants were evaluated; 200 (5.6%) individuals were extremely severe, 124 (3.5%) severe, 479 (13.5%) moderate, 416 (11.7%) mild, 2330 (65.7%) normal levels for depression subspace. For the anxiety subfield, 187 (5.3%) people were extremely severe, 127 (3.6%) people were severe, 246 (6.9%) were moderate, 385 (10.8%) were mild, and 2604 (73.4%) were normal. For the stress subfield 69 (1.9%) individuals were extremely severe, severe for 160 (4.5%) people, moderate for 220 (6.2%) people, mild for 279 (7.9%), and normal range for 2821 (79.5%). When IESR scores were evaluated; 552 (15.6%) people were in the severe range, 168 (4.7%) people were in the moderate range, 662 (18.7%) were mild and 2167 (61.1%) were in the normal range. The prevalence values for the moderate to extremely severe, while DASS-21 was 10.51% for anxiety, 16.99% for depression, and 10.71% for stress, the prevalence value for the for the moderate to extremely severe was 20.29% for IES-R.

Increasing age was associated with high depression ($p = 0.021$, OR = 0.985) and stress ($p = 0.015$, OR = 0.981) scores, but had no effect on anxiety and IES-R ($p > 0.05$). Being a woman generated more risk for anxiety, depression, stress and trauma. According to the level of education, being a university graduate reduces the risk of anxiety by 2.22 times ($p = 0.026$, OR = 0.451) and the risk of depression approximately 2.02 ($p = 0.04$, OR = 0.495) times compared to primary school graduates. Being secondary and high school graduate did not make any difference compared to being a primary school graduate ($p > 0.05$).

Being married reduced the risk of developing stress 1.739 times compared to being single ($p = 0.002$, OR = 0.575). Unemployment, according to other occupational categories; the existence of health insurance did not affect the DASS-21 and IES-R scores according compared to its absence ($p > 0.05$ for all subdomains). Having income above the minimum wage significantly contributed to the development of stress. The most risky group for the development of stress was those with the income level of 10,000 TL and above ($p = 0.003$, OR = 2.029). As the number of people living at home increased, the risk of developing stress increased. The fact that the number of people living at home was 5 and above posed a high risk for stress ($p = 0.003$, OR = 2.476). The presence of individuals over 65 years old at home did not cause any psychological response ($p = 0.247$, OR = 0.807). The presence of psychiatric illness in the individual was significantly associated with high DASS-21 and IES-R scores.

Having a history of psychiatric illness increased the risk of developing anxiety 2.5 times ($p < 0.001$, OR = 2.426), increased the risk of developing depression 2.3 times ($p < 0.001$; OR = 2.297), increased the risk of developing stress 2.2 times ($p < 0.001$, OR = 2.224). It was observed that it increased the risk of developing trauma approximately 2 times ($p < 0.001$, OR = 2.034). The presence of chronic illness in the family and smoking did not have any effect on the development of depression, anxiety, and trauma ($p > 0.05$ for all areas). Data related to the relationship between sociodemographic variables and DASS-21 and IES-R are given in Table 1.

3.2 The Relationship between Participants' History of Contact and Treatment with COVID-19 within the Last Month and Their Psychological Response Levels

538 (15.2%) of the participants had a history of meeting with someone diagnosed with COVID-19 and 159 (4.5%) had a history of contact with an individual with suspected COVID-19 or contaminated materials. 206 (5.8%) of the individuals were tested for COVID-19 in the last month, 80 (2.3%) were quarantined, and 30 (0.8%) were treated. 1637 (46.1%) people stated that they did not know about their contact history with an individual/object contaminated with COVID-19. The presence of a history of contact with a COVID-19 had a 2.3-times increase in the risk of anxiety ($p < 0.001$, OR = 2.297), and 1.43 times enhancing effect in the risk of depression ($p = 0.029$, OR = 1.428). Having a contact history with contact with an individual with suspected COVID-19 or infected materials, increased the risk for depression 2 times ($p < 0.004$, OR = 2.005),

1.84 times for stress ($p = 0.028$, $OR = 1.838$) and 1.77 times ($p = 0.013$, $OR = 1.773$) had an enhancing effect for IES-R. The test history for COVID-19 had a 1.62 times protective effect on trauma formation ($p = 0.035$, $OR = 0.617$). Although quarantine status had a protective effect on anxiety and stress, it had 2.35 times risk-reducing effects for anxiety and 2.99 times for stress ($p = 0.027$, $OR = 0.424$, $p = 0.016$, $OR = 0.334$, respectively). Treatment with COVID-19 did not affect psychological impact. Data related to the participants' history of contact and treatment with COVID-19 within the last month and their psychological response levels are shown in Table 2.

3.3 The Relationship between the Presence of Physical Symptoms within the Last Month and Psychological Response Levels

When the participants were questioned whether they had experienced any / several of the symptoms of fever, cough, sore throat, shortness of breath, chest pain, headache, runny nose, muscle pain, diarrhea, nausea in the past 1 month; 302 (8.5%) for fever, 880 (24.8%) for cough, 1248 (35.2%) for sore throat, 390 (11%) for shortness of breath, 404 (11.4%) for chest pain, 1953 (55%) for headache, 1057 (29.8%) for rhinorrhea, 1300 (36.6%) for myalgia, 602 (17%) for diarrhea, 558 (15.7%) for nausea answered positive (i.e., presence). The three most common symptoms were headache, myalgia, and sore throat, respectively.

In the analysis made, different symptoms caused different levels of psychological response. The presence of fever in the last 1 month had an enhancing effect on the development of anxiety ($p < 0.001$, $OR = 2.193$) and stress ($p = 0.013$, $OR = 1.572$). Sore throat was associated with high anxiety and IES-R ($p = 0.049$, $OR = 1.282$, $p = 0.016$, $OR = 1.431$, respectively). Chest pain had an effect on increasing the risk for anxiety ($p < 0.001$, $OR = 2.269$) and trauma ($p = 0.049$, $OR = 1.34$). Shortness of breath had an increasing effect on the risk of experiencing anxiety ($p < 0.001$, $OR = 2.286$) and depression ($p = 0.016$, $OR = 1.431$). Headache, rhinorrhea, diarrhea, cough did not pose a risk in psychological response. Nausea increased the risk of developing anxiety and stress by 1.37 and 1.489 times, respectively, compared to those who did not have nausea ($p = 0.028$, $OR = 1.37$; $p = 0.007$, $OR = 1.489$). The relationship between the presence of physical symptoms and psychological responses in the last 1 month is given in Table 3.

3.4 The Relationship between Participants' Source of Information, Level of Belief in Knowledge and Their Level of Psychological Response on COVID-19 Pandemic

1797 (50.6%) participants stated that they received information about COVID-19 most frequently from TV/radio. When the participants are evaluated in terms of knowledge level, source, and belief level from which the information is obtained; these variables had no effect on psychological response ($p > 0.05$ for all areas). The presence of chronic illness in the family and smoking did not have any effect on the development of depression, anxiety, and trauma ($p > 0.05$ for all areas). The belief in finding the measures efficiently reduced the risk of depression by 1.386 times ($p = 0.041$, $OR = 0.721$). In addition, compared to those who did not have the idea of finding a high chance of survival, it had a reducing effect on depression 1.68 times ($p = 0.003$, $OR = 0.594$). The relationship between the sources of information, its level, belief in knowledge, and psychological response is given in Table 4.

3.5 The Relationship between the Level of Compliance with Precautionary Measures and Psychological Response Levels

The number of people who comply with precautionary measures; 3357 (94.6%) for hand washing with soap, 3447 (97.1%) for closing the mouth and nose during coughing or sneezing, 3190 (89.9%) for canceling international travel plans, paying attention to social distance, 3059 (86.2%) for wearing a mask while going out with or without symptoms, 3362 (94.7%) for ventilation of the environment frequently, 2449 (69%) for cleaning the frequently used surfaces with water and detergent, 1976 (55.7%) for separating personal belongings, 2401 (67.7%) for washing clothes at high temperature 2275 (64.1%) for at least 8 hours of sleep, 2052 (57.8%) for at least 2 liters of fluid per day and balanced nutrition was and the curfew was 2980 (84%).

While frequent ventilation in the environment had a reducing effect on the anxiety level of approximately 1,577 times ($p = 0.047$, $OR = 0.634$), separating personal items and doing regular sports decreased the risk of

depression ($p < 0.001$, $OR = 0.626$) by 1.59 times. Sleeping at least 8 hours a day, at least 2 liters of water consumption and balanced nutrition had a risk-reducing effect in all areas ($p < 0.05$). Compliance with the curfew reduced the risk of trauma by 1.34 times ($p = 0.01$, $OR = 0.745$). The relationship between the compliance level of the participants and the psychological response is given in Table 5.

3.6 The Relationship between Data on Areas of Concern and Psychological Response Levels

While 236 (6.6%) of the individuals stated that they did not have anxiety and the pandemic was exaggerated, the remaining 3313 participants (93.4%) stated that they experienced more or less anxiety. Participants were most concerned about the health of their families and relatives (82.4%). Considering the distribution of concerns according to age groups, 63.46% ($n = 331$) of the people between the ages of 18-25 were experiencing academic anxiety mostly. While 60.4% ($n = 539$) of the people between the ages of 26-35 were worried about the other people, the object of the anxiety of the individuals of 36 years old and above was based on the health of their families and relatives. The group with the most common economic anxiety was those with monthly income between 2500-5000 TL ($n = 463$, 46.3%). 536 (54.5%) of 983 people with chronic diseases were worried about taking the medications that they should use regularly.

The anxiety of one's health had an enhancing effect by 1.56 times ($p < 0.001$, $OR = 1.565$) for anxiety and 1.49 times for trauma ($p < 0.001$, $OR = 1.49$). Anxiety for the health of relatives increased the stress level by about 1.99 times ($p = 0.01$, $OR = 1.992$). Experiencing economic anxiety had a 1.25 times increasing effect on trauma formation ($p = 0.042$, $OR = 1.254$). While experiencing academic anxiety only had 1.30 times increasing effect on the risk of depression ($p = 0.028$, $OR = 1.305$), the anxiety that treatment of the disease could not be found and safety anxiety was a risk-increasing factor in all areas of psychological response ($p < 0.001$). Experiencing anxiety while taking medications that should be used regularly increased 1.75 times the risk of anxiety ($p = 0.02$, $OR = 1.755$) had an enhancing effect. Experiencing fear of going to health controls had an enhancing effect by 1.39 times ($p = 0.003$, $OR = 1.39$) for depression, 1.363 times ($p = 0.025$, $OR = 1.363$) for stress and 1.269 times ($p = 0.031$, $OR = 1.269$) for trauma. The relationship between the areas of concern and the level of psychological response is given in Table 6.

4 DISCUSSION

This study provides important data regarding the impact of the pandemic in Turkey. First of all, it was detected that the society was significantly affected by the pandemic. Among the participants in the study; based on moderate and above psychological effects, anxiety was found in 15.8%, depression in 22.6%, stress in 12.9%, and trauma in 20.29%. In a study by the American Psychiatric Association, it was stated that the COVID-19 epidemic caused anxiety in 50% of the society and more than one-third felt that their mental health was seriously affected.¹⁷ In the study conducted by Wang et al in the normal population in the second week of the pandemic, it was observed that 53.8% of the participants had a psychological response, 16.5% with depression, 28.8% with anxiety, and 8.1% with high stress.⁸ Although the data obtained were close to the rates determined in China, they differed in terms of low IES-R rates. This result is probably related to the reduction of the acute effect of the pandemic in the community since the study was performed at the 6th week of the epidemic. On the other hand, the fact that Turkey was not one of the first countries experiencing the outbreak, and had time to establish certain infrastructure related to the outbreak may be associated with lower trauma scores. However, since there is no previous study in our country, such a comparison is not possible to be made.

Epidemiological studies on epidemics or disasters have shown that sociodemographic variables are associated with different levels of psychological response. Women,¹⁸⁻²⁰ young people,²¹ people with higher education,²² health workers,²³ students,²⁴ those with low economic income,²⁵ people with or without a history of any disease²⁶ and smokers²⁷ are emphasized in the literature for having higher rates of psychological response.

In our study, in accordance with the literature, young age, being single, an excessive number of people living together, presence of psychiatric disease history, and female gender were identified as higher risk conditions in terms of high psychological response. However, contrary to the literature, high education levels significantly reduced the risk of anxiety and depression, while smoking, lack of health insurance, or low level of economic

income were not associated with psychological exposure. This result may be due to the effects of cultural and/or religious differences among communities on human behavior and perceptions.

While studies in the literature have shown that societies use the internet and social media as a general information source and the posts here play a role in psychological influence.^{6,28} In our study, it was seen that most of the participants use television/radio as a source of information and this fact is not related to psychological influence. Although Turkish society has high levels of internet usage, the fact that the main source of information is expressed as TV/radio may be due to the low belief in the news on the internet. On the other hand, the feeling of trust towards TV may be resulted from the fact of authorized institutions' regular and effective TV use during the pandemic. As a matter of fact, the high degree of satisfaction and belief in the information obtained supports this relationship.

Another conclusion drawn from our study is; although very few of the participants were diagnosed with COVID-19, contrary to the literature,²⁹ interestingly, it has been found that being treated for COVID-19 infection is not related to psychological affect. Moreover, being quarantined and having a test reduced the level of psychological response.

On the other hand, although there was no diagnosis of COVID-19, the presence of symptoms suggestive of any infection, and a history of contact with an individual or object infected with COVID-19 were also factors that increased the risk of psychological response in individuals. This result seems to be a reflection of the anxiety developed in accordance with the nature of "uncertainty". In the literature, "uncertainty" is accepted as causing a series of cognitive, emotional, and behavioral damage in the process of time. It is also considered as a "basic component of all anxiety disorders" which reduces problem-solving ability.³⁰ Accordingly, taking precautions such as regular sharing of information that will eliminate this uncertainty during the days of pandemic intensification, dissemination of diagnostic tests can contribute positively to the mental health of the society.

According to previous studies, despite social differences, there is a relationship between compliance with the measures taken and psychological impact.²³ In the study of Wang et al., compliance with precautionary measures has been shown to reduce the psychological response.⁸ In our study which is consistent with the literature, it was found that the majority of the participants to be complying with the measures taken although Turkish society has been facing such a pandemic for the first time in its history. It has been also remarkable that people's adaptation with the rules to have a positive effect on psychological response. It is an expected result for a society in which people state that they pay more attention to the health of their relatives rather than their own and that they do not feel psychologically uncomfortable. In addition, it has been observed that regular exercise, a balanced diet, and attention to sleep patterns are protective factors in psychological response. However, it was found that most of the participants complied with these measures at a lower rate. Therefore, raising awareness of the society for these measures which are effective in psychological and biological empowerment seems to provide significant benefits in combating pandemics.

When the areas where the participants are concerned are evaluated, similar to previous pandemic studies,³¹ the first 3 places respectively were the health of family and relatives, anxiety to infect others, and going to health controls. However, it was seen that the characteristics of the individuals during the pandemic caused anxiety about different issues. For example, academic anxiety was the primary concern among young people aged 18-25. The individuals with the most economic concerns were those with a monthly income of 2500-5000 TL and university graduates. A remarkable result here was that people's anxiety about taking medications that they had to take constantly increased their stress levels by 75.5%. Biologically at risk of further damage than COVID-19³² this anxiety of the people is an important situation in terms of disruption of the treatments and subsequent serious health problems. Unfortunately, our study on why people bear this concern has not been able to provide a clear explanation. However, in our opinion, presenting information that has not been confirmed about whether or not some drugs can be taken in the media seems to cause more confusion and anxiety. Therefore, preventing information pollution about COVID-19 and making necessary explanations to these people at risk, will contribute to the reduction of anxiety levels, and it seems to contribute positively to the lives of these people with physical illness.

Limitations and Conclusion

Although this study has reached a relatively high sample size from different strata of the society, inviting participants to the study in an electronic environment has prevented those who do not have this opportunity and those who do not read or speak Turkish. Therefore, the results may not reflect the general population. In addition, due to the cross-sectional type of research, its place in the determination of psychological effects in the long term is limited. This indicates that follow-up studies are needed to determine the long-term effects of the pandemic.

Despite all these limitations, our study provides important data in terms of determining the changes in the mental health of society and related factors. These outcomes can guide in determining and directing the measures to be taken now and in the future.

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