



The State-Trait and Death Anxiety of Turkish Society During The COVID-19 Pandemic

COVID-19 Pandemisi Sırasında Türk Toplumunun Durumluk-Süreklilik ve Ölüm Kaygısı

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Abstract

Introduction: The novel coronavirus disease (COVID-19) quickly spread all over the world and caused many deaths in Türkiye as in the whole world. COVID-19 is potentially lethal and effects the mental health of people. It is important to detect the potential psychological changes in a timely manner during pandemic. We aimed to determine the anxiety levels and associated risk factors of the society during COVID-19 in Türkiye.

Material and Method: This was a cross-sectional study conducted throughout Türkiye during the pandemic. The questionnaires were delivered to the participants via Google Forms which contain three main parts: 1) Demographics, 2) State-Trait Anxiety Inventory (STAI), and 3) Thorson-Powell's Revised Death Anxiety Scale (RDAS). The questionnaire was first published on April 15, 2020, and data were collected for a period of 30 days.

Results: 8,917 questionnaire forms filled out by Turkish society were included in the study. The anxiety level and fear of death were higher in olders, females, parents, smokers, people who have comorbidities, social media users, and people who have higher education levels.

Conclusion: In our study, It was determined that COVID-19 has negatively affected the mental health of the population by increasing the anxiety levels and fear of death in Türkiye. People who have higher anxiety levels and fear of death should be identified, and psychological support should be provided to these people.

Keywords: COVID-19, mental health, Turkish society, state-trait anxiety inventory, Thorson-Powell's revised death anxiety scale

Öz

Giriş: Yeni koronavirüs hastalığı (COVID-19) tüm dünyaya hızla yayılarak tüm dünyada olduğu gibi Türkiye'de de çok sayıda ölüme neden olmuştur. COVID-19 potansiyel olarak öldürücüdür ve insanların ruh sağlığını etkiler. Potansiyel psikolojik sorunları tespit etmek önemlidir. Türkiye'de COVID-19 sürecinde toplumun kaygı düzeylerini ve ilişkili risk faktörlerini belirlemeyi amaçladık.

Gereç ve Yöntem: Bu, pandemi döneminde Türkiye genelinde yapılmış kesitsel bir çalışmadır. Anketler katılımcılara üç ana bölümden oluşan Google Formlar aracılığıyla iletildi: 1) Demografi, 2) Durumluk-Süreklilik Kaygı Envanteri (STAI) ve 3) Thorson-Powell'in Gözden Geçirilmiş Ölüm Kaygısı Ölçeği (RDAS). Anket ilk olarak 15 Nisan 2020 tarihinde yayınlanmış ve 30 günlük bir süre boyunca veriler toplanmıştır.

Bulgular: Türk toplumu tarafından doldurulan 8.917 anket formu çalışmaya dahil edildi. Yaşlılarda, kadınlarda, annelilerde, sigara içenlerde, ek hastalığı olanlarda, sosyal medya kullananlarda ve eğitim düzeyi yüksek olanlarda kaygı düzeyi ve ölüm korkusu daha yüksekti.

Sonuç: Çalışmamızda, COVID-19'un Türkiye'de kaygı düzeylerini ve ölüm korkusunu artırarak nüfusun ruh sağlığını olumsuz yönde etkilediği belirlendi. Kaygı düzeyi ve ölüm korkusu yüksek olan kişiler belirlenmeli ve bu kişilere psikolojik destek sağlanmalıdır.

Anahtar Kelimeler: COVID-19, akıl sağlığı, Türk toplumu, durumluk-süreklilik kaygı envanteri, Thorson-Powell'in gözden geçirilmiş ölüm kaygısı ölçeği



INTRODUCTION

SARS-CoV-2 is a disease that is primarily transmitted via droplets and direct contact with contaminated surfaces has high morbidity and is potentially lethal.^[1-3] After The World Health Organization declared COVID-19 a pandemic, this declaration has caused universal concern and affected the mental health of people.^[4] Faced with a potential threat of illness, people tend to develop self-protective behaviors.^[5] According to the behavioral immune system theory, people are likely to develop negative mental assessments and emotions to protect themselves.^[6,7] Furthermore, epidemics trigger these negative mental assessments and emotions.^[8,9]

Negative emotions can lead to a decline in the immune function of people and disrupt normal physiological mechanisms.^[10] People can overreact to any disease in cases where they do not receive adequate psychological support.^[5,9] Therefore, it is important to detect the potential psychological changes caused by COVID-19 in a timely manner. Determination of the anxiety level in the society can play an important role in ensuring a preventive approach and providing appropriate treatments for people under risk.

This study aimed to determine the anxiety levels and associated risk factors of the society during COVID-19 in Türkiye.

MATERIAL AND METHOD

This was a cross-sectional study conducted throughout Türkiye during the pandemic. The study was conducted in compliance with the Declaration of Helsinki and approved by Aksaray University School of Medicine, Aksaray Education and Research Hospital Scientific Research Evaluation Committee with decision no: 2020/03-48.

A self-report questionnaire designed via Google forms which is written in Turkish and contains three main parts: 1) Demographics (age, gender, marital status, having children or not, education level, social media use, smoking habit, and comorbid diseases), 2) State-Trait Anxiety Inventory (STAI), 3) Thorson–Powell’s Revised Death Anxiety Scale (RDAS). Data collection began on April 15, 2020, and continued for one month. The questionnaire did not include personal information such as name, phone number, or e-mail. Participants under the age of 18 years and those who had known psychiatric diseases prior to the pandemic were excluded from the study.

Scales Used

STAI consists of two parts, each of which comprises 20 questions: the state anxiety subscale (STAI-S) measures anxiety at a given time, while the trait anxiety subscale (STAI-T) measures long-term anxiety levels. All items are scored using the 4-point Likert-type scale. There are ten reverse-scored statements on STAI-S and seven on STAI-T. During the evaluation process, each statement is scored between 1 and 4 points depending on the selected option

such that the score is either negative (thereby reducing the total anxiety score) or positive (thereby increasing the total anxiety score) according to the selected option. To calculate the final score, 50 points as a fixed value are added to the obtained STAI-S score and 35 points to the continuous anxiety subscale score. The resulting value indicates the individual’s anxiety score. Accordingly, the highest value was 80 and the lowest value was 20. Thus, a score of 20–35 points indicates a low level of anxiety, 36–41 points a moderate level of anxiety, and 42–80 points a high level of anxiety.^[11,12]

RDAS was developed by Thorson and Powell.^[13] It includes 25 items: 17 are statements such as “Coffins distress me” and 8 are negative statements such as “I don’t worry about being in a state of insolvency forever.” These items are rated on a 5-point Likert-type scale from 0 to 4. In negative statements, the Likert scale is reversed from 4 to 0. The total score can be a minimum of 0 and maximum of 100. Higher points indicate higher death anxiety. This scale was translated into Turkish, and its validity and reliability study was conducted by Karaca and Yıldız.^[14]

Statistical Analysis

Data were analyzed using SPSS version 22.0. Visual (histogram and probability graphs) and analytical methods (Kolmogorov–Smirnov test) were used to determine if the variables showed normal distribution. Descriptive analyses were expressed as means±standard deviation for variables showing normal distribution and as median and interquartile range (IQR) for non-normally distributed variables. Student’s t-test for continuous variables was used in comparisons between the two groups.

The STAI-S, STAI-T, and RDAS values were normally distributed. The student’s t-test was used to compare groups with two categories and the one-way analysis of variance to compare groups consisting of three or more categories (age and education level). P-values of <0.05 indicated statistical significance. Binary post hoc comparisons were performed using the Tukey test.

RESULTS

After 30 days, 9,860 questionnaire forms were completed online. Of these, 835 participants who were aged <18 years and 108 participants who had a known psychiatric disease were excluded from the study. Thus, 8,917 questionnaire forms were included in the study. Of the participants, 52.6% (n=4,694) were female and 47.4% (n=4,223) were male. The median age was 35 (IQR: 13, range: 18–72) years. The majority of the participants (n=8,058, 90.4%) used social media, and 1,523 (17.1%) had comorbid diseases. The participants’ demographic data are summarized in **Table 1**. The STAI-S, STAI-T, and RDAS scores of the participants were 45.75±4.6, 41.08±4.7, and 53.78±15.9, respectively. State anxiety and fear of death (STAI-S=46.64±4.4,

RDAS=54.34±14.5) were significantly higher in women than in men ($p < 0.001$). There was no significant difference between men and women in terms of STAI-T scores ($p=0.09$). The level of anxiety and fear of death in parents were significantly higher than those who had no children (STAI-S, $p=0.029$; STAI-T, $p < 0.001$; RDAS, $p < 0.001$). The relationship between the sociodemographic characteristics and the scores is shown in **Table 2**.

Table 1. Socio-demographic characteristics of study participants	
Number of participants	8917 (100)
Age, median (IQR)	35 (13)
Age group	
18-30	2978 (33.4)
31-50	5169 (58)
51-64	674 (7.6)
≥65	96 (1.1)
Gender	
Female	4694 (52.6)
Male	4223 (47.4)
Education level	
Primary school	791 (8.9)
High school	3318 (37.2)
University	4808 (53.9)
Marital status	
Married	5515 (61.8)
Single	3402 (38.2)
Do you have a child?	
Yes	5061 (56.8)
No	3856 (43.2)
Smoking status	
Smoker	3344 (37.5)
Non-smoker	5573 (62.5)
Chronic medical condition	
Yes	1523 (17.1)
No	7394 (82.9)
Use of social media	
Yes	8058 (90.4)
No	859 (9.6)

Data were presented as n (%) except age.

The STAI-S, STAI-T, and RDAS scores were significantly different between the age groups ($p < 0.001$). According to the Tukey post hoc subgroup analysis, this difference was found to be attributable to the difference between the ≥65 years age group and other groups ($p < 0.001$; **Table 3**).

Table 3. Comparison of STAI-S, STAI-T and RDAS scores between age groups					
	18-30	31-50	51-64	≥65	P value
STAI-S	45.94±5.2	45.57±4.2	45.6±3.1	50.98±5.4	<0.001
STAI-T	41.45±5.1	40.9±4.5	40.04±4	46.75±4.9	<0.001
RDAS	50.82±16.6	54.9±15.4	56.48±14.3	63.86±15.8	<0.001

Data were presented as mean±SD. STAI-S: State-Trait Anxiety Inventory-State, STAI-T: State-Trait Anxiety Inventory- Trait, RDAS: Thorson-Powell's Revised Death Anxiety Scale

There were statistically significant differences among the STAI-S, STAI-T, and RDAS scores in terms of their education levels. The Tukey post hoc subgroup analysis showed that all groups were statistically different in all three scores ($p < 0.05$). The post hoc analysis results were also consistent with error bar graphs (**Figure 1**).

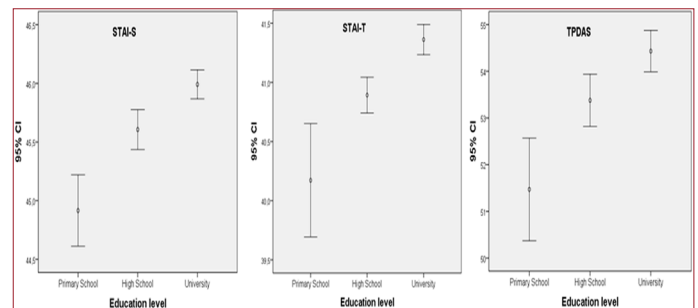


Figure 1. The post hoc analysis results were also consistent with error bar graphs

Table 2. Comparison of STAI-S, STAI-T and RDAS scores between demographic groups									
	STAI-S			STAI-T			RDAS		
	mean±SD	P value	t	mean±SD	P value	t	mean±SD	P value	t
Gender									
Female	46.64±4.4	<0.001	-19.445	41±4.7	0.09	1.697	54.34±14.5	<0.001	-3.548
Male	44.77±4.5			41.17±4.74			53.14±17.3		
Marital status									
Married	45.68±4.1	0.073	1.885	41.13±4.7	0.263	-1.12	54.03±15.6	0.061	-1.893
Single	45.87±5.2			41.01±4.7			53.37±16.4		
Do you have a child?									
Yes	45.85±3.9	0.029	-2.28	41.24±4.5	<0.001	-3.625	54.31±15.7	<0.001	-3.629
No	45.62±5.3			40.87±5			53.07±16.2		
Smoking habit									
Smoker	45.86±5.1	0.109	1.672	40.79±4.7	<0.001	-4.474	54.26±16.9	0.029	2.241
Non-smoker	45.69±4.2			41.26±4.7			53.48±15.3		
Comorbid disease									
Yes	47.23±4.1	<0.001	-13.89	41.28±4.5	0.071	-1.807	55.76±16.7	<0.001	-5.337
No	45.45±4.6			41.04±4.8			53.37±15.7		
Social media use									
Yes	45.82±4.5	<0.001	-4.009	41.12±4.6	0.072	-2.198	53.91±15.5	0.04	-2.477
No	45.15±5.2			40.74±5.9			52.49±19.5		

STAI-S: State-Trait Anxiety Inventory-State, STAI-T: State-Trait Anxiety Inventory- Trait, RDAS: Thorson-Powell's Revised Death Anxiety Scale

DISCUSSION

This study was designed to examine the state-trait and death anxiety levels among the Türkiye community. The results of this study have confirmed that COVID-19 affected mental health by increasing state-trait and death anxiety in Türkiye as in the whole world. The anxiety level and fear of death were higher in elders, females, parents, smokers, people who have comorbidities, social media users, and people who have higher education levels.

It is known that the anxiety level of the community increases during epidemics.^[8,15] A study conducted one year after the SARS epidemic reported that stress levels increased rather than decreased over time, and worryingly high levels of depression, anxiety, and post-traumatic stress disorder were observed.^[16] The COVID-19 pandemic has caused psychological problems across the world.^[17-19] Qiu et al. reported that 35% of the Chinese population had psychological problems.^[20] A study conducted in the United States reported that more than half of the participants exhibited depressive symptoms and more than 25% exhibited signs of moderate and severe anxiety.^[18] Moreover, the implementation of unprecedented strict quarantine measures has led to a gradual alienation of and lack of communication among people, and indirectly, to depression.^[20,21] The high infection risk of COVID-19 and its high mortality rate within a short duration suggests that the level of anxiety increased more than that during previous epidemics. The high STAI-S, STAI-T, and RDAS scores obtained in the present study also support this notion.

Previous studies indicated differences between men and women in terms of risk perception during epidemics.^[22,23] This was further corroborated by studies conducted during the COVID-19 pandemic, and women who had higher anxiety and stress levels were shown to be more prone to depression than men.^[24-26] Similar to the findings in the literature, the present study found that the anxiety levels and fear of death were significantly higher in women than in men. These results confirm the fact that women perceive the disease to be more contagious and deadly.

It is known that people have increased anxiety levels during epidemics because of the possibility of them transmitting the disease to their families and loved ones.^[22,23,27] A study conducted in our country demonstrated that people who lived with their family had a higher level of depression and anxiety than those who lived alone.^[25] A Germany-based study reported that having a child is a factor that plays a role in the increased anxiety and depression experienced during the pandemic.^[28] In the present study, the anxiety level and fear of death of parents were significantly higher than those without children. However, there was no such relationship between being married or unmarried. This may be due to that the married participants did not have any children yet.

Health awareness increases with the education level. Awareness of the transmission risk as well as the seriousness

of the measures taken ensures a better understanding of the possible consequences. A study in Türkiye showed that university graduates had the highest levels of anxiety and depression.^[25] Roberts et al. reported that people with a high education level had higher health awareness and were prone to experience higher levels of anxiety and stress during the pandemic.^[29] In the present study, all three scores increased in parallel with the level of education, and participants who were university graduates experienced serious anxiety and fear of death.

Studies conducted during the pandemic reported that younger people had a higher level of anxiety and stress.^[24,25,29,30] This may be due to the fact that young participants who used social media more actively were affected by negative news that could provoke depression. In the present study, we did not observe higher levels of anxiety and fear of death in social media users. However, in contrast with the literature, anxiety levels and fear of death were significantly higher in elderly people than in young. The main reason for this may be the fact that COVID-19 has a poorer prognosis in the elderly and in people with comorbid diseases while it is mostly asymptomatic in young people. In addition, the curfew that was implemented for more than 3 months for people older than 65 years in Türkiye may be contributed to this outcome.

Limitations

Our study has some limitations. i) This questionnaire was conducted online to prevent the transmission of COVID-19 and to reach a higher number of participants. Therefore, the number of older people in this study was limited compared to the number of older people in the population. Considering that the anxiety level and fear of death were higher in older people, the small number of older people included may have affected our results. ii) The participants may have given inaccurate answers to complete the questionnaire in a shorter period of time, and this may have affected the outcomes of the present study. iii) Due to the cross-sectional nature of the study and the use of a self-report scale, the entire society could not be represented homogeneously.

CONCLUSION

The present study is the most comprehensive study conducted in Türkiye in terms of the number of participants and sheds light on the anxiety levels of Turkish society during the pandemic. It was determined that COVID-19 has negatively affected the mental health of the population by increasing the anxiety levels and fear of death in Türkiye. People who have higher anxiety levels and fear of death should be identified, and psychological support should be provided to these people.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was approved by Aksaray University School of Medicine, Aksaray Education and Research Hospital Scientific Research Evaluation Committee with decision no: 2020/03-48.

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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