Evaluation of the Anxiety Status of the Individuals in the COVID-19 Testing Process

Sibel Dogan[1], Fatima Ozdemir Sigva[2], Ali Timucin Atayoglu[3]*

1 Istanbul Medipol University, Faculty of Health Sciences, Department of Nursing, Istanbul, TR
2 Mardin Training and Research Hospital, Community Mental Health Unit, Mardin, TR
3 Istanbul Medipol University, International School of Medicine, Department of Family Medicine, Istanbul, TR

* **Corresponding Author:** Ali Timuçin Atayoglu **E-mail:** atatayoglu@medipol.edu.tr

ABSTRACT

Objective: The coronavirus disease (COVID-19) pandemic has been stressful for individuals and societies. This study aimed to assess the individuals' anxiety status in the COVID-19 testing process.

Material and Methods: This research is a descriptive study. The study was conducted within the COVID-19 testing process. Questionnaire form and State-Trait Anxiety Inventory were used as data collection tools through a face-to-face interview with a psychiatric nurse before the COVID-19 testing.

Results: In total, 296 individuals participated in the study. Among the participants and the family members they live with, the rate of individuals with chronic diseases were 18.9% and 24.3%, respectively. Of the participants, 22.3% had a family member with a positive COVID-19 test. The mean State-Trait Anxiety Inventory score of the participants in the study was 46.58±10.71 (40-59 points: moderate anxiety). The mean anxiety score was significantly elevated in individuals who were female, had a chronic illness, had a family member with a chronic condition, had a family member who had tested positive for COVID-19, and had a spouse who had tested positive for COVID-19 ($p < 0.05$).

Conclusion: It is essential to raise awareness among healthcare professionals about common psychological complaints such as anxiety during pandemics, and to provide biopsychosocial monitoring to individuals by teams including family physicians and psychiatric nurses with a holistic health approach.

Keywords: COVID-19, pandemic, anxiety, family physician, nurse, biopsychosocial, holistic health.

INTRODUCTION

The pandemics may cause devastating psychosocial health concerns (1). Fear of infection, suffering, and demiss for oneself and for loved ones, and sadness after bereavement may lead to severe distress (1). Factors such as uncertainty, life style changes, altered routines, financial worries, social isolation, and loneliness have also all been cited as stressors. The psychological effects of the pandemic may be noticeable, more extensive, more widespread, and longer lasting than the purely somatic effects of the infection (1,2). Previous infectious outbreaks revealed the severity of emotional distress (1,2)

World Health Organization has recognized the impact of COVID-19 pandemic on mental health (3). World Health Assembly adopted the updated Comprehensive Mental Health Action Plan 2013-2030, which includes an indicator on preparedness for mental health and psychosocial support in such public health emergencies (4). Fear, worry, and disstress are normal responses to threats, hence, it is understandable that people are experiencing anxiety in the context of the COVID-19 pandemic (1-4).

Anxiety is a future-oriented unpleasant, and negative mental state induced by potential threats (5). While anxiety response typically serves an adaptive purpose, and can help to engage the appropriate defensive strategy based on the proximity of the threat, when experienced in an extreme, unregulated, and generalized manner, they can become maladaptive (6,7).

Anxiety can be subdivided into momentary or state stress and stable or trait anxiety. Momentary or state anxiety reflects the psychological and physiological transient reactions directly related to adverse situations in a specific moment, while the term stable or trait anxiety refers to a trait of personality, describing individual differences related to a tendency to present state anxiety (5).

This study aims to evaluate the individuals' anxiety status in the COVID-19 testing process.

MATERIAL and METHODs

Design of the Study: This research is a descriptive study. It was conducted the individuals who were in the COVID-19 diagnostic testing process at Mardin Training and Research Hospital, between 1st and 30th October 2020. Data were collected with a questionnaire form and State-Trait Anxiety Inventory. Data collection tools were administered to the participants before the COVID-19 test by a specialist psychiatric nurse through a face-to-face interview.

Questionnaire Form: It consists of 15 questions consisting of sociodemographic and introductory characteristics of individuals.

State-Trait Anxiety Inventory (STAI): It was developed by Spielberger et al. in 1970 and is a test administered to those over the age of 14 (8). The validity and reliability studies of Turkish version were performed by Öner and Le Compte (9). The STAI can be applied to the same individuals at different times to detect changes in anxiety levels. It is a psychological inventory consisting of forty self-report items on a four-point Likert scale. The STAI measures both state anxiety and trait anxiety separately. Each type of anxiety has its own scale of twenty questions (10). Scores range between twenty and eighty; while low scores correlate with mild anxiety, higher scores correlate with a more severe condition (9, 10).

Research and Publication Ethics: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Ethics Committee of Istanbul Medipol University, Istanbul, Turkey (Date: 17.09.2020, No: 715).

Statistical Analysis: The data were evaluated in computer environment using the SPSS software, version 20.0 (IBM Corp., Armonk, NY, USA). In the evaluation of the data, percentage, arithmetic mean, standard deviation values, minimum and maximum values were used as descriptive statistics. The Shapiro-Wilk test was used to determine whether the numerical variables showed normal distribution or not. In accordance with the distribution of the data, Mann-Whitney U test was used in paired group comparisons, and Kruskal-Wallis H test was used in comparisons of three or more groups. Analysis of variance (ANOVA) was used to determine whether the means of three or more groups are different. F-tests were used to statistically test the equality of means. The $p<0.05$ value was considered statistically significant in comparisons.

RESULTs

In total, 296 participants were included in the study. When the socio-demographic characteristics of the participants in the study were examined, 54.1% were male, 90.2% were under the age of 45 (min-max: 18-88 years), the mean age was 31.25±11.17. It was determined that 55.7% of the participants were married, 62.5% were workers, and 63.9% were middle-income (**Table 1**).

Among the participants, 18.9% had a chronic disease, and 48.2% of those with chronic diseases had asthma; 24.3% of the participants had family members with a chronic disease, and 34.7% of these individuals had asthma, and 22.3% of the participants had family members with a positive COVID-19 test (**Table 2**).

The mean anxiety score was significantly elevated in individuals who were female, had a chronic illness, had a family member with a chronic condition, had a family member who had tested positive for COVID-19, and had a spouse who had tested positive for COVID-19 ($p<0.05$), as shown by **Table 1** and **Table 2**.

In the study, no significant relationship was found between the number of children of the participants, the number of people they live with in their families, the type of chronic disease of the participant with a chronic disease, the type of chronic disease of the individual with a chronic disease in their family, and their anxiety score averages ($p>0.05$).

Table 1. Distribution of the mean scores of the State-Trait Anxiety Inventory (STAI), according to various sociodemographic characteristics (n=296).

Sociodemographic characteristics	Mean±SD	Test*	P**
Gender			
Female	48.83±9.74	U: 7954.500	**p<0.001**
Male	44.66±11.14		
Age			
18-23	48.28±9.76		
24-31	46.90±11.77		
32-38	45.46±10.60		
39-45	46.20±10.44	KW: 11.255	0.081
46-52	37.90±9.19		
53-59	45.00±9.35		
60 and over	45.83±10.59		
Marital status			
Single	46.34±11.03		
Married	46.79±10.43	KW:1.231	0.540
Divorced	52.00±2.82		
Educational Status			
Primary education	47.10±9.59		
High school	45.80±9.94		
Associate degree	44.17±11.74	KW: 4.224	0.518
Licence	47.17±12.10		
Graduate	50.21±9.78		
Working Status			
Working	46.10±10.83	U: 9044.500	0.086
Not working	47.37±10.51		
Economical status			
Low-income	50.73±11.43		
Middle-income	46.21±10.36	KW: 3.768	0.152
High-income	45.85±11.05		
Having a Child			
Yes	46.20±10.85	U: 10402.000	0.469
No	46.92±10.60		

* Mann-Whitney U test was used in paired group comparisons, and KruskalWallis H test was used in comparisons of three or more groups. Analysis of variance (ANOVA) was used to determine whether the means of three or more groups are different. F-tests were used to statistically test the equality of means. **The $p<0.05$ value was considered statistically significant in comparisons. SD: Standard deviation

Table 2. Distribution of the mean scores of the State-Trait Anxiety Inventory (STAI), according to the health conditions of the participants and their family members (n=296).

Health Conditions	Mean±SD	Test*	
Chronic Disease Status			
Yes	51.00±10.18	U: 4762.500	**0.001**
No	45.55±10.59		
Having a case with a chronic disease within the immediate family members			
Yes	49.45±9.83	U: 6576.500	**0.018**
No	45.65±10.84		
Having a confirmed case of COVID-19 within the immediate family members			
Yes	49.09±9.86	U: 6353.500	**0.044**
No	45.86±10.85		
The family member who is the confirmed case of COVID-19 within the immediate family			
Mother	50.42±6.13		
Father	47.45±4.45		
Both mother and father	47.42±11.22	F: 2.496	**0.032**
Spouse	54.06±13.00		
Brother/Sister	45.09±9.02		
Child	35.33±7.76		
Others	53.40±8.70		

* Mann-Whitney U test was used in paired group comparisons, and Kruskal-Wallis H test was used in comparisons of three or more groups. Analysis of variance (ANOVA) was used to determine whether the means of three or more groups are different. F-tests were used to statistically test the equality of means.. **The $p<0.05$ value was considered statistically significant in comparisons. SD: Standard deviation

DISCUSSION

In the current study, the mean anxiety score of individuals in the process of COVID-19 testing was found to be 46.58±10.71; therefore, it was observed that individuals experienced moderate anxiety. COVID-19 pandemic causes fear and anxiety among people due to its spread rate and severe clinical course (10-11). Wang et al. reported that approximately one-third of China's general population experienced moderate to severe anxiety during the initial phase of the COVID-19 outbreak (10). Fardin stated in his review that COVID-19 causes various psychological effects, including increased anxiety (11).

In the study, the mean score of anxiety was found to be significantly higher in women. Lai et al. stated that the risk of developing psychological problems is higher in women during the COVID-19 epidemic in China (12). Wang et al. found a significant relationship between the female gender and high levels of stress, anxiety, and depression (10). Our study results show parallelism with the literature. This may be a reason why women use emotion-focused coping more and experience negative emotions more intensely. In addition, in the context of their traditional family roles, women can naturally be intensely affected in an epidemic picture as mothers, spouses, and caregivers.

In the study, the mean score of anxiety; It was found to be statistically significantly higher in those with a chronic disease, in those with a person with a chronic disease in their family members, in those with a positive COVID-19 test, in people with whom they live, and in those whose spouses have a positive COVID-19 test. It is emphasized in various studies that individuals with chronic disease, who are considered to be a risky group, experience more fear and anxiety than other individuals during the pandemic period (13,14). Dağlı et al. stated the difficulties of being a relative of a patient as well as being sick during the pandemic, and pointed out that being diagnosed with COVID-19 is a process full of uncertainty, involving intense stress and anxiety for the family members as well as for the individual (15).

In the study of Wang et al., 75.2% of the participants were concerned about their family members (10).

During severe health conditions, family members become more sensitive and want to be close to their patients (16). However, because COVID-19 is a life-threatening infectious disease, family members are often not allowed to be close to their patients. Additionally, it is worth noting that the fear of losing a loved one to a disease can also cause intense anxiety in family members.

CONCLUSION

Anxiety is a prevalent psychological issue during pandemics such as COVID-19. It is crucial to prioritize the psychological well-being of the population through proactive psychological interventions during the pandemic. The findings of this study highlight the importance of raising awareness among healthcare workers and society about the psychological impact of pandemics, such as anxiety. It is crucial to implement early and effective public mental health interventions provided by healthcare practitioners to manage the outbreak of pandemics. A holistic approach, including biopsychosocial follow-ups by family physicians and psychiatric nurses during pandemics, is essential to provide comprehensive care.

Author Contributions: SD: Concept, **ATA:** Literature Review**, SD:** Design, **FOS:** Data acquisition**, SD, FOS, ATA:** Analysis and interpretation**, SD, ATA, FOS:** Writing manuscript**, SD, ATA:** Critical revision of manuscript

Ethical approval: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Ethics Committee of Istanbul Medipol University, Istanbul, Turkey (Date: 17.09.2020, No: 715).

REFERENCES

1. Mukhtar S. Psychological health during the coronavirus disease 2019 pandemic outbreak. International Journal of Social Psychiatry. 2020;66(5):512-16. doi:10.1177/0020764020925835

2. Shigemura J, Ursano RJ, Morganstein JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. Psychiatry Clin Neurosci. 2020 Apr;74(4):281-2. doi: 10.1111/pcn.12988.

3   Mental Health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Available from: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1 (accessed on 30 November 2022).

4. Comprehensive Mental Health Action Plan 2013-2030. Available from: https://www.who.int/publications/i/item/9789240031029 (accessed on 30 November 2022).

5. Li Y, Jiang L. State and Trait Anxiety Share Common Network Topological Mechanisms of Human Brain. Front Neuroinform. 2022 Jun 23;16:859309. doi: 10.3389/fninf.2022.859309.

6. Kenwood MM, Kalin NH & Barbas H. The prefrontal cortex, pathological anxiety, and anxiety disorders. Neuropsychopharmacol. 2022; 47, 260–75 https://doi.org/10.1038/s41386-021-01109-z

7. Taylor S. The psychology of pandemics : preparing for the next global outbreak of infectious disease. UK: Cambridge Scholars Publishing; 2019.

8. Spielberger C, Gorsuch R, Lushene R, Vagg P, Jacobs G. Manual for the State-Trait Anxiety Inventory. Consulting Psychologists Press 1983:23-49.

9. Öner N. Durumluk-sürekli kaygı envanteri el kitabı. İstanbul: Boğaziçi Üniversitesi Yayınevi; 1985.

10. Wang C, Pan R, Wan X, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int J Environ Res Public Health 2020;17(5).

11. Fardin MA. COVID-19 and Anxiety: A Review of Psychological Impacts of Infectious Disease Outbreaks. Archives of Clinical Infectious Diseases 2020 15:COVID-19 2020;15(COVID-19):102779.

12. Lai J, Ma S, Wang Y, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open 2020;3(3):e203976-e203976.

13. Altundağ Y. Erken Dönem COVID-19 Pandemisinde COVID-19 Korkusu ve Psikolojik Dayanıklılık. EKEV Akademi Dergisi 2021;0(85):499-516.

14. Özmen S, Özkan O, Özer Ö, Yanardağ MZ. Investigation of COVID-19 Fear, Well-Being and Life Satisfaction in Turkish Society.

15. Ayakdaş Dağlı D, Büyükbayram A, Baysan Arabacı L. COVID-19 Tanısı Alan Hasta ve Ailesine Psikososyal Yaklaşım. İzmir Katip Çelebi Üniversitesi Sağlık Bilimleri Fakültesi Dergisi 2020;5(2):191-5.

16. Gürkan A. Bütüncül Yaklaşım: Yoğun Bakımda Hastası Olan Aile Üyeleri. Yoğun Bakım Hemşireliği Dergisi 2009;13(1):1-5.