Anxiety Levels of the Patients and Their Relatives During Their Visit of Health Institutions in COVID-19 Pandemic

⬤ **Hüseyin TEPETAM,**[1] ⬤ **Şule KARABULUT GÜL,**[1] ⬤ **Yalçın HACIOĞLU,**[2] ⬤ **Beyhan CEYLANER BIÇAKÇI,**[1] ⬤ **Ayfer AY EREN,**[1] ⬤ **Ahmet Fatih ORUÇ**[3]

[1]Deparment of Radiation Oncology, Kartal Dr. Lütfi Kırdar Kartal City Hospital, İstanbul-*Türkiye*
[2]Deparment of Family Medicine, İstanbul Training and Research Hospital, İstanbul-*Türkiye*
[3]Deparment of Radiation Oncology, Istanbul Oncology Hospital, İstanbul-*Türkiye*

OBJECTIVE

In our study, it was aimed to compare the anxiety; state and trait anxiety states among the communities who went to health institutions for different purposes during the COVID-19 epidemic and to evaluate the factors affecting anxiety, state and trait anxiety.

METHODS

The data of this study were collected face to face using the Beck Anxiety Inventory (BAI), State Anxiety Inventory (STAI-S) and Trait Anxiety Inventory (STAI-T) for cancer patients who applied to the Oncology center between October 2020 and December 2020. Their companions and the patients who went to a primary healthcare institution. Participants' awareness of the COVID pandemic and the effects of the pandemic on their lives and demographic information were also recorded. A total of 252 participants responded to the tests.

RESULTS

In our study, 252 people, including 130 (51.6%) cancer patients, 49 (19.4%) cancer patient companions, and 73 outpatients who applied to a primary healthcare institution, participated in our study. In all participants, the mean anxiety level according to BAI was 10.75±12.5 (0–48), the mean state anxiety according to STAI-S was 44.42±10.59 (20–74), according to STAI-T, the mean trait anxiety was found to be 45.65±8.80 (20–78) points. Among the three groups, the highest anxiety, state and trait anxiety was seen in patients who applied to primary healthcare institution.

CONCLUSION

In our study, many factors affecting the anxiety and anxiety levels of the patients and their relatives who applied to health institutions for different reasons, also under the influence of the pandemic, were determined. With such studies, the psychosocial conditions of the patients and their relatives should be closely followed in the event of the future epidemics, and psychological treatments and support needs should be kept in mind in addition to the primary treatment of their diseases.

Keywords: Anxiety; COVID-19 pandemic; state anxiety; trait anxiety.

Dr. Hüseyin TEPETAM
Kartal Dr. Lütfi Kırdar Kartal Şehir Hastanesi,
Radyasyon Onkolojisi Kliniği,
İstanbul-Türkiye
E-mail: htepetam78@yahoo.com.tr

Tepetam et al.
The Effect Of The Covid-19 Pandemic On Anxiety Levels

93

INTRODUCTION

COVID-19 infection is an epidemic that spreads rapidly and has been declared a pandemic by the World Health Organization (WHO) since March 2020. It has deeply affected social and individual life. The COVID-19 pandemic, which has an effect all over the world and causes restrictions in our social and cultural life, shows a life-threatening feature. From the moment the pandemic started, the respiratory distress of the people who contracted the disease, the need for intensive care, and the processes leading to death were shown to the whole society by media organs. This situation increased the psychosocial dimension and social impact of the epidemic and caused an increase in the level of anxiety in people. Anxiety has increased for both themselves and their relatives and has led to the emergence of situations such as isolation from society and family. In a study, Lee et al.[1] had showed that changes in the social attitudes and behaviors of individuals due to the fear and anxiety caused by the coronavirus epidemic were revealed.

Due to the prevalence and fatality of the pandemic, most of the society has postponed applying to health institutions to avoid this epidemic and to minimize the transmission of infection. In fact, the Ministry of Health has extended the duration of the reports of drugs that individuals with chronic diseases have to use continuously to reduce the number of visits to the hospital. However, as in other times, it is a necessity for many patients to apply to health institutions during the pandemic process. Especially, patients who cannot be treated remotely, such as cancer, and their relatives who have to accompany these patients, have to continue to go to cancer treatment centers. In addition, citizens who do not want to apply to the crowded environment of hospitals and have chronic diseases prefer to apply to primary healthcare institutions.

Anxiety can occur due to a situation experienced by the individual, or it can appear as a continuous situation experienced. State anxiety refers to the anxiety that arises due to a certain situation. It is defined as a state of fear that occurs as a result of environmental effects and ends when the effects disappear. It is a state of restlessness. Trait anxiety, on the other hand, is a negative interpretation of environmental stress and threat. Moreover, this situation determines the tendency of the person to anxiety. Community members with constant anxiety levels experience situational anxiety more intensely than others.[2]

Studies conducted during epidemic periods have shown that anxiety, anxiety level increases, post-traumatic stress disorders and even suicidal tendencies increase.[1,3,4]

In our study, we aimed to evaluate the anxiety levels of patients diagnosed with cancer (who have to come to health institutions for various reasons), companions of patients diagnosed with cancer, and polyclinic patients who applied to primary healthcare institutions during the COVID-19 pandemic process, and to determine the levels of anxiety, trait anxiety, and statefulness.

MATERIALS AND METHODS

In our study, cancer patients who had applied to the oncology clinic, their companions and patients who visited primary healthcare institution with a total number of 252 were evaluated in terms of their anxiety levels and various factors (age, gender, economic status, education level, COVID awareness, etc.). Three types of anxiety scales were used to assess anxiety levels. These are the Beck anxiety inventory (BAI), the state anxiety scale (STAI-S), and the trait anxiety scale (STAI-T), respectively. With the consent of the patients and their attendants, the questions of the scales were recorded as one-to-one question and answer. In addition, the awareness of the COVID pandemic and the effects of the pandemic on their lives and demographic information were also recorded.

BAI

This scale, which is used to determine the frequency of anxiety symptoms experienced by individuals and to measure the level of anxiety, was developed by Beck et al.[5]. The score range is 0–63, consisting of 21 items (a Likert-type scale scored between 0 and 3). The Cronbach's alpha value of the scale was found to be 0.92. In our study, the Cronbach's alpha value of the scale was found to be 0.949. The high total scores obtained from this scale indicate the severity of the anxiety experienced by the individual. The validity and reliability of the scale in Türkiye was performed by Ulusoy et al.[6]

- 0–7 points minimal anxiety,
- 8–15 points mild anxiety,
- 16–25 points moderate anxiety,
- 26–63 points were evaluated as severe anxiety.

State Anxiety Inventory (STAI-S) and Trait Anxiety Inventory (STAI-T)

Anxiety created by momentary conditions occurs depending on the temporary situation individuals are in and this is called state anxiety. Situational anxiety can

Self-evaluation questionnaire	STAI form Y-2			
	1	2	3	4
21. I feel pleasant	☐	☐	☐	☐
22. I feel nervous and restless	☐	☐	☐	☐
23. I feel satisfied with myself	☐	☐	☐	☐
24. I wish I could be as happy as others seem to be	☐	☐	☐	☐
25. I feel like a failure	☐	☐	☐	☐
26. I feel rested	☐	☐	☐	☐
27. I am "calm, cool, and collected"	☐	☐	☐	☐
28. I feel that difficulties are piling up so that I cannot overcome them	☐	☐	☐	☐
29. I worry too much over something thar really doesn't matter	☐	☐	☐	☐
30. I am happy	☐	☐	☐	☐
31. I have disturbing thoughts	☐	☐	☐	☐
32. I lack self-confidence	☐	☐	☐	☐
33. I feel secure	☐	☐	☐	☐
34. I make decisions easily	☐	☐	☐	☐
35. I feel inadequate	☐	☐	☐	☐
36. I am content	☐	☐	☐	☐
37. Some unimportant thought runs my mind and bothers me	☐	☐	☐	☐
38. I take disappointments so keenly that I can't put them out of my mind	☐	☐	☐	☐
39. I am a steady person	☐	☐	☐	☐
40. I get in a state of tension or turmoil as I think over my recent concerns and interest	☐	☐	☐	☐

1: Almost never, 2: Sometimes, 3: Often, 4: Almost always

Fig. 1. STAI-T form.
STAI-T: Trait Anxiety Inventory.

have ups and downs and can vary in intensity. Anxiety, that is not directly related to environmental hazards, is perceived as a threat to personal values or results from a stressful interpretation of social life is called trait anxiety. Trait anxiety is individual differences that can be considered relatively stable and is a general tendency to respond to a perceived threat in the environment.[7]

One of the measurement techniques used to evaluate such anxiety was developed by Spielberger in 1970, and its Turkish version was developed by Öner et al. and its validity and reliability study was carried out by adapting it.[6–8] While state anxiety level is scored as "(1) not at all, (2) somewhat, (3) moderately so, and (4) very much so" in STAI-S, the options in STAI-T, which evaluates trait anxiety, are "(1) almost never, (2) sometimes, (3) often, and (4) almost always." There are two types of expressions on the scales (Figs. 1, 2). Direct expressions express negative emotions; reversed expressions express positive emotions. Two separate total score weights are calculated for each of the direct and reverse expressions. The total score for the reverse statements is subtracted from the total score for the direct statements. A predetermined and unchanging value is added to this number. A constant value of 50 was added to the number obtained for STAI-S. For STAI-T, this value is 35. The

Self-evaluation questionnaire	STAI form Y-1			
	1	2	3	4
1. I feel calm	☐	☐	☐	☐
2. I feel secure	☐	☐	☐	☐
3. I am tense	☐	☐	☐	☐
4. I feel strained	☐	☐	☐	☐
5. I feel at ease	☐	☐	☐	☐
6. I feel upset	☐	☐	☐	☐
7. I am presently worrying over possible misfortunes	☐	☐	☐	☐
8. I feel satisfied	☐	☐	☐	☐
9. I feel frightened	☐	☐	☐	☐
10. I feel comfortable	☐	☐	☐	☐
11. I feel self-confident	☐	☐	☐	☐
12. I feel nervous	☐	☐	☐	☐
13. I am jittery	☐	☐	☐	☐
14. I feel indecisive	☐	☐	☐	☐
15. I am relaxed	☐	☐	☐	☐
16. I feel content	☐	☐	☐	☐
17. I am worried	☐	☐	☐	☐
18. I feel confused	☐	☐	☐	☐
19. I feel steady	☐	☐	☐	☐
20. I feel pleasant	☐	☐	☐	☐

1: Not at all, 2: Somewhat, 3: Moderately so, 4: Very much so

Fig. 2. STAI-S form.
STAI-S: State Anxiety Inventory.

Tepetam et al.
The Effect Of The Covid-19 Pandemic On Anxiety Levels

95

most recent value is the individual's anxiety score. The scores obtained from both scales theoretically vary between 20 and 80. A high score indicates a high level of anxiety. The same is true when interpreting scores in percentile order. The average score level determined in the applications varies between 36 and 41.[7–10]

Statistical Analysis

Statistical Package for the Social Sciences 20.0 program was used for statistical analysis of the data obtained in the study. Sociodemographic and clinical categorical variables of patients and their relatives were evaluated with numbers and percentages. The crossed Chi-square test was used to compare classified categorical variables. The distribution of the data was evaluated with the Kolmogorov-Smirnov method, and since the data did not comply with the normal distribution, the Mann-Whitney U test, which is 22 non-parametric tests, was evaluated whether the scores showed a significant difference between the paired groups. P<0.05 was interpreted as statistically significant. Kruskal-Wallis test was used in cases with more than two groups, and statistical significance was evaluated with the p value formed by Bonferoni correction.

RESULTS

Two hundred and fifty-two people, 130 (51.6%) patients with cancer, 49 (19.4%) cancer patient companions, and 73 outpatients who applied to a primary healthcare institution, participated in our study. One hundred and twenty-nine (48.8%) of the participants were women and 153 (60.7%) participants were 40 years and older. The characteristics of the participants are shown in Table 1. According to the state anxiety scale, participants under the age of 40 had a higher score (p=0.01). According to marital status, married (59.1%) state anxiety levels were found to be statistically lower than those who were single or widowed. While 64 (25.4%) smokers were smokers, 25 (10.3%) alcohol users. While anxiety levels were higher in smokers compared to BAI (p=0.007), state anxiety levels were statistically significantly higher in alcohol users (p=0.004). Anxiety was higher in illiterate individuals when viewed according to their education level (p=0.0046). Anxiety was found to be significantly higher in the presence of chronic disease (p=0.004).

When the reasons for applying to health institutions were examined, it was determined that the presence of anxiety in three different groups had a statistically significant effect on the state anxiety scale and state anxiety levels.

Table 1 Characteristics of the participants

Variable	n	%
Gender		
Male	123	48.8
Female	129	51.2
Age		
Below 40	99	39.3
40 and above	153	60.7
Marital status		
Married	149	59.4
Single	103	40.6
Having kid		
Have	162	64.3
Don't have	90	35.7
Reason of visiting		
Cancer patient	130	51.6
Cancer patient companion	49	19.4
Primary health center	73	29
Education		
Primary school	99	39.3
Middle school	36	14.3
High school	50	19.8
University	67	26.6
Income		
0–2500	151	59.9
2500–5000	73	29
5000–10000	22	8.7
10000 above	6	2.4
Smoking		
Yes	65	25.8
No	187	74.2
Chronic disease		
Yes	92	36.5
No	160	63.5

A significant difference in anxiety was detected between cancer patients and their relatives. More anxiety was detected in cancer patients (p=0.001). Anxiety and state anxiety were found to be lower in cancer patients between cancer patients and primary health-care patients (p=0.002 and 0.0001, respectively). Anxiety and state anxiety levels were statistically higher among patients' relatives and primary health-care patients (p=0.0001 and 0.0002, respectively).

Anxiety values were found to be significantly higher in 10 (4%) participants who had COVID-19 infection. Anxiety values were higher in those who answered yes to the question of whether the COVID pandemic caused you anxiety (according to BAI). Trait anxiety values were found to be higher in those who postponed their application to the health institution (108 people). Anxiety and trait anxiety values

were significantly higher in 119 (47.2%) participants who felt vital anxiety.

In cancer patients, anxiety was significantly higher in women than in men (p=0.011), in those with an income level below 5000 TL (Turkish Lira) (p=0.02), in those who answered yes to the question of whether COVID stress caused anxiety (p=0027), and in those who said they felt vital anxiety (p=0.000) were high. Trait anxiety level was found to be higher but statistically insignificant in those whose income level was below 5000 TL. State anxiety levels were significantly higher in those with primary-secondary education (p=0.0027) and those with vital concerns (p=0.04). The state and trait anxiety rates of the participants with anxiety were also found to be significantly higher (p=0.000).

DISCUSSION

Due to the COVID-19 pandemic, it has increased the anxiety level of many individuals, whether they have a chronic disease or not.[11–13] Apart from being in the high risk group, it is predicted that these individuals may react differently than the normal population during the pandemic period, since they struggle with a disease that is both physically and mentally tiring, and it is thought that it may be beneficial to take measures to increase the quality of life in this regard. For this reason, in our study, the anxiety levels of cancer patients in the COVID-19 pandemic, the anxiety levels of the relatives of the patients who were mentally and physically worn out during the cancer disease process, and the anxiety levels of the patients who applied to overcome the first level health-care service during the pandemic process were examined.

It is normal for cancer patients and their relatives to have difficulties in controlling their emotions during the pandemic period, and because they cannot stay in isolation due to the necessity of constantly going to the hospital not to interrupt cancer treatment, and because they have a higher risk of COVID infection and their concerns about the pandemic increase.

Anxiety is frequently seen in cancer patients during diagnosis, examination, and treatment.[14–16] Anxiety seen in patients diagnosed with cancer and undergoing oncological treatment can be described as the tension of being on the alert with the thought that something bad may happen all the time, the feeling of unknown danger, and sense of evil. Anxiety expected in cancer patients leads to negativities in adherence to treatment and quality of life.[17–19] As expected, anxiety was found to be higher in cancer patients than in their

relatives in our study. However, anxiety was higher in patients who applied to the primary health center. The reason for this is that cancer patients constantly come to the hospital for diagnosis, treatment, and follow-up and it is thought that the weight of the cancer diagnosis may be more dominant in the face of COVID infection. In addition, the reasons for applying to the first level health center were chronic diseases, and the presence of a chronic disease brought along high anxiety.

When the reflection of the presence of anxiety on the state anxiety scale and state anxiety levels in all three groups was evaluated, similar to the studies in the literature, it was found that if the anxiety was high in the individuals, the state and trait anxiety levels were also high accordingly.[12,20,21]

In the study of Goksu et al., which investigated the perceived anxiety and stress level of individuals in the COVID epidemic, it was determined that there was a statistically significant difference between the averages of the Perceived Stress Scale scores according to the age variable, and it was determined that individuals in the 20–29 age group perceived the epidemic process more stressful. In the study examining the mental health of the British society during the epidemic, it was found that the level of anxiety was higher at young ages, in a similar study, the level of age-related stress changed, and the young and old people experienced higher levels of stress. In the study that included university students during the epidemic process, stress and anxiety levels were found to be high in students.[22–24] In our study, a significant increase was found in the state anxiety scale in people younger than 40 years of age compared to the elderly. During the epidemic, the restriction of freedoms with the curfew, the decrease in sociality, the fear of losing their life at an early age, the fear of transmitting the disease to their elders who are isolated at home and losing their elders may have created more stress in young people.

According to our study results, female cancer patients and their relatives have higher anxiety levels than male patients during the COVID-19 pandemic. This gender difference is consistent with other studies. [11–13,25,26] Lau et al., in their study evaluating severe acute respiratory syndrome reported that women perceived the disease as more contagious and lethal and experienced higher levels of anxiety. In Çırakoglu's study, which evaluated the anxiety levels of individuals in the swine flu epidemic, women were also found to be more anxious. In the study of Wang et al. examining the psychological reactions and the effective factors in the initial period of the COVID-19

Tepetam et al.
The Effect Of The Covid-19 Pandemic On Anxiety Levels

97

epidemic, it was found that women experienced higher levels of anxiety compared to men.[12,27,28] Women are negatively affected by stress in their lives due to the responsibilities, they have at home and at work, and the need to do several things at the same time, and this stress is also reflected in their anxiety levels. For this reason, anxiety disorder observed in females compared to male individuals was unchanged and higher during the pandemic period.

According to their marital status, the state anxiety levels of those who are married were found to be statistically lower than those who were single or widowed, similar to other studies. Although Shevlin et al. showed that being married during the COVID-19 epidemic increased the stress level, the mean state and trait anxiety scores were 2 times higher. It was found to be similar in the group.

In Shevlin's study, participants in the pandemic-era income-losing and low-income categories were significantly higher for anxiety/depression.[23] In our study, high anxiety was detected in people who earn below the minimum wage determined in today's conditions. It is observed that anxiety disorder increases as the income level decreases.

Higher levels of anxiety/depression have been reported in people with the previous health problems, relatives of people with pre-existing health problems, if the person is self-infected and/or has knowledge of personal infection risks.[23] Anxiety was found to be higher in those who felt vitally worried and answered yes to the question of whether COVID stress caused anxiety and those with chronic diseases, and anxiety disorder was similarly higher in individuals who had had COVID infection.

In the literature, no difference was found between state and trait anxiety scores according to education level, and people with low education levels are expected to have high anxiety levels. Our research and the results of many studies on the level of anxiety also supported this.[29,30]

The coronavirus outbreak has caused dramatic changes in daily life, including its economic and health effects. Evidence on the impact of these changes on our physical and mental health and health behaviors is limited. In a survey study conducted in Australia, participants' depression, anxiety, stress, physical activity, sleep, alcohol intake and smoking status and their relationships with each other were evaluated. Moreover, similar to our study, smoking and alcohol intake were associated with higher symptoms of depression, anxiety, and stress.[31]

CONCLUSION

Anxiety can be expressed in terms such as fear, anxiety, dread, and anxiety or it can also be expressed as a constant watchful waiting and tension as an unknown and indistinguishable sense of danger or evil. Anxiety is frequently detected in cancer patients at all follow-up stages. The developing anxiety negatively affects the patient's acceptance of the current disease, struggling with the disease, compliance with the treatment and the patient's quality of life. It is very common for the relatives of the patients who follow all their processes to experience the same stress and anxiety. For this reason, it is more important to determine the anxiety of patients and their relatives and to provide support to reduce it.

Our study enabled us to examine the anxiety felt by cancer patients and their relatives and patients applying to primary health-care services during the COVID-19 pandemic, and the psychological factors affecting their anxiety state. To keep the quality of life high in anxiety disorders of both cancer patients and their relatives, earlier and more effective support practices, a multidisciplinary approach, and coordination with psychiatrists are important both during and after the pandemic.

REFERENCES

1. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Stud 2020;44(7):393–401.
2. Türkçapar H. Bilişsel terapi: Temel ilkeler ve uygulama. 6th ed. Ankara: HYB Yayınları; 2012.
3. Wheaton MG, Abramowitz JS, Berman NC, Fabricant LE, Olatunji BO. Psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic. Cogn Ther Res 2012;36(3):210–8.

4. Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z, et al. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. Can J Psychiatry 2009;54(5):302–11.

5. Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol 1988;56(6):893–7.

6. Ulusoy M, Sahin NH, Erkmen H. Turkish version of the Beck Anxiety Inventory: Psychometric properties. J Cognitive Psychother 1998;12(2):163–72.

7. Knight RG, Waal-Manning HJ, Spears GF. Some norms and reliability data for the State--Trait Anxiety Inventory and the Zung Self-Rating Depression scale. Br J Clin Psychol 1983;22(Pt 4):245–9.

8. Öner N, LeCompte WA. Süreksiz durumluk. In: Sürekli kaygı envanteri el kitabı. İstanbul: Boğaziçi Üniversitesi Yayınları; 1985.

9. Spielberger CD, Gorsuch RL, Lushene PR, Vagg PR, Jacobs AG. Manual for the state-trait anxiety inventory. Palo Alto, CA: Consulting Psychologists Press; 1983.

10. Forsberg C, Björvell H. Swedish population norms for the GHRI, HI and STAI-state. Qual Life Res 1993;2(5):349–56.

11. Hyland P, Shevlin M, McBride O, Murphy J, Karatzias T, Bentall RP, et al. Anxiety and depression in the Republic of Ireland during the COVID-19 pandemic. Acta Psychiatr Scand 2020;142(3):249–56.

12. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, 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):1729.

13. Erkuş ÖK, Çolak SA. Koronavirüs kaygısının beklenmeyen yönleri: Kanser hastalarının covid-19 kaygılarını etkileyen faktörlerin incelenmesi. [Article in Turkish]. Current Approaches in Psychiatry 2021;13(Suppl 1):200–15.

14. Özkan S. Kanser hastasında psikiyatrik ve psikososyal destek. In: Onat H, Mandell NM, editors. Kanser Hastasına Yaklaşım. İstanbul: Nobel Tıp Kitabevi; 2002. p. 355–68.

15. Pandey M, Sarita GP, Devi N, Thomas BC, Hussain BM, Krishnan R. Distress, anxiety, and depression in cancer patients undergoing chemotherapy. World J Surg Oncol 2006;4:68.

16. Demirkan B, Yavuzsen T, Alakavuklar MN. Short term health related quality of life with epirubicin and cyclophosphamide (EC) versus 5-fluorouracil, epirubicin and cyclophosphamide (FEC) as adjuvant chemotherapy in Turkish patients with operable breast cancer. Turk J Cancer 2006;36(3):116–25.

17. Schreier AM, Williams SA. Anxiety and quality of life of women who receive radiation or chemotherapy for breast cancer. Oncol Nurs Forum 2004;31(1):127–30.

18. Smith EM, Gomm SA, Dickens CM. Assessing the independent contribution to quality of life from anxiety and depression in patients with advanced cancer. Palliat Med 2003;17(6):509–13.

19. Iconomou G, Mega V, Koutras A, Iconomou AV, Kalofonos HP. Prospective assessment of emotional distress, cognitive function, and quality of life in patients with cancer treated with chemotherapy. Cancer 2004;101(2):404–11.

20. Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, et al. Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. J Nurs Manag 2020;28(5):1002–9.

21. Hamlyn-Wright S, Draghi-Lorenz R, Ellis J. Locus of control fails to mediate between stress and anxiety and depression in parents of children with a developmental disorder. Autism 2007;11(6):489–501.

22. Göksu O, Kumcağız H. Covid-19 salgınında bireylerde algılanan stres düzeyi ve kaygı düzeyleri. [Article in Turkish]. Turkish Studies 2020;15(4):463–79.

23. Shevlin M, McBride O, Murphy J, Miller JG, Hartman TK, Levita L, et al. Anxiety, depression, traumatic stress and COVID-19-related anxiety in the UK general population during the COVID-19 pandemic. BJPsych Open 2020;6(6):e125.

24. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res 2020;287:112934.

25. Lewinsohn PM, Gotlib IH, Lewinsohn M, Seeley JR, Allen NB. Gender differences in anxiety disorders and anxiety symptoms in adolescents. J Abnorm Psychol 1998;107(1):109–17.

26. McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. J Psychiatr Res 2011;45(8):1027–35.

27. Lau JT, Yang X, Pang E, Tsui HY, Wong E, Wing YK. SARS-related perceptions in Hong Kong. Emerg Infect Dis 2005;11(3):417–24.

28. Çırakoğlu OC. Domuz gribi (H1N1) salgını ile ilgili algıların, kaygı ve kaçınma düzeyi değişkenleri bağlamında incelenmesi. [Article in Turkish]. Türk Psikoloji Bülteni 2011;26(67):49–64.

29. Sakaloğlu HH, Orbatu D, Emiroglu, Çakır Ö. Covid-19 salgını sırasında sağlık çalışanlarında Spielberger durumluk ve sürekli kaygı düzeyi: Tepecik Hastanesi örneği. [Article in Turkish]. Tepecik Eğit ve Araşt Hast Dergisi 2020;30(Ek sayı):1–9.

Tepetam et al.
The Effect Of The Covid-19 Pandemic On Anxiety Levels

99

30. Ertufan H. Hekimlik uygulamalarında ölümle sık karşılaşmanın ölüm kaygısı üzerine etkisi. Doktora tezi. İzmir: Ege Üniversitesi Sosyal Bilimler Enstitüsü; 2008.

31. Stanton R, To QG, Khalesi S, Williams SL, Alley SJ, Thwaite TL, et al. Depression, anxiety and stress during COVID-19: associations with changes in physical activity, sleep, tobacco and alcohol use in Australian adults. Int J Environ Res Public Health 2020;17(11):4065.