

Evaluation of Post Traumatic Stress Disorder in Patients Aged 40-80 years Old with COVID-19 Registered with Family Health Centers

Aile Sağlığı Merkezlerine Kayıtlı COVID-19 Geçiren 40-80 yaş Arası Hastalarda Post Travmatik Stres Bozukluğunun Değerlendirilmesi

¹Tuğba BODUR, ¹Hüseyin ELBİ, ¹Fatih ÖZCAN

¹Department of Family Medicine, Celal Bayar University, School of Medicine, Manisa, Türkiye

Tuğba Bodur: <https://orcid.org/0000-0002-3132-8303>

Hüseyin Elbi: <https://orcid.org/0000-0002-2955-5400>

Fatih Özcan: <https://orcid.org/0000-0001-9380-5227>

ABSTRACT

Objective: This study aimed to investigate the levels of Post Traumatic Stress Disorder (PTSD) in Coronavirus Disease-2019 (COVID-19) patients during the pandemic and to determine the relationship of this situation with sociodemographic and other environmental factors.

Materials and Methods: Our research is a cross-sectional descriptive study in which a 20-question survey and the Impact of Events Scale (IES) were applied to 200 individuals between the ages of 40 and 80 who had COVID-19 and were registered in 5 different Family Health Centers.

Results: The participants' mean IES was 19.9±8.9. It was significantly higher in women, singles, individuals with primary education levels and before, and individuals with continued symptoms after COVID-19 ($p<0.05$). When the diagnostic cut-off value for PTSD for the IES is taken as 30, 26 (13.0%) individuals participating in the study have a risk for PTSD.

Conclusions: The participants' PTSD risk level after COVID-19 was lower than in the early times of the epidemic. This low rate is the better recognition of the disease in society, the widespread use of vaccines, and the relaxation of restrictive measures such as quarantine. Activities in this direction are also crucial in combating possible future epidemics.

Keywords: COVID-19, mental health, posttraumatic stress disorder

ÖZ

Amaç: Koronavirüs Hastalığı-2019 (COVID-19) hastalarının pandemi döneminde Post Travmatik Stres Bozukluğu (PTSB) düzeylerinin araştırılması ve bu durumun sosyodemografik ve diğer çevresel faktörlerle ilişkisinin saptanması amaçlanmıştır.

Materyal ve Metot: Araştırmamız 5 farklı Aile Sağlığı Merkezine kayıtlı, COVID-19 geçiren 40-80 yaş arası 200 bireye, 20 soruluk bir anket ve Olayların Etkisi Ölçeği (OEÖ) uygulanan kesitsel tanımlayıcı bir araştırmadır.

Bulgular: Katılımcıların ortalama OEÖ puanı 19,9±8,9 olup kadınlarda, bekarlarda, eğitim seviyesi ilköğretim ve öncesi olan ve koronavirüs hastalığı sonrası semptom devamı olan bireylerde anlamlı olarak daha yüksek saptanmıştır ($p<0,05$). OEÖ'nün PTSD için tanı koydurucu kesim değeri 30 alındığında, çalışmaya katılan bireylerin 26'sında (%13) PTSD açısından risk vardır.

Sonuç: Katılımcıların COVID-19 sonrası PTSD risk düzeyi, salgının ilk zamanlarına göre düşük saptanmıştır. Bu düşüklüğün sebebi hastalığın toplumda daha iyi tanınır hale gelmesi, aşı uygulamalarının yaygınlaşması, karantina gibi kısıtlayıcı önlemlerin gevşetilmesidir. Bu yöndeki faaliyetler, gelecekteki olası salgınlarla mücadele açısından da önem taşımaktadır.

Anahtar Kelimeler: COVID-19, mental sağlık, post travmatik stres bozukluğu

Sorumlu Yazar / Corresponding Author:

Tuğba Bodur
Celal Bayar University Faculty of Medicine, 3rd Floor Uncubozköy
mah Mimarsinan Street No.189 Yunusemre/Manisa -Türkiye.
Tel: +905305013845
E-mail: drtugba.bodur@gmail.com

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INTRODUCTION

Any situation threatening a person's life or physical integrity can have a traumatic effect on the person. Sudden thoughts, nightmares, re-experiencing the traumatic event, avoidance of traumatic events, sensory sensitivity, and sleep disturbances characterize Post Traumatic Stress Disorder (PTSD). All of these lead to significant social, occupational, and interpersonal dysfunction.¹ Epidemics and pandemics are also included in traumatic events.²

The mental health of the individuals diagnosed with Coronavirus Disease-2019 (COVID-19) is under threat due to the clinical severity of the disease, fear of death, health anxiety, quarantine conditions, anxiety about contagion to their relatives, and stigma of the disease.³ Therefore, evaluating the mental health of patients with COVID-19 and intervening early in psychopathologies can reduce the development of PTSD due to COVID-19.⁴

Determining the effects of epidemics on the mental health of the community can provide earlier and more accurate psychological intervention in future epidemics.⁵ In the early days of the COVID-19 epidemic, it has been determined that the people who may be exposed to the negative consequences of the epidemic are primarily people over 50.⁶

The pandemic period is a new process that people have not had any experience with before and must struggle individually and socially. Two Italian studies on recovered severe COVID-19 survivors reported that the prevalence of PTSD is 10.4% and 30.2%, respectively.^{7,8}

In this study, we aimed to determine the risk of developing PTSD in patients aged 40-80 diagnosed with COVID-19 during the pandemic. The effects of the current as well as of past epidemics on the mental health of survivors can help predict the psychopathological consequences of a severe life-threatening viral disease.

MATERIALS AND METHODS

Ethics Committee Approval: This study was approved by the Manisa Celal Bayar University School of Medicine Clinical Research Ethics Committee (Date: 22.09.2021, decision no: 20.478.486/948) and approved by Manisa Provincial Health Department (Date: 16.12.2021, decision no: E-79593712-604.02.01). This study was carried out in accordance with international standards.

Study Design and Participants: This cross-sectional descriptive study consisted of patients aged 40-80 who had COVID-19 in the last three months and registered in 5 different Family Health Centers in the central districts of Manisa province. According to the evaluation of whether there is a difference between the two groups in terms of PTSD risk in the

study, it was determined that at least 134 patients should be included in the study in the sample size calculation made by considering an effect size of 0.50, a power of 0.80 and a margin of error of 0.05. Considering the universe that could be reached in the study, it was evaluated that the sample would not be normally distributed. The effect power was considered medium-sized and was analyzed at 0.50. Sample size calculation was made with the G*Power 3.1.9.7 program.

This study included two hundred people between December 2020 and February 2021. A signed "informed consent" document was obtained from these individuals. There are no missing data. The dependent variable of the study is the participants' PTSD risk. Independent variables in the descriptive information form are gender, educational status, and marital status. Individuals younger than 40 and older than 80 years old, having mental retardation, psychotic disorder, dementia, delirium, or one of the other amnesic disorders, and not carrying COVID-19 were not included in the study.

Data Collection: Study data were collected between 16.12.2020 and 16.02.2021. Data analysis and report writing started in March 2022 and ended in April 2022. Questionnaires were filled out face-to-face based on the individuals' self-reports.

Data Collection Tools: The study team created a questionnaire form by scanning the literature, and the Impact of Events Scale (IES) was used.

Data Form: The survey consists of 20 questions that will help determine the participants' sociodemographic information, smoking status, chronic disease history, psychological health, whether they need psychological support, symptoms when they have COVID-19 and hospitalization status.

Impact of Events Scale: The IES was developed by Creamer et al.⁹ in 2003 to determine the stress of trauma cases during the application of the scale, and its Turkish validity reliability was performed by Çorapçioğlu et al.¹⁰ in 2006. In our study, IES evaluates how many people who have had COVID-19 disease in the last three months are disturbed and damaged by this disease. The scale is a 22-item scale consisting of three subscales: re-experiencing, avoidance, and hypervigilance. The scores that can be obtained from the scale range from 0 to 88, and as the total score increases, it is considered that the risk of PTSD increases. The diagnostic cut-off value for PTSD was taken as '30'. IES was used in a study on the psychological impact of the COVID-19 epidemic on healthcare workers at the beginning of the pandemic.¹¹ In another study, the risk of developing PTSD in patients who experienced earthquakes and fire was made IES.¹²

Data Analysis: Statistical Package for The Social Sciences (IBM SPSS) 15.0 statistical package program was used to evaluate and analyze the data obtained from the study. In the study, categorical variables were given as number (n) and percentage (%), and numerical data were presented as mean and standard deviation to show the patient distribution. It was determined whether the variables' distribution was normal according to the Skewness-Kurtosis values (-2/+2).¹³ Normally distributed variables were compared using Student's t-test, and non-normally distributed variables were compared using the Mann-Whitney-U test. The Chi-square test was used to compare categorical variables. The obtained data were interpreted with the statistical significance level “p” value. Values with a p-value of <0.05 were considered statistically significant.¹¹ Regression analysis was performed to control confounding factors.¹⁴ Multiple linear regression models were used to determine the effects of variables on the IES.

RESULTS

The average age of the participants was 48.1±9.4 years (Min: 40, Max: 80). 122 (61.0%) of the participants are women, and 180 (90%) of the study participants are married. 92 (46.0%) of them are primary school graduates and before. 117 (58.5%) currently work in any job, and 131 (65.5%) are non-smokers. It was determined that 11 (5.5%) of them lived alone. It was observed that 96 (48.0%) of participants had one or more chronic diseases, and the most common were hypertension at 43 (21.5%), diabetes mellitus at 26 (13.0%), and lung diseases at 17 (8.50%), respectively. 43 (21.5%) of the partici-

pants in the study had a psychiatric diagnosis (depression and anxiety), and 41 (20.5%) of these people received any treatment. 60 (30.0%) participants lost a relative due to COVID-19, and 1 (0.5%) needed follow-up in the intensive care unit. 64 (32.0%) had symptoms after the COVID-19 disease was over. These symptoms are cough at a rate of 17 (8.5%), loss of taste and smell at a rate of 14 (7.0%), weakness, and muscle pain at a rate of 10 (5.0%) (Table 1).

Table 2 compares the participants' total IES and subgroup scale scores according to their sociodemographic characteristics. The mean score of the IES was 19.9±8.9. However, when the diagnostic cut-off value for PTSD is taken as 30, 26 (13.0%) of the individuals participating in the study have a risk for PTSD. In evaluating the PTSD risk, the mean IES scores of women were statistically higher (p=0.007). The mean scores of those with primary and pre-school education were statistically higher than those who studied high school and post-secondary education in the relationship between educational status (p=0.005). At the same time, the singles' average scores were statistically higher than those of married ones (p<0.001). The mean scores of IES of those who did not work in any job were significantly higher (p=0.016). The mean scores of IES were significantly higher in those whose symptoms continued after COVID-19 (p <0.001). The mean scores of IES were slightly higher in those who lost a loved one due to COVID-19 (p=0.052). The mean scores of the Re-experiencing subgroup for women and those who did not work in any occupation were statistically higher IES scores (p=0.010). This rate was

Table 1. Descriptive of participants by sociodemographic characteristics (n=200).

Characteristics	Date
Age, Mean±SD, (min-max)	48.1±9.4 years (40-80)
Gender, n (%)	Woman
	Man
Marital Status, n (%)	Single (Unmarried, Widow, Divorced)
	Married
Education Status, n (%)	Primary Education and before
	High school and beyond
Occupation, n (%)	Working
	Non-working (Housewife and retired)
Smoking Status, n (%)	Yes
	No
Status of Living Alone, n (%)	Yes
	No
Chronic Disease Status, n (%)	Yes
	No
Psychiatric Diagnosis, n (%)	Yes
	No
Undergoing Psychiatric Treatment, n (%)	Yes
	No
Continuation of symptoms after COVID-19, n (%)	Yes
	No

Table 2. Comparison of the participants' total IES and subgroup scale scores according to their sociodemographic characteristics.

Characteristics		IES Total Score Mean ± SD	Re-experiencing Mean ± SD	Avoidance Mean ±SD	Hypervigilance Mean ± SD
Age#	40-49	19.3±8.7	3.9±3.9	11.3±3.8	4.0±3.6
	50-59	20.2±8.8	4.6±4.7	11.3±3.2	4.3±3.8
	≥60	22.1±9.6	5.4±5.2	10.9±2.6	5.4±4.2
	p	0.275	0.171	0.858	0.184
Gender†	Women	21.2±9.4*	4.9±4.8*	11.2±3.0	5.0±4.1*
	Men	17.7±7.6	3.3±2.9	11.3±4.2	3.2±3.0
	p	0.007	0.010	0.840	0.002
Marital StatusΦ	Single	27.1±13.4*	7.5±6.1*	11.8±4.2	7.2±5.3*
	Married	19.1±7.9	3.9±3.8	11.2±3.4	4.0±3.4
	p	0.001	0.001	0.506	0.001
Education Status†	Primary Education and before	21.8±8.9*	4.6±4.6	12.0±3.1*	5.1±3.8*
	High school and beyond	18.2±8.6	3.9±3.9	10.6±3.8	3.6±3.7
	p	0.005	0.238	0.008	0.009
Occupation†	Working Individual	18.6±7.8*	3.6±3.3*	11.2±3.8	3.7±3.3*
	Non-working Individual	21.7±10.0	5.1±5.2	11.3±3.1	5.2±4.3
	p	0.016	0.013	0.984	0.007
Smoking Status†	Yes	19.4±8.5	3.9±3.7	11.6±3.9	3.9±3.6
	No	20.2±9.4	4.5±4.7	11.2±3.3	4.4±4.0
	p	0.553	0.392	0.436	0.379
Status of Living Alone†	Yes	21.8±12.1	5.0±5.3	11.4±4.3	5.0±5.5
	No	19.7±8.7	4.2±4.2	11.2±3.5	4.3±3.7
	p	0.467	0.523	0.879	0.507
Chronic Disease Status†	Yes	20.8±9.2	4.8±4.5	11.2±3.2	4.8±4.0
	No	19.0±8.6	3.8±3.9	11.3±3.8	3.9±3.6
	p	0.150	0.102	0.833	0.105
Psychiatric Diagnosis†	Yes	20.1±10.5	4.6±5.0	10.3±3.3	5.1±4.6
	No	19.8±8.4	4.1±4.0	11.5±3.5	4.1±3.5
	p	0.817	0.478	0.055	0.115
Undergoing Psychiatric Treatment†	Yes	20.3±10.7	4.7±5.1	10.4±3.41	5.1±4.7
	No	19.7±8.4	4.1± 4.05	11.5±3.58	4.1±3.5
	p	0.712	0.409	0.094	0.122
Continuation of symptoms after COVID-19†	Yes	22.4±10.6*	6.0±5.2*	10.7±3.2	5.7±4.6*
	No	18.6±7.7	3.4±3.4	11.5±3.6	3.6±3.1
	p	0.001	0.001	0.106	0.001
Relative Death Due to COVID-19†	Yes	21.7±8.7	5.0±4.4	11.7±3.5	5.1±3.6
	No	19.1±8.9	3.9±4.1	11.1±3.5	4.0±3.8
	p	0.052	0.099	0.239	0.068

IES: Impact of Even Scale; *: Significance; †: Student t-test; Φ: Mann Whitney U test; #: ANOVA.

higher in singles, with a significant difference compared to married ones ($p < 0.001$). The mean re-experiencing subgroup score was higher in those with symptoms after COVID-19 than those without symptoms ($p = 0.001$). It was determined that the mean scores of those who received primary and pre-school education were statistically higher than those who received high school and post-secondary education in the Avoidance subgroup ($p=0.008$). Singles, women, those with primary and earlier education, those who do not work, and whose symptoms continued after COVID-19 had significantly higher scores in the Hypervigilance subgroup ($p < 0.001$).

DISCUSSION AND CONCLUSION

Contagious epidemics such as COVID-19 are also considered traumatic experiences, causing fear and anxiety. Global concern has occurred due to the increasing epidemic threat, social isolation, unnecessary information overload by the media, panic buying requirements, and economic problems.¹ Studies on the relationship between gender and risk of PTSD showed that women are more prone to stress-related psychiatric disorders than men.^{15,16} At the same time, a study on marital status reported that married individuals experienced lower psychological distress than unmarried individuals after COVID-19

infection.¹⁷ Women and unmarried people in our country were riskier regarding PTSD after COVID-19.

There are studies on the predisposition to posttraumatic risk of PTSD with a low level of education.^{18,19} Zhang et al.,²⁰ in another study, it was reported that trauma scores increased as the level of education increased during the COVID-19 process. They attributed this result to the fact that people with higher education probably follow social media more and have more information about the possibilities that may happen to them. In our study, it was thought that the low level of education of the individuals increased the risk of PTSD. In another study evaluating PTSD due to COVID-19, nurses with lower education levels were found to have higher levels of PTSD.²¹ This situation may have been affected by the fact that people with low education levels used social media or rumors that would increase people's anxiety levels, rather than scientific sources, in accessing information about COVID-19.

Although studies suggest that the death of a close relative due to COVID-19 increases the risk of PTSD, our study found that the death of a relative due to COVID-19 does not increase the risk of PTSD.^{22,23} This result was thought to be related to the fact that the disease became better known in society compared to the first periods and the initiation of social vaccination at the time of our study.

A study on the relationship between symptom persistence and risk of PTSD after COVID-19 disease showed that the prolonged duration of COVID-19 symptoms significantly contributes to psychopathology.²⁴ Our results were consistent with this situation, which can be explained by the persistence of symptoms in individuals, creating more psychological pressure on the individual.

In a study on the psychological effect of the COVID-19 epidemic on healthcare workers at the beginning of the pandemic, IES was used, and PTSD symptoms were found in 63.0%.¹¹ Social isolation, uncertainty, fear of being infected, and reluctance to work were the reasons for the high-stress level of the employees during this period. In a study by Zhu et al.,²⁵ this rate was 30.0%. In our study, PTSD risk levels in the first three months after COVID-19; 26 (13.0%) of the individuals participating had a risk in terms of PTSD risk, and 174 (87%) had no risk. A study conducted on an Italian population showed a significant correlation between PTSD and COVID-19. The Italian population has registered a considerably high percentage of PTSD (29.5%). Due to the increase in knowledge about COVID-19 and the start of vaccination during the period of the study, the risk of PTSD in people with COVID-19 was

found to be lower than the risk seen in previous studies.²⁶

The most important limitation of this study is that this study was carried out with individuals who applied to Family Health Centers. However, to prevent potential taking sides, it was tried to reach all individuals who applied to Family Health Centers and had COVID-19 during the research dates. The pandemic period is a new community that people have not had any experience with before and must struggle individually and socially. Developing strategies for spiritual needs in future epidemics with the research and results obtained during the pandemic is essential. Our study shows that some groups are disadvantaged in terms of mental health. This population should be considered more during pandemic periods. In addition, applying psychological support programs to this population will protect public health.

Considering all the information in this study, the PTSD risk rate was high in women, in those whose marital status was single, in those whose educational status was at primary school and before, and whose findings persisted after COVID-19 infection.²⁷ This risky group with low mental stability is thought to be more vulnerable to epidemics. To protect the mental health of these people, there is a need for awareness-raising training and timely psychological intervention. In the patient follow-up conducted by primary care physicians during pandemic periods, the psychological status of individuals should be briefly questioned, and early intervention should be made for possible diagnoses.

In conclusion, the participants' risk level of post-COVID-19 traumatic stress disorder was found to be lower compared to the early times of the epidemic. It was thought that the better recognition of the disease in the community, the widespread use of vaccines, and the relaxation of restrictive measures such as quarantine were influential in determining the low PTSD risk level of the participants after COVID-19.

Ethics Committee Approval: This study was approved by the Manisa Celal Bayar University School of Medicine Clinical Research Ethics Committee (Date: 22.09.2021, decision no: 20.478.486/948) and approved by Manisa Provincial Health Department (Date: 16.12.2021, decision no: E-79593712-604.02.01). This study was carried out in accordance with international standards.

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