



Original Article

Post-traumatic stress disorder and stigma perception among healthcare professionals caring for COVID-19 patients

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Abstract

Objectives: The aim of this study was to determine the level of post-traumatic stress disorder (PTSD) and internalized stigma among healthcare workers caring for patients with coronavirus 2019 (COVID-19) during the height of the pandemic.

Methods: The data of this descriptive, cross-sectional study were collected online using a personal information form and the Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (PCL-DSM-5).

Results: The mean PCL-DSM-5 score of the healthcare professionals evaluated was 38.143 ± 17.30765 . When asked about their perception of stigma related to COVID-19, half of those who tested positive for COVID-19 concealed the diagnosis from neighbors and family, 91% of the participants felt the need to isolate themselves when potentially symptomatic, 60% stated that other people were trying to avoid them, and 66% reported symptoms of COVID-19.

Conclusion: Healthcare professionals who experienced possible symptoms of COVID-19 and chose to isolate themselves and those who felt that others were trying to stay away from them experienced more symptoms of PTSD. Our findings indicated that many healthcare workers who cared for patients with COVID-19 reported signs of internalized stigma and PTSD. These findings and other literature reports emphasize the need to provide healthcare professionals with appropriate emotional support in order to ensure employee welfare, retention, and quality care.

Keywords: COVID-19; healthcare professional; stigma; stress.

A novel virus that causes what was to become known as coronavirus 2019 (COVID-19) emerged in Wuhan, the capital of China's Hubei region, in December 2019. The virus can be transmitted very quickly from person to person, and soon spread around the world. On March 11, 2020, the World Health Organization declared a pandemic.^[1,2]

Healthcare systems were quickly overcome. There was no established treatment and the rapid increase in the number of cases and unpredictability of circumstances led to an increased workload and risk of infection for healthcare professionals, particularly those working on the frontline. Health professionals faced numerous challenges, both physical and psychological.^[3]

The difficult conditions in the early phases of the pandemic, including large numbers of patients, limited treatment op-

tions, often rapidly deteriorating condition of inpatients, the risk of infection, overwhelmed facilities, and required isolation due to the high transmissibility of the virus without emotional and social support, took a toll on healthcare workers.^[4,5] For some healthcare professionals, the burden and stress of the circumstances led to the emergence of post-traumatic stress disorder (PTSD).^[6]

PTSD is a psychiatric disorder that can develop following exposure to a traumatic event, such as war, disaster, or assault, or any set of circumstances that disrupts and overpowers an individual's defense and coping mechanisms.^[3] The effects of PTSD can threaten physical and mental health. Very serious symptoms of stress have been reported in healthcare employees since the outbreak of the newest coronavirus. Studies have also shown that the risk of PTSD increases with

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What is presently known on this subject?

• The sudden and severe impacts of the coronavirus 2019 pandemic had a particular effect on healthcare workers. A new and potentially deadly virus with rapid transmission created challenging circumstances and numerous concerns. Work hours were extended, facilities were often unprepared to manage the patient load, and healthcare professionals faced a variety of difficulties, including exposure to the disease, fear of transmitting the virus to others, and stigmatization as a result of their work. Many suffered mental health difficulties.

What does this article add to the existing knowledge?

• The results indicated that healthcare professionals experienced significant mental health symptoms due to the stressful environment during the pandemic. Internalized stigma, isolation, and other hardships contributed to post-traumatic stress disorder and other psychological effects.

What are the implications for practice?

• Providing frontline employees and others with adequate emotional and psychological support is important to preserving holistic health and the quality of treatment. Greater social awareness about the causes and negative consequences of social stigma would also be helpful. The findings of this study may be a useful resource for hospital and government administrators.

quarantine periods that exceed 10 days.^[7] In a cross-sectional study of healthcare professionals in Italy during the initial phase of the pandemic, it was determined that 50% of those studied had symptoms of PTSD, particularly those who had lost colleagues to COVID-19.^[8] Batra et al.^[9] conducted a meta-analysis and reported PTSD in 11.4% of healthcare workers. A report based on the statements of 14,825 healthcare professionals in China indicated that the primary reasons for PTSD during the pandemic were less social support and longer working hours.^[10]

Stigma can be an important consequence of working with COVID-19 patients.^[11] Fear and misinformation, particularly during the earliest outbreak and rapid spread of the disease, contributed to a risk of social stigma.^[12,13] Experiencing stigma while sacrificing to save lives was a source of additional psychological stress for healthcare workers.^[14] During epidemics of widespread infectious diseases, healthcare professionals are often stigmatized by people in their own communities. This was also the case during the COVID-19 epidemic.^[15] Research conducted with 529 physicians in Saudi Arabia during the COVID-19 outbreak revealed that 31% reported that they were worried about being stigmatized due to their profession, and 13.8% reported that they were worried about stigma affecting their family members.^[16] Other COVID-19 studies have also reported high perceptions of stigma among healthcare professionals.^[17–19]

Greater understanding and awareness of PTSD and perceptions of stigma among healthcare professionals due to the COVID-19 pandemic are important to ensure the well-being of staff and provide adequate continuity and quality of care to patients. The objective of this study was to assess the presence of PTSD and the perceptions of healthcare professionals related to stigma due to the COVID-19 outbreak and to determine the related needs of healthcare professionals.

Research Questions

- What is the level of PTSD experienced by healthcare professionals in Türkiye during the COVID-19 pandemic?
- What is the level of stigma perceived by healthcare professionals in Türkiye during the COVID-19 pandemic?

Materials and Method**Ethical Considerations**

The Ataturk University Faculty of Medicine Clinical Research Ethics Committee approved this study on May 7, 2020 (no: 52). Prior to commencing the study, all of the participants provided informed consent.

Study Design and Participants

This cross-sectional descriptive study was conducted between May and September 2020 with 300 healthcare professionals who were caring for COVID-19 patients in different provinces of the country. The data were collected using an online survey method (Google Forms; Google LLC, Mountain View, CA, USA).

The inclusion criteria were:

- 1) Healthcare professional
- 2) Aged 18-60 years
- 3) Ability to understand the questions
- 4) No diagnosed mental disorder, such as depression or anxiety disorder.

All of the participants provided informed consent electronically before registration with the study. Only those who agreed to participate voluntarily were included. Anonymous responses were permitted; however, only 1 response per person was accepted. There were no invalid questionnaires.

Data Collection Tools

A personal information form developed by the researchers based on relevant literature was used to determine sociodemographic characteristics and internalized stigma perception,^[13,20] and the Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (PCL-DSM-5) was used to collect the PTSD research data.

Personal Information Form: The researchers created a form to solicit details of sociodemographic characteristics, physical and mental status, and the internalized perception of stigma (such as not disclosing a positive diagnosis, quarantining themselves, and perceived changes in how others reacted to them).

Post-Traumatic Stress Disorder Checklist The original PCL developed by Weathers et al.^[21] comprised 17 items based on the DSM-III-R and is widely used as a measure of PTSD symptoms in the clinical field. The latest adaptation of the PCL according to the DSM-5 criteria is a 20-item self-report scale that uses a 5-point scale (scored 0-4) with a possible score range of 0-80. The PCL-5 consists of 4 domains using the PTSD symptom

Table 1. Mean PCL-DSM-5 Scores

PCL-DSM-5	Min	Max	Mean±SD
Subscales*	0.00	80.00	38.14±17.30
Re-experiencing (B criteria)	0.00	20.00	8.77±4.33
Avoidance (C criteria)	0.00	8.00	3.67±2.26
Negative alterations in cognition and mood (D criteria)	0.00	28.00	13.45±6.34
Hyper-arousal (E criteria)	0.00	24.00	12.25±6.21

PCL-DSM-5: Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Min: Minimum; Max: Maximum; SD: Standard deviation.

clusters described in the DSM-5: re-experiencing (B criteria), avoidance (C criteria), negative alterations in cognition and mood (D criteria), and hyper-arousal (E criteria). The reliability coefficients were originally reported to be .79-.92 for re-experiencing (B criteria), .73-.91 for avoidance (C criteria), .85-.90 for negative alterations (D criteria), and .81-.88 for hyper-arousal (E criteria). Test-retest reliability coefficients were determined to be .70, .64, .78, and .76, respectively. Boysan et al.^[22] adapted the scale into Turkish.

Statistical Analysis

IBM SPSS Statistics for Windows, Version 20.0 (IBM Corp., Armonk, NY, USA) software was used to analyze the data and perform descriptive calculations (percentiles, arithmetic mean, SD, min-max.). A t-test was used for 2 independent group comparisons of parametric data, analysis of variance was applied for group comparisons of ≥ 3 , and the Mann Whitney-U test/Kruskal-Wallis test was used for nonparametric data comparisons.

Results

Table 1 shows the mean PCL-DSM-5 scale scores. The mean total PCL-DSM-5 score was moderate: 38.1433 ± 17.30765 . The mean Re-experiencing (B criteria) subscale score was 8.77 ± 4.33 , while the mean was 3.67 ± 2.26 for the Avoidance (C criteria), 13.45 ± 6.34 for Negative alterations (D criteria), and 12.25 ± 6.21 in the Hyper-arousal (E criteria) subscales.

Table 2 illustrates a comparison of personal traits with the PCL-DSM-5 scale and subscale scores. The mean PTSD score was significantly higher in females, those aged ≤ 29 years, and nursing professionals. PTSD symptoms were also high but without statistical significance among those who were single, had a child, and worked in intensive care units. The subscale results also revealed a statistically higher score among females. The mean scores of the C and D criteria subscales of those aged ≥ 45 were also higher than those of other groups, and some subscale scores were statistically lower among medical professionals compared with other groups.

Table 3 provides a comparison of responses to questions regarding the COVID-19 outbreak and the mean PCL-DSM-5 scale scores. The results indicated that the PCL-DSM5 total and subscale scores were higher among those who found that the measures taken by the hospital in response to the pandemic were insufficient, those who stated that they were very worried about the COVID-19 outbreak, those who were pessimistic, and those who were scared and worn out. The mean B and C criteria subscale scores were higher among those who reported insufficient personal protective equipment, and the mean B criteria subscale score was significantly higher among those who reported that they had insufficient knowledge about COVID-19.

Table 4 provides an illustration of the answers to the questions evaluating stigma perception with the mean PCL-DSM-5 scale scores. The results indicated that the mean PCL-DSM5 scale and all subscale scores were higher in healthcare professionals who reported experiencing symptoms of COVID-19, and the mean PCL-DSM5 scale and B criteria subscale scores were statistically significantly higher among respondents who chose to isolate themselves. Although the mean PCL-DSM5 score was high among those who felt that other people were avoiding them, the difference was not statistically significant. The results showed that 16 of 300 healthcare professionals were diagnosed with COVID-19 and received treatment. Half of the healthcare professionals who were diagnosed hid this information from their family and neighbors.

Discussion

The COVID-19 pandemic and the burden on health professionals struck Türkiye as it did the rest of the world. Healthcare professionals faced unprecedented circumstances and as a result, also faced various psychological problems due to working conditions, disruption of family life, and overall uncertainty. This study investigated the signs of PTSD and the stigma perceptions of healthcare workers 1 month after the initial traumatic exposure in order to assess and define their mental state and contribute to beneficial psychological interventions.

Our findings revealed that healthcare professionals demonstrated a moderate level of PTSD and that negative thoughts (D criteria) were common. Yin et al.^[23] found that 3.8% of healthcare workers experienced PTSD and that re-experiencing (criterion B) was a frequent problem. Chua et al.^[24] found that 89% of respondents experienced psychological symptoms in a study of healthcare professionals at high risk during the severe acute respiratory syndrome (SARS) epidemic. Similarly, Park et al.^[25] found that the mental health of healthcare workers was affected during the Middle East respiratory syndrome coronavirus outbreak in South Korea. Stuijzand et al.^[26] reported that healthcare professionals working with patients diagnosed with COVID-19 were at high risk for problems such as psychological distress, insomnia, alcohol and drug abuse, PTSD, depression, anxiety, burnout, anger, and high perceived stress. During the SARS epidemic, it was observed that ap-

Table 2. Effect of personal traits on the PCL-DSM-5 scale scores

Variables	n (n=300)	B criteria subscale	C criteria subscale	D criteria subscale	E criteria subscale	PCL-DSM-5
		Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Gender						
Male	72	7.38±4.50	3.26±3.04	11.20±6.45	9.59±5.87	31.45±17.35
Female	228	9.20±4.19	3.79±1.94	14.16±6.15	13.08±6.09	40.25±16.78
Test and p value		t=-3.148 p=0.002	t=-1.753 p=0.081	t=-3.509 p=0.001	t=-4.274 p=0.001	t=-3.845 p<0.0001
Age (years)						
≤29	131	9.00±4.33	4.03±2.53	14.38±6.39	13.09±6.29	40.52±17.29
30-44	144	8.74±4.14	3.47±1.95	12.93±6.07	11.77±6.03	36.93±16.54
≥45*	25	7.68±5.29	2.84±2.13	11.52±7.04	10.60±6.68	32.64±20.24
Test and p value		F= 0.990 p=0.373	F=4.009 p=0.019	F=3.106 p=0.046	F=2.537 p=0.081	F=2.896 p=0.050
Marital status						
Married	193	8.78±4.44	3.64±2.50	13.38±6.49	12.30±6.28	38.12±17.75
Single/widowed	107	8.74±4.15	3.71±1.75	13.57±6.08	12.14±6.10	38.17±16.54
Test and p value		t=0.066 p=0.947	t=-0.229 p=0.819	t=-0.237 p=0.813	t=0.208 p=0.835	t=-0.25 p=0.980
Parental status						
No children	148	8.52±4.21	3.70±1.89	13.59±6.09	12.19±6.22	38.02±16.82
1	70	9.24±4.62	3.91±3.16	13.85±7.08	12.24±6.48	39.25±19.19
≥2	82	8.80±4.30	3.40±1.92	12.85±6.15	12.35±6.02	37.41±16.62
Test and p value		F=0.650 p=0.523	F=0.997 p=0.370	F=0.543 p=0.581	F=0.017 p=0.983	F=0.220 p=0.802
Living with a relative aged ≥65						
Yes	28	6.96±5.16	2.85±2.13	11.67±6.18	10.28±6.21	31.78±18.47
No	272	8.95±4.20	3.75±2.16	13.63±6.34	12.45±6.18	39.79±17.08
Test and p value		U:2859.000 p=0.029	U:2868.500 p=0.029	U:3198.000 p=0.162	U:3102.000 p=0.106	U:2936.500 p=0.040
Profession						
Doctor*	37	6.08±4.03	2.56±1.96	10.05±5.70	8.32±4.94	27.02±15.15
Nurse	200	9.12±4.05	3.83±2.32	13.87±5.99	12.94±5.98	39.76±16.20
Other assisting staff	63	9.23±4.83	3.80±2.04	14.11±7.20	12.36±6.79	39.52±19.60
Test and p value		F= 8.554 p<0.0001	F=5.112 p=0.006	F=6.309 p=0.002	F=9.095 p<0.0001	F=9.187 p<0.0001
Work clinic						
Intensive care unit	39	9.17±4.03	3.87±1.96	14.51±6.07	12.53±5.67	40.10±15.94
Internal medicine clinic	64	8.42±4.35	3.50±1.81	13.17±6.38	11.87±6.16	36.96±17.51
Surgical clinic	54	7.83±3.72	3.22±1.98	12.00±5.35	11.18±5.71	34.24±14.86
Other**	143	9.16±4.58	3.86±2.58	13.83±6.34	12.74±6.54	39.60±18.29
Test and p value		F=1.504 p=0.214	F=1.269 p=0.285	F=1.534 p=0.206	F=0.932 p=0.426	F=1.530 p=0.207

*Significant group. **Emergency, analysis lab, imaging center. PCL-DSM-5: Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. SD: Standard deviation.

proximately 10% of Beijing hospital workers developed symptoms of PTSD. Employees who were quarantined and those who worked in high-risk environments or have friends or close

relatives who contracted SARS were 2 to 3 times more likely to develop symptoms of PTSD.^[26,27] Among the reasons health-care workers were adversely affected during the COVID-19

Table 3. Effect of Thoughts about the COVID-19 outbreak on PCL-DSM-5 scale scores

Variables	n (n=300)	B criteria	C criteria	D criteria	E criteria	PCL-DSM-5
		subscale	subscale	subscale	subscale	
		Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Do you have enough personal protective equipment?						
Yes	112	7.85±3.99	3.32±1.83	12.66±6.11	11.42±5.95	35.28±16.42
No	188	9.31±4.44	3.87±2.46	13.91±6.44	12.73±6.32	39.84±17.63
Test and p value		t=-2.849 p=0.005	t=-2.071 p=0.039	t=-1.637 p=0.103	t=-1.774 p=0.77	t=-2.222 p=0.020
Is your knowledge of COVID-19 sufficient?						
Yes	174	8.15±4.27	3.58±2.46	13.09±6.38	11.83±6.36	36.67±17.32
No	126	9.61±4.29	3.78±1.95	13.94±6.28	12.81±5.97	40.16±17.14
Test and p value		t=-2.924 p=0.004	t=-0.753 p=0.452	t=-1.142 p=0.255	t=-1.348 p=0.179	t=-1.729 p=0.08
Are the measures taken by your hospital against COVID-19 sufficient?						
Yes	129	7.76±4.00	3.23±1.76	12.51±5.74	11.26±5.70	34.77±15.62
No	171	9.52±4.42	4.00±2.52	14.16±6.69	12.99±6.49	40.68±18.10
Test and p value		t=-3.547 p<0.0001	t=-2.946 p=0.003	t=-2.248 p=0.025	t=-2.407 p=0.017	t=-2.965 p<0.001
Does the COVID-19 outbreak worry you?						
Worried*	196	8.77±4.24	3.72±2.37	13.37±6.32	12.17±6.04	38.04±17.02
Very worried*	52	10.61±3.90	4.28±1.75	15.76±5.79	14.78±5.60	45.46±15.57
Not worried*	52	6.90±4.34	2.84±2.08	11.44±6.29	10.00±6.60	31.19±17.34
Test and p value		F=10.118 p<0.0001	F=5.616 p=0.004	F=6.311 p=0.002	F=8.134 p<0.0001	F=9.339 p<0.001
Does the COVID-19 outbreak scare you?						
Yes	243	9.16±4.06	3.86±2.24	13.94±5.91	12.77±5.94	39.74±16.24
No	57	7.10±5.04	2.85±2.16	11.35±7.63	1.01±6.88	31.33±20.00
Test and p value		t=3.274 p=0.001	t=3.046 p=0.003	t=2.812 p=0.005	t=3.056 p=0.002	t=3.357 p<0.001
Do you have pessimistic thoughts about the COVID-19 outbreak?						
Yes	200	9.74±3.98	3.96±2.36	14.57±6.00	13.49±5.91	41.77±16.18
No	100	6.82±4.36	3.09±1.92	11.21±6.43	9.76±6.07	30.88±17.27
Test and p value		t=5.805 p<0.0001	t=3.188 p=0.002	t=4.466 p<0.0001	t=5.110 p<0.0001	t=5.374 p<0.0001
Does your hospital have a COVID-19 treatment protocol?						
Yes	175	8.76±4.06	3.62±1.89	13.14±5.98	11.97±6.00	37.50±16.18
No	125	8.77±4.70	3.73±2.69	13.88±6.81	12.63±6.50	39.03±18.79
Test and p value		t=-0.020 p=0.984	t=-0.426 p=0.670	t=-1.003 p=0.317	t=-0.900 p=0.369	t=-0.751 p=0.450
Are you feeling worn out due to the COVID-19 outbreak?						
Yes	255	9.25±4.17	3.88±2.28	14.07±6.18	12.93±6.14	40.14±16.80
No	45	6.00±4.22	2.44±1.64	9.95±6.17	8.37±5.10	26.77±15.80
Test and p value		U:3327.500 p<0.0001	U:3401.500 p<0.0001	U:3614.500 p<0.0001	U:3355.500 p<0.0001	U: 3198.500 p<0.0001
Do you think COVID-19 is fatal?						
Yes	253	8.96±4.35	3.77±2.31	13.62±6.40	12.33±6.21	38.69±17.42
No	47	7.74±4.12	3.10±1.87	12.53±5.98	11.76±6.27	35.14±16.50
Test and p value		U:5005.500 p=0.084	U:4947.500 p=0.063	U:5359.500 p=0.282	U:5665.500 p=0.608	U: 5266.500 p=0.210

*Significant group. PCL-DSM-5: Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Table 4. Internalized stigma perception of healthcare professionals due to COVID-19 and its effect on PCL-DSM-5 scores

Variables	n (%)	B criteria subscale	C criteria subscale	D criteria subscale	E criteria subscale	PCL-DSM-5
		Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
*If you were diagnosed with COVID-19, did you share the news with neighbors/friends?						
Yes	8	12.87±3.79	5.50±1.85	18.30±3.38	17.00±3.62	53.87±11.29
No	8	10.12±5.30	4.00±1.92	14.87±7.03	14.37±7.52	43.37±20.66
*Have you been diagnosed and treated for COVID-19?						
Yes	16	11.50±4.67	4.75±1.98	16.68±5.65	15.68±5.86	48.62±16.97
No	284	8.61±4.27	3.60±2.26	13.27±6.34	12.05±6.18	37.55±17.16

*Since the groups were small and not distributed proportionately, further analysis was not performed. PCL-DSM-5: Post-Traumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

pandemic were long work hours, physical fatigue, risk of infection, lack of protective equipment, and loneliness, often due to separation from their families.^[2] Those who dealt directly with infected patients have been reported to be more at risk of psychological effects.^[28] The uncertainty surrounding the outbreak of the novel virus that causes COVID-19 and possible future complications may also have led to negative thoughts in healthcare workers. The results of this study were consistent with the findings of previous studies.

In this study, all of the mean subdimension PTSD and total PTSD scores of female healthcare professionals were higher than those of males. It was reported in a study evaluating 5062 healthcare personnel in Wuhan, China, that female gender was a common sociodemographic risk factor for depression, acute stress, and anxiety symptoms.^[29] Other similar studies have also found that women were among those who experienced more negative consequences in the COVID-19 outbreak.^[30–32] Huang et al.^[33] evaluated PTSD among healthcare professionals and noted that the prevalence of anxiety was higher in women. The results of the present study were consistent with the literature reports. The role of gender in reactions to stress levels is relevant, but is complex.^[11]

Our findings indicated that healthcare workers aged ≤29 experienced more symptoms of PTSD; in particular, avoidance (C criteria) and negative thoughts (D criteria). Yin et al.^[23] also reported more avoidance (C criteria) and negative thoughts (D criteria) among healthcare professionals aged 20–30 years.

We observed that PTSD symptoms were higher among nurses than other occupational groups. Similarly, literature results have also noted that nurses were more affected by psychological problems.^[30,33] As frontline employees, nurses were faced with extremely stressful conditions in terms of workload and various challenging circumstances providing one-on-one care to COVID-19 patients, as well as social isolation.

Healthcare workers who noted that the supply of personal protective equipment and other measures taken by the hospital against the pandemic were inadequate also reported more symptoms of PTSD. This emphasizes the importance of physical and environmental security measures provided by hospital managers and the reliance on the professionalism and expertise of healthcare workers. Healthcare professionals who had greater confidence in the infection control procedures expressed less emotional exhaustion and frustration. A high perception of personal risk predicted PTSD symptoms.^[26]

Similarly, the healthcare professionals who expressed significant worry about the pandemic, had pessimistic or fearful thoughts, or described themselves as worn out had a higher prevalence of PTSD. It has previously been established that an excessive perception of a threat may lead to exaggerated responses to the likelihood and consequences of adverse events as well as a greater sense of vulnerability.^[34]

The study results indicated that half of the healthcare professionals surveyed who were diagnosed with COVID-19 and received treatment hid this situation from their family and neighbors. This response suggests an internalized perception of stigma. The findings also revealed that 60% of the study participants felt that people were avoiding contact with them. Another study that examined the perception of social stigma among healthcare professionals during the COVID-19 outbreak reported that 51.2% expressed a similar sentiment.^[17]

The participants in our study who felt that others in the general public were avoiding them had a higher mean PTSD score. Stigma has become a serious problem for healthcare professionals, and this was particularly true during the COVID-19 pandemic. During widespread outbreaks of infectious diseases, healthcare workers are often stigmatized by the community.^[15]

In a study conducted in the United States and Canada during the COVID-19 pandemic, an online questionnaire on stigma-

tizing healthcare professionals administered to 3551 participants revealed that more than a quarter of the respondents stated that healthcare workers should be kept separate from their communities and families. More than one-third of the respondents reported that they avoided healthcare professionals for fear of infection.^[35] In another study conducted during the pandemic, nearly one-third (31%) of the 529 physicians who participated reported that they were concerned about being stigmatized due to their profession as healthcare workers and 13.8% stated that they were worried about stigma and avoided family members due to a potential risk.^[36]

The PTSD score of healthcare professionals who noted that they wanted to isolate themselves when they felt like they were experiencing COVID-19 symptoms was high. Healthcare professionals were often under great pressure during the pandemic and worked nonstop to treat patients, regardless of their own needs. Many elected to quarantine themselves given the possibility that they could spread the infection to their loved ones.^[37] The pressure to perform and to protect others, in combination with stigmatization and isolation were likely contributors to symptoms of PTSD.^[17] Measures that offer information, guidance, and support will reduce the risk of stigmatization and PTSD. These include ensuring adequate personal protective equipment to minimize the risk of infection in the healthcare environment and appropriate workload scheduling and communication that does not lead to undue physical or psychological stress. Psychosocial solidarity in society will also help to preserve mental health among healthcare workers and ensure greater quality of care and social cohesion.

Limitations

One limitation of this study is that the participants were professionals working during the pandemic with COVID-19 patients and therefore the findings cannot be generalized to all healthcare workers. While we attempted to reach as many healthcare professionals as possible, some were unable to participate due to the exceptional conditions at the time. Similarly, restrictions on public interactions due to the pandemic meant that we were unable to meet face-to-face with the participants.

Conclusion

COVID-19 quickly became a global threat due to rapid transmission and high mortality rates. Health professionals continued to serve on the frontline despite personal risk and some suffered from stigmatization and PTSD. Greater efforts to provide the necessary education and support mechanisms to ease an already challenging environment will offer healthcare workers the resources they need to remain healthy and provide high quality care.

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References

1. WHO. Coronavirus (COVID-19) Dashboard (2021). Available at: <https://covid19.who.int/>. Accessed Jun 3, 2020.
2. Liu S, Yang L, Zhang C, Xiang YT, Liu Z, Hu S, et al. Online mental health services in China during the COVID-19 outbreak. *Lancet Psychiatry* 2020;7:e17–8.
3. Xiao H, Zhang Y, Kong D, Li S, Yang N. The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in january and february 2020 in China. *Med Sci Monit* 2020;26:e923549.
4. Hoşgör DG, Tanyel TÇ, Cin S, Demirsoy SB. Burnout in healthcare professionals during the Covid-19 pandemic: A case of Istanbul province. *Eur J Res Soc Econom* 2021;8:372–86.
5. Bandyopadhyay S, Baticulon RE, Kadhum M, Alser M, Ojuka DK, Badereddin Y, et al. Infection and mortality of healthcare workers worldwide from COVID-19: A systematic review. *BMJ Glob Health* 2020;5:e003097.
6. Huremovic D. Quarantine and isolation: Effects on healthcare workers. In: Huremovic D. editor. *Psychiatry of pandemics, a mental health response to infection outbreak*. Switzerland: Springer; 2019.
7. Yüncü V, Yılan Y. Investigating the impacts of Covid-19 pandemic on healthcare staff: A case study. *Igdir Univ J Soc Sci* 2020;373–401.
8. Rossi R, Socci V, Pacitti F, Di Lorenzo G, Di Marco A, Siracusa A, et al. Mental health outcomes among frontline and second-line health care workers during the coronavirus disease 2019 (COVID-19) pandemic in Italy. *JAMA Netw Open* 2020;3:e2010185.
9. Batra K, Singh TP, Sharma M, Batra R, Schvaneveldt N. Investigating the psychological impact of COVID-19 among healthcare workers: A meta-analysis. *Int J Environ Res Public Health* 2020;17:9096.
10. Song X, Fu W, Liu X, Luo Z, Wang R, Zhou N, et al. Mental health status of medical staff in emergency departments during the Coronavirus disease 2019 epidemic in China. *Brain Behav Immun* 2020;88:60–5.
11. Malas EM, Malas H. Evaluation of stigma and perception of stigma in healthcare workers during the COVID-19 period. *J Süleyman Demirel Univ Inst Soc Sci* 2021;2:172–97.
12. Canada Center For Occupational Health And Safety. Coronavirus (COVID-19) tips. Preventing Stigma 2020. Available at: <https://www.ccohs.ca/newsletters/hsreport/issues/current.html#hsreport-ontopic>. Accessed Oct 23, 2020.
13. Ertem, M. Covid-19 pandemia and social stigmatization. *J Izmir Kâtip Celebi Univ Fac Health Sci* 2020;5:135–8.
14. Yılmaz Y, Erdoğan A, Hocaoglu C. COVID-19 and stigma. *Kocaeli Med J* 2020;10:47–55.
15. Bagcchi S. Stigma during the COVID-19 pandemic. *Lancet In-*

- fect Dis 2020;20:782.
16. Al Sulais E, Mosli M, AlAmeel T. The psychological impact of COVID-19 pandemic on physicians in Saudi Arabia: A cross-sectional study. *Saudi J Gastroenterol* 2020;26:249–55.
 17. Bana PE. Evaluation of the social implication perception of healthcare employees in the Covid19 outbreak process. *Presacademia* 2020;11:115–20.
 18. Teksın G, Uluyol ÖB, Onur ÖS, Teksın MG, Özdemir HM. Türkiye’de COVID-19 pandemisi süresince sağlık çalışanları üzerinde damgalanma ile ilişkili faktörlerin ve bunların etkilerinin incelenmesi: Çok merkezli araştırma. *J Süleyman Demirel Univ Inst Soc Sci* 2020;54:281–90.
 19. Tuncay FE, Koyuncu E, Özel ŞA. Review of protective and risk factors affecting psychosocial health of healthcare workers in pandemics. *Ankara Med J* 2020;2:488–501.
 20. Oflaz F, Özcan CT, Taştan S, Çiçek H, Aslan Ö, Vural H. Nurses’ recognition of post-traumatic stress disorder symptoms. *J Psy Nurs* 2010;1:1–6.
 21. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP. The PTSD checklist for DSM-5 (PCL-5). 2013. Available at: <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>. Accessed Sep 26, 2022.
 22. Boşsan M, Özdemir PG, Özdemir O, Selvi Y, Yılmaz E, Kaya N. Psychometric properties of the Turkish version of the PTSD checklist for diagnostic and statistical manual of mental disorders, fifth edition (PCL-5). *Psychiatry and Clin Psychopharmacol* 2017;27:306–16.
 23. Yin Q, Sun Z, Liu T, Ni X, Deng X, Jia Y, et al. Posttraumatic stress symptoms of health care workers during the corona virus disease 2019. *Clin Psychol Psychother* 2020;27:384–95.
 24. Chua SE, Cheung V, Cheung C, McAlonan GM, Wong JW, Cheung EP, et al. Psychological effects of the SARS outbreak in Hong Kong on high-risk health care workers. *Can J Psychiatry* 2004;49:391–3.
 25. Park JS, Lee EH, Park NR, Choi YH. Mental health of nurses working at a government-designated hospital during a MERS-CoV outbreak: A cross-sectional study. *Arch Psychiatr Nurs* 2018;32:2–6.
 26. Stuijzand S, Deforges C, Sandoz V, Sajin CT, Jaques C, Elmers J, et al. Psychological impact of an epidemic/pandemic on the mental health of healthcare professionals: A rapid review. *BMC Public Health* 2020;20:1230.
 27. 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;54:302–11.
 28. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 2020;52:102066.
 29. Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic-A review. *Asian J Psychiatr* 2020;51:102119.
 30. Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, et al. COVID-19 in Wuhan: Immediate psychological impact on 5062 health workers. *MedRxiv*; 2020.
 31. Tian F, Li H, Tian S, Yang J, Shao J, Tian C. Psychological symptoms of ordinary Chinese citizens based on SCL-90 during the level I emergency response to COVID-19. *Psychiatry Res* 2020;288:112992.
 32. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *Gen Psychiatr* 2020;33:e100213.
 33. Huang JZ, Han MF, Luo TD, Ren AK, Zhou XP. Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi [Article in Chinese]* 2020;38:192–5.
 34. Taylor S. *The psychology of pandemics: Preparing for the next global outbreak of infectious disease*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2019.
 35. Taylor S, Landry CA, Rachor GS, Paluszek MM, Asmundson GJG. Fear and avoidance of healthcare workers: An important, under-recognized form of stigmatization during the COVID-19 pandemic. *J Anxiety Disord* 2020;75:102289.
 36. Mostafa A, Sabry W, Mostafa NS. COVID-19-related stigmatization among a sample of Egyptian healthcare workers. *PLoS One* 2020;15:e0244172.
 37. Yılmaz Y, Erdoğan A, Hocaoglu Ç. COVID-19 ve Damgalanma (COVID-19 and Stigma). *Kocaeli Med J*, 2021;10:47–55.