Burnout of Healthcare Professionals Working in COVID-19 Contact Tracing Teams

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ABSTRACT

Objectives: This study aims to determine the burnout level of healthcare professionals who worked in the contact tracing teams during the pandemic and the factors affecting it.

Methods: In this cross-sectional study, healthcare professionals working in the contact tracing teams of health districts in Istanbul between March and June 2020 were included. The questionnaire created over Google Forms was shared via social media (WhatsApp) groups of the teams in all districts in Istanbul. In the first part of the questionnaire, working conditions during the pandemic and the psychosocial effects of the pandemic were questioned. The data obtained via Maslach Burnout Scale were analyzed statistically in the second part.

Results: Of the 485 participants, 350 (72.2%) were females, and 280 (57.7%) were dentists. The weekly average working time was 36.0 (1.0–117.0) h. The median score for emotional exhaustion (EE), depersonalization (DP), and personal achievement was 31.0 (20.0–39.0), 12.0 (4.0–24.0), and 27.0 (14.0–40.0), respectively. There was a negative correlation between age and EE and DP (r=-0.128, p=0.005 and r=-0.254, p<0.001, respectively), and a positive correlation between age personal achievement (r=0.157, p=0.001). EE and DP were positively correlated with working duration (r=0.287, p<0.001 and r=0.177, p<0.001, respectively). Being away from home and experiencing disruption in the care of relatives significantly increased EE (p=0.009 and p=0.005, respectively).

Conclusion: Factors affecting burnout in healthcare workers are psychosocial problems rather than intense working conditions. Providing social and psychological support to healthcare professionals and their families can be effective in dealing with burnout.

Keywords: Burnout, contact tracing, COVID-19, occupational burnout

INTRODUCTION

COVID-19, severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), infection was first seen in Wuhan, China, in December 2019; it was recognized as a "pandemic" by the World Health Organization in March 2020.[1] The first case in Turkey was reported in March 2020, and since then, contact tracing teams have been formed nationwide through district health directorates, which carry out tasks such as reporting test results to patients, identifying and recording contacts of positive people, delivering appropriate medication to patients, and taking samples from close contacts. While these teams are mainly composed of healthcare workers from the district health directorate, in parallel with the increase in the number of cases, dentists and technicians have been assigned to work in teams with the cessation of service except for emergencies in oral and dental hospitals. Although working densities follow a fluctuating course in line with the current number of cases, the psychological effects of the pandemic sometimes make working conditions difficult.[2] In particular, the anxiety of being sick and carrying the infection and the fatigue of the prolonged daily working hours

brought some psychological risks to the staff working in these teams. The psychological effects of pandemics on healthcare workers include anxiety, depression, post-traumatic stress disorder, anger, fear, guilt, irritability, frustration, sleep disturbance, and burnout.[3]

There are several studies examining COVID-19-related burnout in healthcare professionals. Although these studies were mostly carried out in COVID-19 services of hospitals or among primary care employees who provide active polyclinic services, they give a general idea about the causes of burnout in healthcare workers. In one study carried out by health workers working in the pandemic, depression, anxiety, insomnia, and distress syndrome have been found to be very common.[4] According to the literature, the main reasons that trigger burnout in healthcare workers are high job stress, high time pressure and workload, and poor organizational support.[5,6]

This study aims to determine the burnout of healthcare workers during the COVID-19 pandemic process and to draw attention to the triggering factors, especially in contact tracing teams.

METHOD

In this cross-sectional study, it was planned to reach all healthcare professionals who worked in contact tracing in Istanbul between March and June 2020. A questionnaire prepared on Google Forms was delivered to the teams in all district health directorates of Istanbul via social media (WhatsApp) groups. In the first part of the questionnaire, sociodemographic information and general health data were recorded, and in the second part, the Maslach Burnout Scale (MBS) was applied.[7,8] The MBS has been translated into Turkish, and Ergin showed its reliability and validity.[8] The MBS evaluates the primary areas of emotional exhaustion (EE) (9 questions), depersonalization (DP) (5 questions), and personal accomplishment (PA) (8 questions).[9] In the original form of the MBS, a 7-point Likert scale was used, but in the Turkish validity form, a 5-point Likert-type scale (0=never, 1=very rarely, 2=sometimes, 3=often, 4=always) was used. Accordingly, EE is calculated as 0–36 points, DP is 0–20 points, and PA is 0–32 points. As a result of the evaluation of the scale, it is expected that individuals with burnout will have high EE and DP scores and low PA scores. The MBS and its subscales have no cut-off value. However, subgroup scores can be interpreted as low or moderately high. Scores ≤20 are considered low, 21–27 moderate, and ≥28 high for EE; ≤8 low, 9–12 moderate, and ≥13 high for DP; ≤23 low, 24–27 moderate, and ≥28 high for PA.[10,11]

As stated in the description of the questionnaire, responding to the questions showed that they accepted to participate in the study, and no written consent was obtained.

According to the information obtained from the Istanbul Provincial Health Directorate, the number of teams is changing day by day in Istanbul. The sample size was calculated using a prevalence of 50%, a margin of error of 5%, a confidence level of 95%, and missing data of 20%. The target sample size was found to be 461 participants, and it was achieved.

Statistical analysis of the study was performed by IBM Statistics (SPSS) version 20.0. Frequency, percentage, mean, standard deviation, median, maximum, and minimum values were used as descriptive statistics. Normality analysis of continuous variables was performed with the Kolmogorov–Smirnov test and the Shapiro–Wilk test. The Mann–Whitney U test was used to analyze the differences between the median of two independent groups in all continuous variables that did not normally distribute. The Kruskal–Wallis test was used for the differences between the medians of more than two independent groups. Spearman's correlation test was used for continuous variables. A p-value of <0.05 was deemed significant for this study.

RESULTS

The mean age of the 485 people participating in the study was 33.3±7.8 years. Of these, 105 (21.6%) participants were diagnosed with a chronic disease, and 248 (51.1%) participants had been in the team for more than 6 months. The number of participants who had not heard the term "contact tracing" before was 378 (77.9%), and 400 (82.5%) of them did not take part in contact tracing studies before. The sociodemographic characteristics and professional experiences of the participants are summarized in Table 1.

In the MBS evaluation of the participants, the median score for EE was 31.0 (20.0–39.0), the median score for DP was 12.0 (4.0–24.0) and the median score for PA was 27.0 (14.0–40.0).

There was a negative correlation between age and EE and DP (r=-0.128, p=0.005 and r=-0.254, p<0.001, respectively), and a positive relationship between personal achievement (r=0.157, p=0.001). EE and DP were positively correlated with working duration (r=0.287, p<0.001 and r=0.177, p<0.001, respectively). The correlation between working duration and PA was not statistically significant (r=-0.163, p=0.167). The sociodemographic and occupational features of the participants according to the MBS subscores are summarized in Table 2.

Table 1. Sociodemographic characteristics and professional experiences of the participants

	n (%)		n (%)
Gender		4 months	42 (8.7)
Female	350 (72.2)	5 months	36 (7.4)
Male	135 (27.8)	≥6 months	248 (51.1)
Marital Status		Smoking status	
Single	216 (44.6)	Never smoker	262 (54.0)
Divorced/widowed	19 (3.9)	Have quit smoking	55 (11.3)
Married	250 (51.5)	Occasional smoker	85 (17.5)
Children younger than 18 years of age		Regular smoker	83 (17.2)
None	295 (60.8)	Change in smoking status	
1 child	104 (21.4)	Not changed	356 (73.4)
2 children	73 (15.1)	Quit smoking during the pandemic	11 (2.3)
≥3 children	13 (2.7)	Decreased	15 (3.1)
Occupation		Increased	103 (21.2)
Dentist	280 (57.7)	Alcohol consumption	
Medical doctor	50 (10.3)	Never consumed	254 (52.4)
Nurse/midwife/health officer	87 (18.0)	Rare drinker	160 (33.0)
Other healthcare personnel	68 (14.0)	1–2 times a week	47 (9.7)
Years in the occupation		>2 times a week	24 (4.9)
<1 year	55 (11.3)	Change in alcohol consumption	
1–5 years	145 (29.9)	Not changed	394 (81.2)
6–10 years	88 (18.1)	Quit drinking during the pandemic	8 (1.7)
>10 years	197 (40.7)	Decreased	27 (5.6)
Duration of work in contact tracing teams		Increased	56 (11.5)
>1 month	30 (6.2)		Mean±SD
1 month	20 (4.1)	Age (years) (n=485)	33.3±7.8
2 months	59 (12.2)		Median (min–max)
3 months	50 (10.3)	Working time in contact tracing (h/week) (n=485)	36.0 (1.0–117.0)

SD: Standard deviation.

Seventy-one (14.6%) of the participants had COVID-19 infection during this period and 194 (40.0%) were isolated from other individuals in their homes. The features of the participants regarding the COVID-19 infection according to the MBS subscores are summarized in Table 3.

When the reasons for anxiety of the participants about COVID-19 were examined, 435 (89.7%) of the respondents were concerned about COVID-19 infection for their own health, 479 (98.8%) for the health of their relatives, and 470 (97.0%) of them thought that their duty in the pandemic might pose a risk to the health of their relatives.

DISCUSSION

The COVID-19 pandemic is defined as a psychological trauma for healthcare professionals.[12,13] In this context, there are many studies investigating the psychological effects of the process on healthcare professionals. However, the

investigation of burnout in contact tracing teams reveals the results of one of its own strategies to combat the epidemic in Turkey. In this study, the rate of those who run out of their work was found to be 58.1%, which is above the literature data.[6] As in many studies, age was defined as a factor associated with burnout in Turkey.[3,4,14] There are studies in the literature indicating that women have a higher risk of anxiety, depression, and posttraumatic stress. In the study conducted by Li et al. on female healthcare workers, working in the profession for more than 10 years, having a chronic disease, and having 2 or more children were identified as common risk factors for depression, anxiety, and acute stress.[15] Similarly, Matsuo et al. reported that burnout is high in women, young people, and people with less professional experience.[11] In this study, while less than 1 year in the profession increased DP and EE, chronic disease and having more than 2 children did not increase burnout. Many studies have shown that having a COVID-19 infection

Table 2. Sociodemographic and occupational features of the participants according to the MBS subscores

	Emotional exhaustion		Depersonalization		Personal accomplishment	
	Median (min–max)	p	Median (min–max)	p	Median (min–max)	p
Gender						
Female (n=350)	31.0 (23.0–38.0)	0.257[*]	13.0 (4.0–23.0)	0.306[*]	26.0 (16.0–40.0)	<0.001[*]
Male (n=135)	31.0 (20.0–39.0)		12.0 (5.0– 24.0)		29.0 (14.0–36.0)	
Marital Status						
Single (n=216)	31.0 (20.0–39.0)	0.579[†]	12.0 (4.0–24.0)	0.092[†]	27.0 (16.0–40.0)	0.331[†]
Divorced/widowed (n=19)	30.0 (21.0–36.0)		10.0 (5.0–20.0)		28.0 (22.0–35.0)	
Married (n=250)	31.0 (21.0–38.0)		12.5 (5.0–24.0)		27.0 (14.0–40.0)	
Chronic disease history						
Yes (n=105)	31.0 (24.0–38.0)	0.963[*]	12.0 (4.0–24.0)	0.486[*]	28.0 (14.0–39.0)	0.105[*]
No (n=380)	31.0 (20.0–39.0)		12.0 (5.0–23.0)		27.0 (16.0–40.0)	
Occupation						
Dentist (n=280)	32.0 (20.0–37.0)	0.001[†]	13.0 (5.0–24.0)	<0.001[†]	26.0 (16.0–39.0)	<0.001[†]
Medical doctor (n=50)	30.0 (24.0–37.0)		11.5 (5.0–21.0)		27.0 (20.0–33.0)	
Nurse/midwife/health officer (n=87)	30.0 (23.0–38.0)		10.0 (4.0–24.0)		29.0 (14.0–36.0)	
Other healthcare personnel (n=68)	30.5 (21.0–39.0)		12.0 (5.0–23.0)		28.0 (18.0–40.0)	
Years in the occupation						
<1 year (n=55)	30.0 (23.0–37.0)	0.004[†]	13.0 (5.0–21.0)	<0.001[†]	27.0 (18.0–34.0)	<0.001[†]
1–5 years (n=145)	31.0 (21.0–39.0)		15.0 (5.0–23.0)		26.0 (16.0–39.0)	
6–10 years (n=88)	32.0 (22.0–37.0)		12.0 (5.0–22.0)		26.0 (17.0–36.0)	
≥10 years (n=197)	31.0 (20.0–38.0)		11.0 (4.0–24.0)		28.0 (14.0–40.0)	

MBS: Maslach burnout scale.

[*]Mann–Whitney U test, [†]Kruskal–Wallis test.

increases depression, anxiety, and posttraumatic stress.[4,15,16] A similarly positive relationship was found in this study in terms of burnout, which is one of the underlying conditions for posttraumatic stress syndrome.

In studies investigating anxiety factors in healthcare professionals during the pandemic process, being infected, infecting their relatives, having problems in the care of children, and having problems in the care of other relatives are among these factors.[9,17] In this study, separation of the participants from the people they live with and having problems in the care of their relatives were factors that increased burnout.

Another point that should be emphasized in this study is the level of burnout of dentists in the contact tracing teams. Dentists were the group with the highest scores of EE and DP among occupational groups. In addition to the increase in contact with the risky patient, it was thought that starting to work in an inexperienced area was also effective in this result. Studies comparing burnout levels among occupational groups are limited. In addition, in many studies, groups were divided into physicians, nurses, and other health workers. In the study conducted by Akova et al., high EE and DP scores were seen more frequently in physicians, and also low PA scores were more prominent in this group.[10] In the study of Shanafelt et al., it was stated that the anxiety of "starting to work in a new medium and being competent in this field" is a stressor for healthcare professionals, which supported our comment.[17]

One of the limitations of this study is that the study was conducted in a limited area. In terms of examining the causes of burnout, studies planned with in-depth interviews can be more effective in taking a solution-oriented path.

CONCLUSION

For healthcare professionals, as in many professions, the COVID-19 pandemic is a stressor that can trigger trauma and psychological problems. Healthcare workers working

Table 3. Features of the participants regarding the COVID-19 infection according to the MBS subscores

	Emotional exhaustion		Depersonalization		Personal accomplishment	
	Median (min–max)	p	Median (min–max)	p	Median (min–max)	p
Infected by COVID-19						
Yes (n=71)	32.0 (23.0–37.0)	0.001[*]	14.0 (5.0–21.0)	0.027[*]	26.0 (17.0–35.0)	0.107[*]
No (n=414)	31.0 (20.0–39.0)		12.0 (4.0–24.0)		27.0 (14.0–40.0)	
Isolated from other individuals in their home						
Yes (n=194)	32.0 (21.0–39.0)	0.009[*]	14.0 (4.0–24.0)	<0.001[*]	27.0 (14.0–40.0)	0.756[*]
No (n=291)	31.0 (20.0–38.0)		11.0 (5.0–23.0)		27.0 (16.0–39.0)	
Problems with the care of relatives						
Yes (n=135)	32.0 (21.0–39.0)	0.002[*]	12.0 (4.0–24.0)	0.790[*]	27.0 (14.0–39.0)	0.626[*]
No (n=350)	31.0 (20.0–38.0)		12.0 (5.0–23.0)		27.0 (16.0–40.0)	
Children younger than 18 years of age						
None (n=295)	31.0 (20.0–38.0)	0.556[†]	13.0 (5.0–23.0)	<0.001[†]	26.0 (16.0–36.0)	<0.001[†]
1 child (n=104)	30.5 (22.0–39.0)		10.5 (5.0–23.0)		28.0 (19.0–39.0)	
2 children (n=73)	31.0 (23.0–38.0)		12.0 (4.0–24.0)		29.0 (14.0–40.0)	
≥3 children (n=13)	31.0 (27.0–37.0)		9.0 (5.0–17.0)		28.0 (23.0–36.0)	

MBS: Maslach burnout scale.

[*]Mann–Whitney U test, [†]Kruskal–Wallis test.

in contact tracing teams may experience burnout due to both disease-related anxiety and intense work pressure. However, one of the most important causes of burnout is the need for social support of healthcare workers and their concerns about the physical or psychosocial well-being of the people they care for. Planning training for healthcare professionals, organizing working hours with a sufficient workforce, and increasing social service options are steps that can be effective in preventing burnout.

Disclosures

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Conflict of Interest: The author declares no conflict of interest.

Ethics Committee Approval: This study was conducted with the approval of the Marmara University Medical Faculty Clinical Research Ethics Committee (Approval date: Nov 6, 2020, and Approval number: 09.2020.1187).

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