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Relationship Between Sociodemographic Differences and Knowledge, Attitude, and Anxiety Levels During the Coronavirus Disease 2019 Pandemic: A Cross-Sectional Study on Healthcare Workers in Turkey and South Africa

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Abstract

Objective: The aim of this study is to evaluate the knowledge, attitude, and anxiety levels of healthcare workers in Turkey and South Africa and to determine the possible factors associated with anxiety.

Methods: A cross-sectional study with 864 healthcare workers in Turkey and South Africa was conducted during May 1-October 30, 2020. The questionnaire included sociodemographic, individual, work-related, and about coronavirus disease 2019 questions. Anxiety was measured with the Beck Anxiety Inventory.

Results: A total of 864 people answered the questionnaire, 527 from South Africa and 337 from Turkey. Healthcare workers in both countries have mild anxiety levels, and the median value of the Beck Anxiety Scale score was significantly higher in the participants from South Africa (10) than the participants in Turkey (8) ($P = .004$). Compared to Turkey, the risk of moderate/severe anxiety was 1.56 times higher in South Africa. Female gender, duties out of work definition, difficulties of chronic illness management, difficulties in accessing the treatment of mental health problem, living with a person who is older than 65 or has a comorbidity, and personal protective equipment support were found to be associated with moderate/severe anxiety ($P < .05$).

Conclusion: In order to reduce the mental health impact on healthcare workers, pandemic readiness plans must take into account working hours and workload, adequate personal protective equipment supply, and measures to provide psychological support to healthcare workers, especially those with pre-existing mental health illnesses.

Keywords: COVID-19, healthcare workers, pandemic, anxiety

Introduction

Coronavirus disease 2019 (COVID-19) emerged in Wuhan, China, in December 2019 and was declared a pandemic by the World Health Organization (WHO) at the beginning of 2020.[1] The first case was detected in South Africa (SA) on March 5, 2020, and in Turkey on March 11, 2020.[2,3] Human-to-human transmission of COVID-19 occurs through direct contact or air droplets from an infected person through coughing or sneezing, and droplets can contaminate surfaces in the environment that remain infectious for several days, providing a reservoir for infection.[4]

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Healthcare workers take an active role in the diagnosis, treatment, and monitoring stages of the disease and therefore carry a higher risk of exposure, leading to being infected, contagious, developing the disease and even death. The protection of healthcare workers is one of the top priority issues in this pandemic, not only to decrease morbidity and mortality but also to ensure that healthcare can be carried out with as little interruption as possible.[5] Of the 3.45 million COVID-19-related deaths reported to WHO between January 2020 and May 2021, 6643 belong to healthcare workers. Modeling studies estimate that approximately 115 500 (80 000-160 000) of the 135 million global healthcare workers will die from COVID-19.[6] In addition, WHO has reported that up to 100 000 healthcare workers in African countries may have been infected with COVID-19, but this is thought to be an underestimate.[7]

Studies show that the COVID-19 pandemic has short- and long-term negative effects on the mental health of healthcare workers

due to longer working hours, the risk of disease transmission and transmission to the immediate environment, uncertainties regarding the pandemic, and duties carried out with additional personal protective equipment (PPE). Experiences such as being stigmatized by society due to the risk of disease transmission and living separately in order to protect loved ones present an additional burden.[8,9] The impact on healthcare workers may vary between contexts due to differing health policies, income levels, and the number of healthcare workers in proportion to the population.

Turkey and SA are countries located at the same longitude in different hemispheres, and both are similar in terms of secular and economic production diversity.[10,11] While the South African Republic stands out among African countries, Turkey is also at the forefront socially and economically in the Middle East geography. In line with these similarities, we thought it would be interesting to compare countries from the Southern and Northern hemispheres. The prevalence of depression, anxiety, and stress disorders was 44%, 97.5%, 97.5%, respectively, in a study conducted in primary care workers in SA during the COVID-19 outbreak; in Turkey, mild anxiety was found in 50% and severe anxiety in 17% of healthcare workers.[12,13] Insufficient knowledge about COVID-19 among healthcare workers forms their perceptions of the pandemic, preventive measures and infection control practices and leads to delayed health-seeking behavior and diagnosis.[14] For this reason, WHO has published several guidelines, online courses, and training to increase awareness, prevention, and control of COVID-19 among healthcare workers.[15] Studies have been performed to identify the knowledge and attitudes of healthcare workers in different countries towards COVID-19.[16,17] Understanding healthcare workers' knowledge and practices about COVID-19 is crucial to identifying effective strategies to contain the virus and protect workers' mental and physical health. The aim of this study is to evaluate the knowledge, attitude, and anxiety levels of healthcare workers in Turkey and SA and to determine the possible factors associated with anxiety.

Methods

Study Design

A cross-sectional study was undertaken in healthcare workers working in Turkey and SA. Data collection was undertaken between May 2020 and October 2020.

Study Population and Sampling

All healthcare workers working actively during the pandemic in both countries were targeted in the study. There were no exclusion criteria. The sample size for the healthcare workers in each country was calculated using Open.epi. One reason for the open sampling was that online data collection has a low response rate. A total of 289 participants (95% CI, with an estimated prevalence of 25% and an alpha margin of error of 0.05) were needed in each country. A 10% attrition rate was accounted for in the calculation. In order to reach the targeted sample size, the link to the survey form was sent to the healthcare workers electronically. Participants were also asked to forward the survey link to their colleagues. Participants easily accessed the survey by clicking on the link sent to them on their mobile phone, tablet, or computer and completed the survey online.

Data Collection

The questionnaire consisted of 3 areas; the first section focused on sociodemographic and occupation-specific questions. The second section investigated the knowledge and attitudes of the participants about COVID-19. The survey questions in the first 2 sections were prepared by the researcher in line with the research hypothesis, current guidelines, and reviews on the subject.[18,19] These were reviewed by the wider research team and adapted for each context's health system.

The third section used the validated and internationally accepted Beck Anxiety Inventory (BAI) to measure participants' anxiety.[20,21] The total score is calculated by finding the sum of the 21 items. A total score of between 0 and 7 on the BAI indicates minimal anxiety, 8-15 indicates mild anxiety, 16-25 indicates moderate anxiety, and between 26 and 63 indicates severe anxiety. The validity and reliability study of the BAI in Turkey was conducted by Ulusoy et al.[21] In SA, the validated and internationally accepted BAI was used.[20] Participants in the study were divided into 2 groups according to their Beck Anxiety score. Those in the no anxiety/mild anxiety group with an anxiety score between 0 and 15, and those in the moderate/severe anxiety group with a score above 15 formed the other group. A logistic regression model was created to look at the effects of the variables that affect the anxiety groups and have a *P* value below .25 in univariate analysis.

Statistical Analysis

The data were analyzed by using the Statistical Package for the Social Sciences version 21.0 (IBM Corp.; Armonk, NY, USA). In descriptive analyses, number and percentage (categorical variables), mean ± standard deviation or median with IQR, and percentiles or minimum–maximum values (numerical variables) were used. The normality of continuous variables was evaluated by Kolmogorov–Smirnov test, coefficient of variation, histogram, and Q–Q plot. Comparisons between groups were made with the Mann–Whitney *U* test for continuous variables since they were not normally distributed. The chi-square test was used to compare categorical variables between the 2 groups, and Fisher's exact test was used in states where chi-square analysis was not performed. For the multivariate analysis, the possible factors with *P* score lower than .25 in univariate analyses were further entered into the logistic regression analysis to determine independent predictors of patients' outcome. A *P*-value of <.05 was accepted as the statistical significance level.

Ethical Approval, Informed Consent, and Permissions

Necessary approval documents were obtained for the study from the Ethics Committee of İstanbul University-Cerrahpaşa Faculty of Medicine (Date: May 21, 2020, Number: 64907) and University of Witwatersrand Human Research Ethics Committee (Medical) (Date: August 1, 2020, Number: M200693). The study was performed in accordance with the most recent version of the Helsinki Declaration. The first page of the survey tool included the participant information form and a question on informed consent. For those who did not volunteer to participate in the research, the survey was terminated, whilst volunteer participants were directed to fill in the survey.

Results

Comparison of Demographic Characteristics of Both Countries

A total of 864 people answered the questionnaire, 527 from SA and 337 from Turkey. Demographic data of the participants of both countries are shown in Table 1. While 74.3% of the participants in SA were female and the median age value was 44, 47.5% of the participants in Turkey were female and the median age value was 37 ($P < .001$). There was a significant difference between the countries in terms of the occupational categories of the participants in both countries, the sector they worked in and the type of

Table 1. Comparison of 2 Countries According to Their Sociodemographic Characteristics

	South Africa n = 527	Turkey n = 337	*P*
Age (median (IQR))	44 (34-52)	37 (31-43)	<.001***[m]
Gender (n, %)			
Female	390 (74.3)	160 (47.5)	.001***[c]
Male	135 (25.7)	177 (52.5)	
Marital status (n, %)			
Married	327 (62)[a]	249 (74.3)[b]	<.001***[f]
Divorced/widowed	45 (8.5)[a]	14 (4.2)[b]	
Single	123 (23.3)[a]	72 (21.5)[a]	
Civil partnership	23 (4.4)[a]	0 (0) [b]	
Other	9 (1.7)[a]	0 (0)[b]	
Children (n, %)			
Yes	354 (67.2)	229 (68)	0.811[c]
Healthcare worker category (n, %)			
Doctor	321 (60.9)[a]	260 (77.2)[b]	<.001***[f]
Nurse	61 (11.6)[a]	40 (11.9)[a]	
Officer	0[a]	11 (3.3)[b]	
Physiotherapists	32 (6.1)[a]	12 (3.6)[a]	
Nutritionist	30 (5.7)[a]	0[b]	
Occupational therapists/ community health worker	11 (2.1)[a]	0[b]	
Other	72 (13.7)[a]	14 (4.2)[b]	
Duration of profession (in years) (median (IQR))	15 (7-25)	11 (6-19)	<.001***[m]
Institution (n, %)			
University	25 (4.7)[a]	169 (50.1)[b]	<.001***[c]
Hospital	251 (47.6)[a]	87 (25.8)[b]	
Primary care	138 (26.2)[a]	72 (21.4)[a]	
NGO	24 (4.6)[a]	5 (1.5)[b]	
Other	71 (13.5)[a]	4 (1.2)[b]	
Private sector	18 (3.4)[a]	NA	
Sector (n, %)			
Public	221 (41.7)[a]	304 (90.2)[b]	<.001***[c]
Private	295 (55.7)[a]	33 (9.8)[b]	
NGO	14 (2.6)[a]	0 (0)[b]	
Weekly working hours (on average) (median (IQR))	40 (40-50)	40 (40-48)	.481[m]
Change of working hours (n, %)			
Not changed	179 (34.2)[a]	129 (38.3)[a]	<.001***[c]
Decreased	187 (35.7)[a]	151 (44.8)[b]	
Increased	158 (30.2)[a]	57 (16.9)b	
Having chronic ilness (n, %)			
Yes	179 (35.3)	95 (28.2)	.031*[c]
Asthma (yes)	46 (9.1)	27 (8)	.591[c]
CVD (yes)	15 (3)	13 (3.9)	.475[c]
COPD (yes)	2 (0.4)	2 (0.6)	.653[c]
Diabetes (yes)	25 (4.7)	16 (4.7)	1[c]
HIV (yes)	6 (1.2)	0	.087[c]
Hypertension (yes)	69 (13.6)	32 (9.5)	.071[c]
Other (yes)	85 (16.8)	43 (12.8)	.112[c]

Each different superscript letter shows different groups in the row, at the level of .05 significance.
COPD, chronic obstructive pulmonary disease; CVD, cardiovascular diseases; HIV, human immunodeficiency virus; IQR, interquartile range; NGO, non-governmental organization.
*$P < .05$, **$P < .01$, ***$P < .001$.
[m]Mann–Whitney *U* test, [c]Chi-squared test, [f]Fisher's exact test,

institute ($P < .001$). The median value of the time spent in the profession by the participants in SA was significantly higher than that in Turkey ($P < .001$). During the pandemic period, the working hours of 44.8% of the participants in Turkey decreased, while the working hours of 16.9% of participants increased; in SA, these rates were 35.7% and 30.2%, respectively ($P < .001$). Participants with chronic diseases were found to be significantly higher in SA ($P = .031$) (Table 1).

Coronavirus Disease 2019 Exposure, Knowledge, and Anxiety levels

In SA, of those who had contact with COVID-19 patients as part of their job (90.2%), 54.7% received adequate PPE and 60.2% received training on COVID-19 disease and was significantly higher among participants in SA ($P < .001$). Among the participants in Turkey, the prevalence of those infected with COVID-19 (22.8%) was found to be significantly higher ($P < .001$) (Table 2). Scientific literature was found to be the most common source of COVID-19 information. Among the participants in SA, the prevalence of those who stated that they always felt more stressed during the pandemic (23.8%) and the prevalence of those who had thoughts of self-harm or suicide (14.2%) were significantly higher ($P < .001$ for both). Although healthcare workers in both countries have mild anxiety levels, the median value of the Beck Anxiety Scale score was significantly higher in the participants from SA (10) than the participants in Turkey (8) ($P = .004$) (Table 2).

Factors that Increased the Risk of Moderate/Severe Anxiety

According to the model, the risk of moderate/severe anxiety was 3.11 times higher for women than for men, 1.54 times higher for

Table 2. Comparison of Participants' Knowledge, Attitudes, and Effect of Pandemic

	South Africa	Turkey	n (%)
Contact with COVID-19 patients as part of job			
Yes/partly	425 (90.2)	159 (47.2)	**<.001*****[c]
Infected/diagnosed with COVID-19			
Yes	64 (12.8)	77 (22.8)	<.001***[c]
Receiving sufficient PPE			
No	79 (15.8)[a]	37 (11) [b]	<.001***[c]
Partly	147 (29.5)[a]	150 (44.5)[b]	
Yes	273 (54.7)[a]	150 (44.5)[b]	
Educated/trained on COVID-19			
No	58 (11.6)[a]	88 (26.3)[b]	<.001***[c]
Partly	141 (28.2)[a]	124 (37.1)[b]	
Yes	301 (60.2)[a]	122 (36.5)[b]	
Sources of COVID-19 information			
Television (yes)	195 (38.9)	165 (49)	.004**[c]
Newspaper (yes)	96 (19.2)	44 (13.1)	.02*[c]
Internet (yes)	423 (84.4)	303 (89.9)	.022*[c]
Scientific literature (yes)	342 (68.3)	150 (44.5)	<.001***[c]
Other (yes)	49 (9.8)	21 (6.2)	.069[c]
Feeling more stressed during the pandemic			
Never	13 (2.6)[a]	13 (3.9)[a]	<.001***[c]
Rarely	32 (6.4)[a]	44 (13.1)[b]	
Sometimes	157 (31.4)[a]	111 (32.9)[a]	
Often	179 (35.8)[a]	124 (36.8)[a]	
Always	119 (23.8)[a]	45 (13.4)[b]	
Having thoughts of self-harm or suicide			
Partly yes	71 (14.2)	15 (4.5)	<0.001***[c]
Beck Anxiety scores			
Non absent/mild (0-15)	322 (66.8)	263 (78)	<.001***[c]
Moderate/severe (16-63)	160 (33.2)	74 (22)	
Beck Anxiety scores	10 (4-19)	8 (4-14)	.004**[m]

Each different superscript letter shows different groups in the row, at the level of .05 significance.
PPE, personel protective equipment.*$P < .05$, **$P < .01$, ***$P < .001$.
[c]Chi-squared test, [m]Mann–Whitney U test.

Table 3. Factors that Increased the Risk of Moderate/Severe Anxiety

	Moderate/Severe Beck Anxiety Score (15-63)		
	OR	95% CI	*P*
Gender (ref. male)			
Female	**3.11**	**2.05-4.73**	<.001***
Age (years)	0.99	0.98-1.01	.466
Change of income compared with the time before the pandemic (ref. not changed)			
Changed	1.04	0.73-1.47	.838
Assigned to duties out of work definition (ref. no)			
Yes	**1.54**	**1.08-2.18**	.019*
Difficulties of chronic ilness management during the pandemic (ref. no chronic illness)			<.001***
Partly	1.84	0.95-3.57	
No	1.16	0.73-1.85	
Yes	**4.01**	**2.05-7.84**	
Difficulties in accessing the treatment of mental health problem during the pandemic (ref. no diagnosed mental health problem)			<.001***
No	**1.87**	**1.20-2.90**	
Partly	**2.88**	**1.28-6.44**	
Yes	**9.56**	**2.42-37.77**	
Infected/diagnosed with COVID-19 (ref. no)			
Yes	1.42	0.91-2.24	.126
Living with a person who is older than 65 or has a comorbidity (ref. no)			
Yes	**1.49**	**1.02-2.19**	.041*
Receiving sufficient PPE equipment (ref. yes)			**.**002**
Partly	**1.84**	**1.25-2.72**	
No	**1.97**	**1.18-3.28**	
Knowledge of protecting the non-COVID-19 patients and themselves during the pandemic (ref. yes)			
Partly	1.66	0.996-2.77	.052
Country (ref. Turkey)			
South Africa	**1.55**	**1.05-2.30**	.029*

Binary logistic regression was applied. Reference category: mild or no anxiety (Beck Anxiety score:0-15).
95% CI, 95% confidence interval; OR, odds ratio; ref., reference category.*$P < .05$, **$P < .01$, ***$P < .001$.
Omnibus test < 0.001; Negelkerke R^2, 0.257; Hosmer and Lemeshow, 0.644.

those who were assigned tasks outside the job description than those who were not given the risk of anxiety, and 1.49 times more for those who were over 65 years old or living with a comorbid person than those who did not (Table 3). The risk of moderate/severe anxiety was found to be increased by 4.01 in those who had problems in chronic disease management during the pandemic period compared to those without chronic disease. Compared to those without mental illness, the risk of moderate/severe anxiety was 1.87 times higher in those who had a mental illness and did not have difficulty in its management during the pandemic period,

2.88 times in those with partial difficulty, and 9.56 times in those who had difficulty. The risk of moderate/severe anxiety was found to be 1.84 times higher in those who received partial support and 1.97 in those who did not receive support, compared to the personnel who received adequate PPE support. Compared to Turkey, the risk of moderate/severe anxiety was 1.55 times higher in SA (Table 3).

Discussion

In the COVID-19 pandemic, the lives of healthcare workers have been deeply affected, both physically and psychologically. The knowledge, attitudes, and behaviors of healthcare workers about COVID-19 and protective measures are a priority for both public health as well as for individual protection. In this study, in which the knowledge, attitude, and anxiety levels of healthcare professionals working in Turkey and SA about COVID-19 were investigated, it was observed that 33.2% of the participants from SA and 22% of the participants from Turkey had a moderate-severe score, and this difference between both countries was statistically significant. As the pandemic unfolded, the anxiety and stress levels of healthcare workers have increased.[22] Spoorthy et al[23] compiled 23 articles researching mental health problems in healthcare workers published during the COVID-19 pandemic and determined that healthcare workers should be regularly screened for stress, anxiety, and depression.

Education of healthcare workers about the disease is important in the fight against COVID-19. In a study conducted in Brazil, most healthcare workers did not receive proper training for treating COVID-19-infected patients to treat patients infected with COVID-19.[24] A study performed with healthcare workers working in the National Health Service (NHS) across the United Kingdom showed that approximately 50% of them did not receive proper training.[25] Lima et al[26] emphasized the importance of the role of anxiety as the dominant emotional response in an epidemic situation, emphasizing the need for adequate training of health workers and optimum use of technological advances to provide mental health care. The high number of people who do not receive adequate education about COVID-19 may have caused more infections in the participants in Turkey. It was found that the information sources of healthcare workers about COVID-19 are also compatible with the literature.[27] These were scientific literature, internet, television, and newspaper.

In a study conducted in Wuhan, it was observed that young female healthcare workers are at greater risk for mental health problems.[28] It is thought that this finding may be related to the fact that the prevalence of anxiety is 2-3 times higher in women than in men.[29] Zhang et al[18] stated that being a woman is the most common risk factor for insomnia, anxiety, obsessive-compulsive symptoms, and depression. In this study, consistent with the literature, the risk of moderate/severe anxiety was found to be 3.11 times higher in women than in men. The higher number of female healthcare workers in South African participants may have caused the median value of the Beck Anxiety Scale score to be higher in South African participants.

Liu et al[30] reported that the anxiety of frontline healthcare workers in units where direct contact with patients occurred was significantly higher than for other types of healthcare workers. Lai et al[19] observed that the risk of psychiatric symptoms such as anxiety, depression, insomnia and stress increases in healthcare workers who have first contact with the patient. In the study of Zhou et al,[31] it was defined that approximately 85% of healthcare workers fear being infected at work. It is thought that working directly with COVID-19-positive patients, working in units where there are isolation facilities for patients, and the thought that the pandemic cannot be controlled increase the anxiety level of healthcare workers.[32] It was found that the rate of healthcare workers in direct contact with COVID-19 in SA is higher than in Turkey. It is postulated that this result contributed to a higher anxiety score in SA.

In the literature, in the studies conducted during the COVID-19 pandemic, the restricted access to protective equipment was mentioned as a source of concern among healthcare workers.[33] Access to adequate protective equipment has been found to positively impact the well-being of workers.[34] In this study, the anxiety scores of healthcare workers in both countries increased statistically significantly in those who did not receive adequate PPE. It is thought that the reason for the higher anxiety scores in SA may be due to the higher rate of those who did not receive PPE support at all.

Despite the study showing that healthcare workers with 5-9 years of work experience have specific skills and experience in dealing with public health emergencies and therefore feel less fatigued,[31] Zhu et al[35] reported that those with 10 years or more work experience have more stress. Additionally, Chen et al[36] did not find any relationship between working time and depression and anxiety. In addition to the different results in the literature, in this study, participants in SA had a longer working year, while those with moderate-to-severe anxiety scores were more in SA. Although there is no finding in the literature about the direct effects of physical fatigue related to the COVID-19 pandemic on the level of anxiety,[34] fatigue increases stress, especially in high-risk healthcare workers.[22] This finding also shows similarity with the findings that there is an inverse relationship between the working conditions of healthcare workers and their anxiety levels[37] and that increased working hours are associated with anxiety.[32,36] In this study, the increase in weekly working hours in SA during the pandemic period may have contributed to the higher level of anxiety in SA.

Physicians and nurses represent the highest suicide risk groups among the general population, and suicide can be considered as an occupational hazard in the healthcare sector. Increased workload, burnout and fatigue, multifaceted challenges for female healthcare workers, and increased substance abuse are contributing factors to suicide ideation.[38] Concerned that a recent study reported a total of 26 cases of COVID-19-related suicide worldwide among healthcare workers; affected persons were predominantly doctors, nurses and paramedics, and more than half of them were women from India.[39] In a similar report, multiple COVID-19-related suicides were reported among frontline nurses caring for COVID-19 patients.[40] In this study, the rate of those with self-harm or suicidal ideation was found to be significantly higher in SA.

A history of depression or anxiety in people increases the likelihood of relapse or exacerbation during the COVID-19 outbreak. It has been determined that the incidence of insomnia, anxiety, depression, somatization and obsessive-compulsive symptoms are affected in healthcare workers, and it has been determined that the presence of chronic illness and mental illness are among the factors that increase stress.[18,35] Socio-political measures implemented during a pandemic, such as lockdowns, may result in reductions in healthcare access, particularly where the pandemic is widespread, as well as an increase in practices such as telemedicine. In this study, anxiety was observed more frequently in participants with chronic disease in both countries and those who had difficulties of chronic illness management during the pandemic. Also, anxiety was observed more frequently in those who experienced a recurrence of mental health symptoms and had difficulties in accessing treatment for their mental health problem due to limited access to health services during the pandemic.

The limitations of this study are that the data collection tools are in the form of a self-reported scale, and the reliability of the answers is person dependent. Additionally, aspects such as personality traits, depression severity, psychiatric drug use, alcohol-cigarette use, family dynamics, and social life standards which can affect the results of the study were not surveyed. However, the results in this study are still valid for all participants who are actively working and not working in the field of COVID-19.

Conclusion

All societies around the world have been affected by the COVID-19 pandemic. Since healthcare workers are in the front-line in the fight against the disease, the impact of the pandemic on their experience may be different from the other parts of society. Country, female gender, duties out of work definition, difficulties in managing their own chronic illnesses, difficulties in accessing the treatment of mental health problems, living with a person who is older than 65 or has a comorbidity, PPE support, and knowledge of protecting the non-COVID-19 patients and themselves were found to be associated with moderate/severe anxiety. This may be the result of excessive workload, increased stress and decreased opportunities for rest. In order to reduce the mental health impact on healthcare workers, pandemic readiness plans must take into account working hours and workload, adequate PPE supply, and measures to provide psychological support to healthcare workers, especially those with pre-existing mental health illnesses.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of İstanbul University-Cerrahpaşa (Date: May 21, 2020, Number: 64907) and University of Witwatersrand (Date: August 1, 2020, Number: M200693).

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