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Psychosocial status and attitudes of healthcare workers amid the COVID-19 pandemic

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Ethics Committee Approval
The study was approved by the COVID-19 Studies Scientific Committee of Turkish Ministry of Health and Adıyaman University Non-Interventional Studies Local Ethics Committee (date:18.05.2020, number:2020/5-6).
All procedures in this study involving human participants were performed in accordance with the 1964 Helsinki Declaration and its later amendments.

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No conflict of interest was declared by the authors.

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Abstract

Background/Aim: COVID-19 disease occurs in close contact due to its highly contagious nature. Healthcare workers (HCWs) are in the frontline of struggling with the COVID-19 pandemic. The thoughts, behaviors, attitudes, and psychosocial statuses of healthcare professionals working in this problematic condition have not yet been fully investigated in Turkey. We aimed to evaluate the mental health and psychosocial status, thoughts about the measures taken by the government, attitudes, and behaviors of healthcare workers facing the COVID-19 pandemic, and whether there is a difference between physician and non-physician HCWs.

Methods: In this cross-sectional survey, a 56-question multiple-choice test created based on similar surveys and scales was performed by a one-to-one interview with the HCWs in three registered hospitals fighting the COVID-19 pandemic from 20 May to 10 June 2020. Mental health variables were assessed via the Patient Health Questionnaire-4 (PHQ-4) and the Turkish Beck Depression Scale to specify psychological manifestations. A scoring system was applied using a four-point Likert scale, from no points (“strongly disagree”) to three points (“strongly agree”) to determine the levels of anxiety and depression. Participants were divided into two groups as physician and non-physician HCWs for subgroup analysis.

Results: A total of 300 HCWs (45 physicians, 255 non-physician health care workers) enrolled in the survey. Only 0.8% of HCWs received psychological support from a therapist or psychiatrist. The most common concern during the COVID-19 pandemic was about “the elderly and other risky population being infected” (37.9%). Compared with non-physician HCWs, physicians felt more concerned about the spread of COVID-19 (80% vs 47.1%, P=0.006 $\chi 2$=12.591) and they agreed at a higher rate that the number of tests performed was sufficient (53.3% vs. 41.2%, P=0.030, OR: 0.29-0.35, $\chi 2$=7.047). For all HCWs, the "feeling of being infected with COVID-19” item had the highest mean total score (2.60 (0.97). The mean score of the “feeling nervous/anxious/on edge” item was 2.53 (0.52) for physicians and 2.26 (0.86) for non-physician HCWs. Non- physicians HCWs had a higher mean score for “Feeling of increased body pain and agony” item than physicians 0.27(0.80) vs 0.76 (1.23), mean dif=-0.50, 95% confidence interval=-1.002 to 0.006, P<0.05).

Conclusions: The results of this study showed that healthcare professionals were most anxious about “being infected with COVID-19”. Both physician and non-physician HCWs were feeling nervous/anxious/on edge according to anxiety scores.

Keywords: Covid 19, Mental health, Healthcare workers, Physicians, Non-physicians

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Introduction

Coronaviridea are enveloped, non-segmented, single-stranded RNA viruses which replicate in epithelial cells of the upper respiratory tract and in some circumstances, spread to the lower respiratory tract. The disease may cause bronchiolitis, pneumonia, and even acute respiratory distress syndrome. Human coronaviruses were recognized since the 1960s, but in 2003 a novel coronavirus was introduced as an etiologic agent of the outbreak of severe acute respiratory syndrome (SARS). The outbreak in Jeddah, Kingdom of Saudi Arabia in June 2012 was named "Middle East Respiratory Syndrome" (MERS) and caused Middle East Respiratory Syndrome-coronavirus (MERS-CoV) [1]. A pneumonia outbreak of unknown cause was observed in Wuhan province, China, in December 2019-January 2020. After testing the samples collected from these patients, the cause was revealed as a novel coronavirus originating from coronavirus families such as SARS and MERS and was named Novel Coronavirus 2019 (2019-nCoV). In this new disease, the very infectious virus spread all over the world rapidly. Over 4 million cases and 275 thousand deaths have been reported until now (15/20). The first case in Turkey was observed on 11 March 2020 and over 140 thousand cases and four thousand deaths had been reported since then (15/2020) [2].

Coronaviridea may cause severe respiratory infections especially in the elderly, infants and in patients with underlying chronic diseases [1]. It spreads via small droplets produced during coughing, sneezing, or talking, and when people are in close contact [3]. Although the incubation period is not precisely known, it is estimated to be between 9 to 12 days when transmitted between humans. This period is noted as approximately 2 days for other infections caused by coronaviruses [4]. Based on these assumptions, the observation period of 14 days in COVID-19 is considered safe [5].

COVID-19 cases can be seen individually and/or as a group. Healthcare workers (HCWs) are in the frontline of the struggle against any disease and play a key role in the response to this pandemic, just as in other epidemics. Healthcare professionals such as physicians, nurses, and other auxiliary staff are all at risk because of the very infectious nature of the COVID-19 in close contact. While they all have been working under these circumstances, their thoughts and behaviors have not been fully investigated. Diminishing the anxiety levels of HCWs as much as possible might help them fight pandemics more effectively. In this study, we aimed to detect the anxiety levels, thoughts, attitudes, and behaviors of HCWs facing the COVID-19 pandemic and whether there is a difference between physician and non-physician health care workers in terms of these issues.

Materials and methods

This cross-sectional survey study was designed based on the American Association for Public Opinion Research (AAPOR) guideline for survey studies. The study was approved by the COVID-19 Studies Scientific Committee of Turkey Ministry of Health and Adıyaman University Non-Interventional Studies Local Ethics Committee (date:18.05.2020, number:2020/5-6). Informed consents were obtained from all participants before the questionnaire. Participants were free to withdraw from the study at any time and data were kept strictly confidential.

This multi-centered, cross-sectional survey study was performed with a one-to-one interview with the HCWs registered in the pandemic workforce in Adıyaman University of Training and Research Hospital, Gerger and Kızıltepe Public Hospitals, Turkey, between 20 May 2020 and 10 June 2020. We performed a questionnaire of fifty-six questions to the participants. All survey questions were created based on similar survey studies and revised anxiety score questions of patient Health Questionnaire-4 (PHQ-4) and Beck Depression Scale [5,6].

Measurements:

Demographic variables such as gender, age, profession (physician, nurse, administrative personnel, auxiliary personnel, other personnel), marital status (married, single, divorced) were asked in the questionnaire. Besides, the participants were asked whether they had any organic diseases, insomnia, or psychiatric symptoms. Participants were asked to state the factors affecting their anxiety levels during the COVID-19 outbreak in order of importance. The questions were prepared to determine the participants' self-protection from COVID-19, attitudes, behaviors, and opinions on preventions taken by the government using a 4-point Likert scale.

Survey questions were classified to determine the anxiety and depression levels, attributes, and behaviors of HCWs due to the COVID-19 outbreak. The Turkish modifications of Patient Health Questionnaire-4 (PHQ-4) and Beck Depression Scale were used.

Survey questions were established to specify psychological manifestations (Feeling nervous/anxious/on edge, not being able to stop worrying, loss of joy, feelings about increased risk of infection, avoidance from crowds, loss of interest in following news, difficulty in falling asleep, increased general body pain, feeling down/depressed/hopeless [5,6]. A scoring system was applied using a four-point Likert scale ranging from no points ("strongly disagree") to three points ("strongly agree") to determine the levels of anxiety and depression [7].

Study participants and three researchers who conducted face-to-face interviews were blinded to the hypothesis and purpose of the study. To avoid the bias of misinterpreting the survey results, a data analysis plan was created. A different researcher than the researchers who conducted the face-to-face interview performed the statistical analysis and was blinded to the purpose and hypothesis of the study.

Statistical analysis

All data analysis was performed with the Statistical Package for the Social Sciences software (SPSS 17.0 v). A power analysis was performed using the G*power v3.1.9.2 software. Categorical values were presented as percentage and number; numeric values were presented as mean (Standard deviation (SD)).

After survey data is obtained, group analyses were performed by dividing participants into two groups as physician and non-physician HCWs. The categorical variables were compared with the $\chi 2$ test. The student's t-test was performed on each group to compare the differences between mean values. Variant analysis was performed with the Levene test. A priori

power analysis revealed that a sample size of 180 participants in total would be required to detect medium effects (d = 0.50) with 80% power and alpha critical level (type 1 error) at 0.05 using a t-test. A 95% confidence interval (CI) was used for expressing the study data. For all statistical analyses, a *P*-value of <0.05 was considered statistically significant.

Results

Sociodemographic findings and knowledge levels:

A total of 300 HCWs were enrolled in the study and questionnaires were performed with one-to-one interviews. Of HCWs enrolled in this study, 15% (n=45) were physicians, 85% (n=255) were non-physician healthcare workers (71% nurse, 9% staff, 5% administrative personnel). Half were male, 64% were married, and most participants were aged between 26 and 40 years. All participants aged between 50 and 65 years were physicians. Eighty-six percent of the participants had no history of any diseases and there was no difference between professions regarding health problems (*P*=0.936, $\chi2$=0.007).

During the COVID-19 pandemic, 68% of HCWs thought that they had sufficient knowledge about the course of the outbreak and 21% thought their knowledge was at expert level. While 53.3% of physicians thought that they had expert-level knowledge, this ratio was 15.3% among non-physician HCWs (*P*=0.004, $\chi2$=11.121). Of all HCWs, 85% had not done any research on COVID-19 and this ratio was 90.6% among non-physician HCWs (*P*=0.058, $\chi2$=3.595).

Table 1 presents the sociodemographic characteristics of all participants and the comparison of physician and non-physician HCWs.

Table 1: Sociodemographic characteristics in Physician versus Non-physician HCWs

	Total %(n)	Physician n=45 %(n)	Non- physician n=255 %(n)	*P*-value
Gender				*P*=0.002
Female	50.0(150)	13.3(6)	56.5(144)	$\chi2$=9.490
Male	50.0(150)	86.7(39)	43.5(111)	
Marital status				*P*=0.007
Married	64.0(192)	33.3(15)	69.4(177)	$\chi2$=7.203
Single	36.0(108)	66.7(30)	30.6(78)	
Age, years				*P*=0.007
18-25	13.0(39)	13.3(6)	12.9(33)	$\chi2$=12.059
26-40	71.0(213)	66.7(30)	71.8(181)	
41-55	14.0(42)	6.7(3)	15.3(39)	
56-65	2.0(6)	13.3(6)	0	
Chronic Diseases				*P*=0.936
Yes	14.0(42)	13.3(6)	14.1(36)	$\chi2$=0.007
No	86.0(258)	86.7(39)	85.9(219)	
Anxiety				*P*=0.250
No	22.0(66)	33.3(15)	20.0(51)	$\chi2$=1.321
Yes	78.0(234)	66.7(30)	80.0(204)	
Somatization symptoms				*P*=0. 215
No	82.0(246)	93.3(42)	80.0(204)	$\chi2$=1.536
Yes	18.0(54)	6.7(3)	20.0(51)	
Insomnia				*P*=0.482
No	74.0(74)	66.7(10)	75.3(64)	$\chi2$=0.493
Yes	26.0(26)	33.3(5)	24.7(21)	
Wearing a mask outside				*P*=0.464
No	18.0(18)	26.7(4)	16.5(14)	$\chi2$=0.898
Yes	82.0(82)	73.3(11)	83.5(71)	
Research about COVID-19				*P*=0.058
No	88.0(264)	73.3(33)	90.6(141)	$\chi2$=3.595
Yes	12.0(36)	26.7(12)	9.4(24)	
Knowledge level				*P*=0.004
Inadequate	11.0(33)	6.7(3)	11.8(30)	$\chi2$=11.121
Adequate	68.0(204)	40.0(18)	72.9(186)	
At expert level	21.0(63)	53.3(24)	15.3(39)	

$\chi2$: Pearson Chi-square test

Information and anxiety sources of HCWs about COVID-19

Among concerned participants, 62.8% were between 26 and 40 years old (*P*=0.009, $\chi2$=11.520). There was no significant difference between the professions of HCWs and feelings of concern (*P*=0.250, $\chi2$=1.321). Only 0.8% received psychological support from a therapist or psychiatrist. HCWs were most concerned with "the elderly and other risky population being infected" (37.9%), while the rate of those concerned by being infected was only 3.1%. There were no significant differences between the HCWs in terms of rate and reasons of concern (*P*=0.294, $\chi2$=10.740).

Most HCWs had changed their thoughts about COVID-19 according to what they had learned from their friends and family members (25.4%), the WHO and other health agencies (20.8%). The rate of those who changed their opinions because of newspapers and the press were only 1%. Among concerned HCWs, 89.2% felt stated that they had changed their thoughts with the information they got from television (*P*=0.005, $\chi2$=20.271).

Responses of HCWs about the COVID-19 outbreak according to concern statements are shown in Table 2.

Table 2: Responses of health-care workers to concern statements about the COVID-19 outbreak

Questions	Characteristics	Total %(n)	Concern No, (n=66) n	%	Yes (n=234) n	%	*P*-value
Profession	Physician	15(45)	15	33.3	30	66.7	*P*=0.250
	Nurse and other staff	85(255)	51	20.0	204	80.0	$\chi2$=1.321
Age	18-25 years	13(39)	0	0	39	16.7	*P*=0.009
	26-40 years	71(213)	66	100	147	62.8	$\chi2$=11.520
	41-55 years	14(42)	0	0	42	17.9	
	56-65 years	2(6)	0	0	6	2.6	
Which factors changed your feelings about COVID-19?*	Friends, family	25.4(150)	27	18.0	123	82.0	*P*<0.001
	Health web sites	16.2(96)	27	28.1	69	71.9	$\chi2$=20.271
	TV	18.8111)	12	10.8	99	89.2	
	WHO	20.8(123)	21	17.1	102	82.9	
	Online health programs	3.6(21)	12	57.1	9	42.9	
	Social media and internet browsers	14.2(54)	15	17.9	69	82.1	
	Newspapers and journals	1.0(6)	6	100.0	0	0	
What are you most anxious about regarding the COVID-19 outbreak? *	Economy	20.3(138)	45	32.6	63	67.4	*P*=0.294
	Children being infected	21.6(147)	33	22.4	114	77.6	$\chi2$=10.740
	Elderly and risky populations being infected	37.9(258)	54	20.9	104	79.1	
	Fast spreading	9.7(66)	6	9.1	60	90.9	
	Dying of illness	2.6(18)	3	16.7	15	83.3	
	Inadequate medical facility	3.121)	6	28.6	15	71.4	
	Being quarantined	0.9(6)	0	0	6	100.0	
	Loss of income	0.9(6)	3	50.0	3	50.0	
	Being infected	3.1(21)	3	28.6	15	71.4	
What have you done to support your mental and emotional health during COVID-19 outbreak? *	Gathering information and doing research	33.9(129)	39	30.2	90	69.8	*P*<0.05 $\chi2$=5.449
	Asking specialists for information	8.7(33)	0	0	33	100.0	
	Getting Psychological support	0.8(3)	3	100.0	0	0	
	Taking medicine	2.4(9)	3	33.3	6	66.7	
	Using social media a lot more	20.5(78)	9	11.5	69	88.5	
	Suspending social media	5.5(21)	9	42.9	12	57.1	
	Doing exercise	17.3(66)	18	27.3	48	72.7	
	Allocating time to my hobbies	11.0(42)	6	14.3	36	85.7	

* Multiple responses, WHO: World Health Organization, TV: television

The attitudes and behaviors of HCWs about COVID-19 pandemic

In our study, only 6.7% of HCWs had no anxiety during the COVID-19 pandemic. Physicians significantly more commonly stated that they felt very anxious about the spreading of the COVID-19 pandemic compared to non-physician HCWs (%80 vs %47.1, *P*=0.006 $\chi2$=12.591).

Sixty percent of participants strongly agreed that COVID-19 affected their daily life very much, 49% thought that their future lives would be affected and 59% thought it had affected their social relations.

In terms of the responses to whether COVID-19 affected daily life, future life, and social relations, there was no statistically significant difference between the physician and non-physician HCWs (P=0.104, P=0.100, P=0.038, respectively, Table 3).

Because of the outbreak, 72% of HCWs did not use mass transport. Seventy-five percent stated that their handwashing habits increased very much in frequency. Eighty-five percent stated that they obeyed the precautions such as social distance. All those who did not believe that the social distance rule was protective were non-physician health workers and this rate was only 1.2%. The physician and non-physician HCWs were similar in terms of responses to questions regarding mass transport, handwashing, and social distance (P=0.089, P=0.085, P=0.212, respectively, Table 3).

Because of the outbreak, 43% of HCWs bought extra food and 64% bought extra cleaning supplies and stored them at home. Among physicians, 26.7% did not think they needed to buy extra food and 21.2% of non-physician HCWs said that they had no intention of buying extra cleaning supplies. There was no significant difference between the answers given by physicians and other HCWs (P=0.294, P=0.677, respectively).

Of HCWs, 82% responded that they wore masks outside the hospital since the outbreak emerged. 73.3% of physician and 83.5% of non-physician HCWs agreed on the importance of wearing a mask outside the hospital. Responses of all HCWs were similar with regards to wearing masks outside (P=0.815).

Seventeen percent of HCWs were certain about the preventiveness of precautions they had taken, while 10% were not sure. Among all participants, 13.3% who thought that the preventive measures taken were inadequate were physicians and 9.4% were non-physician HCWs. The two groups were similar in terms of their thoughts on the protectiveness of the precautions taken (P=0.742).

Forty-five percent of participants replied that their interest in patients who came for routine examination did not change at all. Almost half of physicians (46.7%) stated that their interest in patients who came for routine examination did not change and this rate was 18.8% for the rest of the participants.

Sixty-seven percent of HCWs stated that their perception of the risk of their occupation as a HCW increased after the COVID-19 pandemic. While 86.7% of the physicians strongly agreed with this statement, this rate was 62.7% non-physician HCWs (P=0.168). The distribution of attitudes and behaviors of physician and non-physician HCWs concerning COVID-19 is presented in Table 3.

The opinion of HCWs about the preventive measures the government has taken:

Forty-six percent stated that they were satisfied with the governmental precautions during Covid- 19 pandemic; 56% agreed that some precautions had been taken but criticized its inadequacy. Concerning governmental preventive measures, 66.7% and 13.3% of physicians were satisfied and extremely satisfied, respectively, while these rates were 42.4% and 12.8% among non-physician HCWs.

Forty-five percent thought that the government officially announced the latest data thoroughly whereas

%11 felt otherwise. Fifty-eight percent stated that the government adequately announced the transmission routes during the pandemic.

Sixty-five percent agreed that during a pandemic, the governmental policy of quarantine, travel restrictions, and closing some borders were sufficient. Forty-three percent thought that an adequate number of tests had been performed, whereas 41% thought the opposite. While 53.3% of physicians thought that the number of tests being performed was sufficient, 45.9% of non-physician HCWs did not agree (P=0.030 OR: 0.29-0.35 χ2: 7.047) (Table 4).

Psychological conditions of HCWs during COVID-19 pandemic:

Among the questions classified to determine the psychological status for all HCWs, "concern of being infected with COVID-19" item had the highest mean total score with 2.60 (0.97), and "Decrease in the joy of living" item had the lowest mean total score with 0.92 (1.09).

The mean score of "feeling nervous/anxious/on edge" item was 2.53 (0.52) among physicians and 2.26 (0.86) among non-physicians (P=0.102, mean dif.=0.28, 95% confidence interval= -0.06 to 0.61).

The overall mean total score of "Increased physical pain and agony" item was 0.69 (1.19), and it was higher among non-physician HCWs compared to physicians (0.27(0.80) vs 0.76 (1.23), mean dif.= -0.50, 95% confidence interval=-1.002 to 0.006, P<0.05).

Table 5 presents scores of mental health variables for psychological conditions of HCWs during COVID-19 according to two groups.

Table 3: The attitudes and behaviors of HCWs about Covid-19 pandemic

Questions % (n)	Physician (n=45)				Non-physician HCWs (n=255)				*P*-value
	Disagree	Neither agree nor disagree	Agree	Strongly agree	Disagree	Neither agree nor disagree	Agree	Strongly agree	χ^2
Covid-19 affects daily life very much	6.7(3)	13.3(6)	20.0(9)	60(27)	0	10.6(27)	29.4(75)	60.0(153)	*P*=0.104 χ^2=6.157
Our future life will be affected	6.7(3)	40.0(18)	40.0(18)	13.3(6)	0	23.5(60)	50.6(129)	25.9(266)	*P*=0.100 χ^2=6.249
Covid-19 deeply affected social relations	6.7(3)	0	20.0(9)	73.3(33)	0	8.2(21)	35.3(90)	56.5(144)	*P*=0.038 χ^2=8.420
My anxiety level increased very much since the Covid-19 outbreak emerged.	6.7(3)	6.7(3)	80.0(36)	6.7(3)	0	29.4(75)	47.1(120)	23.5(60)	*P*=0.006 χ^2=12.591
My handwashing frequency increased very much outside the hospital	0	13.3(6)	80.0(36)	6.7(3)	1.2(3)	24.7(63)	74.1(189)	0	*P*=0.085 χ^2=6.619
I have to maintain social/personal distance	0	13.3(6)	13.3(6)	73.3(33)	1.2(3	2.4(6)	9.4(24)	87.1(222)	*P*=0.212 χ^2=4.498
I have to buy extra food	26.7(12)	0	33.3(15)	40.0(18)	15.3(39)	22.4(57)	18.8(48)	43.5(111)	*P*=0.294 χ^2=3.712
I have to buy extra cleaning supplies.	20.0(9)	0	6.7(3)	73.3(33)	21.2(54)	8.2(21)	8.2(21)	62.4(159)	*P*=0.677 χ^2=1.523
I have to wear a mask outdoors	6.7(3)	6.7(3)	13.3(6)	73.3(33)	3.5(9)	4.7(12)	8.2(21)	83.5(213)	*P*=0.815 χ^2=0.942
The precautions I take are preventive enough.	13.3(6)	26.7(12)	40.0(18)	20.0(9)	9.4(24)	18.8(48)	55.3(141)	16.5(42)	*P*=0.742 χ^2=1.244
I had to minimize my choice of mass transport	0	20.0(6)	13.3(6)	66.7(30)	1.2(3)	3.5(9)	22.4(57)	72.9(186)	*P*=0.089 χ^2=6.505
My interest in patients who came for routine examination diminished	46.7(21)	26.7(12)	20.0(9	6.7(3)	18.8(48)	49.4(126)	23.5(60)	8.2(21)	*P*=0.077 χ^2=6.840
My feelings about having a risky occupation have increased	0	6.7(3)	6.7(3)	86.7(39)	4.7(12)	2.4(6)	29.4(75)	63.5(162)	*P*=0.168 χ^2=5.052

Table 4: Opinions of HCWs about governmental precautions against Covid-19

Questions, % (n)	Physician (n=45)				Non-physician HCWs (n=255)				*P*-value
	Disagree	Neither agree nor disagree	Agree	Strongly agree	Disagree	Neither agree nor disagree	Agree	Strongly agree	χ^2
I am satisfied with overall governmental policy	6.7(3)	13.3(6)	66.7(30)	13.3(6)	9.4(24)	29.4(75)	42.4(108)	18.8(48)	*P*=0.365 χ^2=3.180
The government has taken enough precautions to prevent the spread of the disease	6.7(3)	60.0(27)	26.7(12)	6.7(3)	10.6(27)	55.3(141)	24.7(63)	9.4(24)	*P*=0.946 χ^2=0.373
The government has imposed enough travel restrictions and quarantine	20.0(9)	0	80.0(36)	0	16.5(42)	0	62.4(159)	21.2(54)	*P*=0.144 χ^2=3.881
The government has done enough to publicly communicate about the latest news	13.3(6)	20.0(9)	60.0(27)	6.7(3)	10.6(27)	31.8(81)	42.4(108)	15.3(39)	*P*=0.525 χ^2=2.236
The government has done enough to inform the public about transmission routes of COVID-19	6.7(3)	0	53.3(24)	40.0(18)	0	8.2(21)	58.8(150)	32.9(54)	*P*=0.864 χ^2=0.292
The government has performed enough Covid-19 tests	13.3(6)	33.3(15)	53.3(24)	0	45.9(117)	12.9(33)	41.2(105)	0	*P*=0.030 χ^2=7.047

Table 5: The mean scoring system values for Psychological manifestation items according to physicians and non-physician healthcare workers

Questions related Psychological manifestations, mean (SD)	Total	Physician (n=45)	Non- physician HCWs (n=255)	*P*-value
Feeling nervous/anxious/on edge	2.01(0.69)	2.53(0.52)	2.26(0.86)	0.10
Not being able to stop worrying	2.29(1.21)	1.93(1.44)	2.35(1.17)	0.22
Loss of joy of living	0.92(1.09)	0.53(0.92)	0.95(1.02)	0.14
Concern of being infected with covid-19	2.60(0.97)	2.67(0.90)	2.55(1.05)	0.70
Avoiding crowds	0.92(1.09)	1.40(0.74)	1.34(0.63)	0.75
Loss of interest in following news	2.43(1.07)	2.53(1.06)	2.41(1.07)	0.69
Difficulty in falling asleep	1.00(1.31)	1.27(1.39)	0.95(1.30)	0.40
Feeling of increased body pain and agony	0.69(1.19)	0.27(0.80)	0.76(1.23)	<0.05
Feeling down/depressed/hopeless	1.93(0.71)	1.87(0.64)	1.94(0.73)	0.71

Discussion

This is the first study on HCWs regarding the behavioral effects and level of psychological distress of the COVID-19 pandemic and reflecting their thoughts about governmental policies and practices.

In their study including 1257 Chinese HCWs, Lai et al. [6] demonstrated that the majority of HCWs showed anxiety, depression, and sleep disorder symptoms, and more than 70% reported psychological problems during the COVID-19 pandemic. In a study conducted in 2016 by Alsahafi et al. [7], participants' source of information was the "Ministry of Health" during MERS-coronavirus (MERS-CoV) (74.3%). According to a survey performed by Khan et al. [8], the main source of information was the internet. In our study, the information sources of HCWs were family (25.4%), WHO and other health agencies (20.8%), printed media such as newspapers and journals (1%), television 18.8%, and social media (14.2%).

Lei et al. [9] studied 1593 Chinese individuals during the COVID-19 pandemic and stated that society felt more anxious about being infected, had no psychological support, and faced more financial damage. We also found that the HCWs were most anxious about infecting the elderly and susceptible ones in their family, followed by infecting children, and economic loss.

According to the study of Khan et al. [8] during the MERS-CoV outbreak in Saudi Arabia, most HCWs stated that they took precautions using gloves, laboratory coats, and personal protective equipment but believed that these precautions would not reduce the prevalence of MERS-COV. In our study, the participants also took precautions against infection; nevertheless, they thought that these precautions would reduce the spread of COVID-19. The same study also demonstrated that HCWs had a positive attitude towards and concrete knowledge of MERS. Yet, there were situations the HCWs showed negative attitudes and inadequate knowledge. Similarly, 33.9% of the participants received psychological support via trying to gather

information, and only 0.8% collaborated with a therapist or psychiatrist in our study.

Styra et al. [10] performed a study in 2008 during the SARS outbreak that revealed that HCWs had high-stress levels even they had cared only for one patient. We also found similar anxiety and stress levels among more than half of HCWs during COVID-19.

Bukhari et al. [11] reported that nurses had remarkably high anxiety levels during MERS. Most HCWs enrolled in our study were also very anxious during the COVID-19 pandemic, particularly about infecting the elderly and fragile people, yet they were less anxious about being infected. Wang et al. [12] reported that more than half of the normal population enrolled in the study also experienced moderate to severe psychological effects. Most participants washed their hands with soap after touching contaminated objects, closed their mouths during sneezing or coughing, and wore a mask regardless of the symptoms of the patients. At the very beginning of the COVID-19 outbreak in China, the internet was the main information source (93.5%) [12]. We found that the frequency of handwashing and wearing masks both inside and outside the hospital increased remarkably among HCWs. In our study, the main information source of HCWs was not the internet but WHO and other health agencies.

According to Wen et al [13], very serious psychological problems emerged in society during the COVID-19 pandemic and informing the public and following appropriate strategies were necessary. We similarly found that COVID-19 pandemic had deeply affected most HCWs' daily lives and social relationships and that they were very anxious. A survey consisting of 10754 Iranians showed that the severity of anxiety symptoms was normal in 49.1%, severe in 9.3%, and very severe in 9.8% of the participants. Anxiety levels were significantly higher among females than males. Although COVID-19 related infection and mortality rates seemed to increase with older age, this study showed that anxiety levels were much higher in the 21-40-year age group [14]. The anxiety level was higher in our study and 53% of participants had severe anxiety. There was no difference between the two genders.

Research on mental health problems in medical health workers during the COVID-19 epidemic is limited. Zhang et al. [15] found that compared with nonmedical health workers, medical health workers had higher total Patient Health Questionnaire-4 scores. In our study, both physicians and non-physicians HCWs were feeling nervous/anxious/on edge largely and the highest anxiety score for all healthcare professionals regarded getting infected with COVID-19 according to Patient Health Questionnaire-4 (PHQ-4) and the Turkish Beck Depression Scale.

Limitations

The prominent limitation of this survey is the small study population. However, this study exhibited some important results because data were collected with one-on-one, face-to-face interviews with HCWs working exceptionally long hours during COVID-19. One limitation is that the analysis of potential risk factors that might cause obsessive-compulsive disease, depression, anxiety, and somatization disorder could not be performed. Finally, another limitation is that gender differences were not taken into account when evaluating the level of knowledge and anxiety among the groups in our study. Novel studies are needed to show gender differences in knowledge and anxiety levels between physician and non-physician HCWs.

Conclusion

The results of this survey study showed that the issue that healthcare professionals worry most about was the infection of elderly and risky patients. Concerned HCWs were most likely to receive COVID-19 related information from television. Physicians worry more about the COVID-19 spread than other healthcare professionals and think the COVID-19 tests have been performed adequately. The highest anxiety score among all healthcare professionals regarded getting infected with COVID-19. Most physician and non-physicians HCWs were feeling nervous/anxious/on edge. Non-physicians HCWs felt more body pain and agony. During COVID-19 pandemic, healthcare workers did not seek enough psychological support. HCWs felt anxious in their work environment during the COVID-19 pandemic like the previous pandemics, MERS, and SARS. We observed that increased anxiety levels of HCWs reduced their ability to care for patients as well as their quality of life and caused negative feelings such as working in a risky job and worry of infecting other people. We pointed out that HCWs should be completely informed via education programs including transmission paths, infection control measures, and programs that help reduce anxiety levels so that HCWs could efficiently fight against a pandemic. We need more studies to maintain a concrete fight with pandemics all around the world.

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