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Research of burnout, coronaphobia, hopelessness, and psychological resilience levels in healthcare workers during the COVID-19 pandemic

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Abstract

Healthcare workers (HCWs) who are at the forefront of combating the COVID-19 pandemic have faced significant psychosocial challenges. In this context, this study aimed to investigate burnout, hopelessness, coronaphobia, psychological resilience levels, and associated risk factors among HCWs during the COVID-19 pandemic. This study was designed as a cross-sectional study that was conducted from March 15 to August 15, 2021. A total of 432 HCWs were included in the study who are working in a tertiary central pandemic hospital. The rate of HCWs diagnosed with COVID-19 was 29.4%. It was found that HCWs experienced high levels of burnout, hopelessness, and coronaphobia. HCWs who have a history of psychiatric disease and who are doctors were at higher risk for burnout. It is noteworthy that more than one-third of HCWs (37.4%) reported moderate to severe levels of hopelessness. The levels of psychological resilience were higher in doctors and nurses. There was a significant positive correlation between burnout, hopelessness, and coronaphobia, and a significant negative correlation between psychological resilience and these variables. In conclusion, multidisciplinary approaches are needed to support the mental health of HCWs, providing psycho-educations, building psychological resilience, and providing the required institutional and psychosocial support.

Keywords: COVID-19, burnout, coronaphobia, hopelessness, psychological resilience

Introduction

The COVID-19 pandemic is a major pandemic that seriously has threatened public health. Since the date that COVID-19 was declared a pandemic [1], healthcare workers (HCWs), who are the most important actors in the fight against COVID-19, have been experiencing serious psychological and physical challenges. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes COVID-19 is a virus that can be easily contaminated and has the potential to be fatal and threaten people's lives. On the other hand, there is a high probability of transmission of the virus to healthcare workers who providing treatment and care support to COVID-19 patients. Accordingly, studies indicated that in previous viral pandemics, both frontline and non-front-line HCWs

are at increased risk of infection [2] and psychological problems [3]. Consistent with this, HCWs have been found to suffer from severe mental disorders during the current pandemic [4].

HCWs have faced a high risk of overwork, exhaustion, and burnout during this pandemic [5].

Burnout is a syndrome that occurs against stress at work. It was first defined by Maslach as depersonalization (DP), emotional exhaustion (EE), and low personal accomplishment (PA).

The DP component represents negative behaviors such as loss of idealism, withdrawal and irritability. The EE component is characterized by extreme fatigue, exhaustion, and loss of energy. The PA component is defined as the individual's feelings of achievement and competence, and ability to cope [6]. Burnout can also cause psychosomatic disorders, marital problems, insomnia, alcohol and substance abuse, and marital problems. In terms of working life, burnout manifests itself with reduced individual or group performance, increased risk of medical fault, and lower job satisfaction [7]. Studies conducted during this pandemic have

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shown that burnout levels are high in HCWs [8,9]. Therefore, burnout in HCWs is extremely important for the long-term control of the pandemic.

Hopelessness is defined as having negative expectations and emotions about the future, and severe levels of hopelessness can lead to a loss of motivation in individuals, affect their mental health negatively, and it is also associated with many psychological disorders and related symptoms such as depression, schizophrenia, alcoholism, and suicide [10]. In the context of this pandemic, it has been determined that hopelessness has increased due to the adverse psychosocial impacts of COVID-19 [11].

Major pandemics such as the current pandemic have disrupted individuals' routines and caused phobic reactions in many people [12]. Although moderate levels of fear and anxiety can motivate individuals to deal with threats to their health, severe levels of anxiety can have adverse effects on them. Specifically, coronaphobia is defined as an extreme form of this pandemic-related fear and anxiety [13]. Coronaphobia has been associated with mental health problems such as anxiety, depression, suicidal ideation, and hopelessness [14].

Psychological resilience is the ability to cope positively with traumas that arise, recovering after stressful experiences [15]. Considering that there is a negative association between resilience and mental disorders [16], psychological resilience is crucial to overcome the psychopathological problems caused by the current pandemic.

In summary, HCWs have faced significant psychosocial challenges such as burnout, coronaphobia, and hopelessness due to the current pandemic. This is the first study to simultaneously focus on these issues that can cause significant psychopathological problems. Additionally, psychological resilience is another important issue that should be evaluated in HCWs in terms of protecting mental health against stressful conditions. Hereby, this study aimed to evaluate burnout, hopelessness, coronaphobia, psychological resilience levels, and associated risk factors among HCWs during the COVID-19 pandemic.

Material and Methods

The sample of the study consisted of HCWs working in a central pandemic hospital in a metropolis city in Turkey. The study was designed as an observational cross-sectional study from March 15 to August 15, 2021. This sample size met the number at a statistical power of 0.80, significance level of 0.05, and a small effect size of 0.05, a sample size of 387 HCWs would be required [17]. HCWs were contacted via phone or e-mail in the hospital records, with the permission of the hospital administration. Interviews were conducted face-to-face with 432 HCWs who participated. Besides demographic and clinical data, the Brief Resilience Scale (BRS), Maslach Burnout Inventory (MBI), Beck Hopelessness Scale (BHS), and COVID-19 Phobia Scale (C19P-S) were used for evaluation. Exclusion criteria of the study were as follows; under age 18 years, have a severe neuropsychiatric disorder (mental retardation, dementia, schizophrenia, psychosis, mood disorders, alcohol/substance addiction, etc.), and have a history of psychiatric treatment within the last 3 months. The study was performed in accordance with the Declaration of Helsinki and Ethics Committee

approval was obtained (Approval number: 2020-388).

Assessment tools

Beck Hopelessness Scale (BHS): It is a self-report scale that evaluates individuals' negative expectations for the future [18]. The scale has 20 items to be scored between 0-1 and the high total score is interpreted as a high level of hopelessness. A total score of 0-4 is evaluated as asymptomatic, 4-8 as 'mild', 9-14 as 'moderate', and 15 and above as 'severe (suicidal)' levels of hopelessness [10]. The scale has been adapted to Turkish [19].

Brief Resilience Scale (BRS): The scale was developed to assess the psychological resilience of individuals [20]. BRS is a 5-point Likert type, 6-item (three items reverse) self-report scale. All items are rated on a 5-point as "strongly disagree (1)" to "strongly agree (5)". An increase in the total score obtained from the scale is evaluated as an increase in the levels of psychological resilience. The Turkish validity study of the scale was conducted [21].

Maslach Burnout Inventory (MBI): MBI was developed by Maslach and Jackson [6]. The scale consists of 22 items and three subscales. Among the subscales, the emotional exhaustion (EE) subscale consists of 9 items, the depersonalization (DP) subscale consists of 5 items, and the personal accomplishment (PA) subscale consists of 8 items in total. In the adaptation into Turkish, some changes were made in the inventory and it was decided to arrange the scale as "0 never" and "4 always" with seven grades in the original form [22]. Each of these three subscales is evaluated separately. Since there is no cut-off value for the scores obtained from the subscales, a distinction cannot be made in the form of burnout or absence. High scores on EE and D subscales and low score on PA subscale are considered as high burnout [6].

COVID-19 Phobia Scale (C19P-S): This scale was developed to assess the level of coronaphobia. The scale is a self-reported questionnaire that has 20 items. Items are rated on a 5-point scale from "strongly disagree (1)" to "strongly agree (5)". There is no specific cut-off point, as well as higher scores indicate greater coronaphobia [23].

Statistical analysis

In statistical analysis; The t-test, Kruskal-Wallis test, and Mann-Whitney U test were used to evaluate the differences between groups in independent samples, and the chi-square (χ^2) test was used to determine the group differences of categorical variables. The ANOVA test was used to compare the difference between groups. Tukey test was used to identify the source of differentiation. Relationships between variables were evaluated with multiple linear regression analysis and Pearson's test.

The statistical significance value was determined as $p < 0.05$ in all tests. Version 21.0 of the SPSS Windows program was used for statistical analysis.

Results

HCWs were between the ages of 20 and 51, with a mean age of 36.36 ± 6.51 . Of the HCWs 37.5% were men ($n=162$) and 62.5% ($n=270$) were women. Of the participants; 72% were married, 61.8% were university graduated, 90.3% urban residents, 12.3%

were living alone, 19.9% had a history of psychiatric disease, 16.9% have a family history of psychiatric disease, 29.4% were confirmed with COVID-19, and 45.7% have a family member confirmed with COVID-19 (Table 1). Participants were divided into three age groups, namely, 20-29: younger, 30-39: middle-aged, and 40-51: advanced-aged. The rates of 20-29, 30-29, and

40-51 age groups were as 32.9% (n=142), 38.4% (n=142), and 28.7%, respectively. Distribution of the participants by profession was 16% (n=69) doctors, 19.9% nurses (n=86), 22.5% medical secretaries (n=97), 16.9% security guards (n=73), 11.3 % health officers (n=49), and 13.4% cleaning staffs (n=69) (Table 1).

Table 1. Sociodemographic characteristics of the participants (n=432)

		n	%
Gender	Female	270	62.5
	Male	162	37.5
Marital Status	Married	311	72
	Single	121	28
Educational Status	Under university	165	38.2
	University	267	61.8
Profession	Doctor	69	16
	Nurse	86	19.9
	Medical secretary	97	22.5
	Security guard	73	16.9
	Health officer	49	11.3
	Cleaning staff	58	13.4
Residential status	Urban area	389	90.3
	Rural area	42	9.7
Living status	Family/ parents/ friends	379	87.7
	Alone	53	12.3
History of psychiatric disease	No	346	80.1
	Yes	86	19.9
Family history of psychiatric disease	No	359	83.1
	Yes	73	16.9
Diagnosed with COVID-19	No	305	70.6
	Yes	127	29.4
Have a family member diagnosed with COVID-19	No	235	54.3
	Yes	197	45.7

The mean scores of MBI subscales EE, DP, and PA were as 14.40 ± 7.47 , 5.64 ± 3.42 , and 17.79 ± 4.66 , respectively. A comparison of the mean scores of MBI subscales according to demographic data is summarized in Table 2. The EE score was higher in HCWs who were female, university graduates and have a history of psychiatric disease ($p < 0.05$). The DP score was higher in HCWs who were single and have a history of psychiatric disorder ($p < 0.05$). The mean score of PA was lower in HCWs who were living alone and have a history of psychiatric disease ($p < 0.05$). ANOVA test was used to determine whether the mean scores of MBI subscales were according to professions and age groups. In terms of professions, there were significant differences according to the mean score of the EE subscale ($F=31.63$; $p=0.001$), DP subscale ($F=8.21$; $p=0.036$), and PA subscale ($F=14.04$; $p=0.013$). The mean score of EE was higher in doctors ($p < 0.05$). The mean score of DP was higher in the doctor and secretary groups ($p < 0.05$), but there was no significant difference between the groups ($p > 0.05$). The mean score of PA was lower in the security guard group ($p < 0.05$). In terms of age groups, there were significant differences according to the mean score of EE subscale ($F=12.31$; $p=0.021$), DP subscale

($F=24.22$; $p=0.001$), and PA subscale ($F=15.34$; $p=0.011$). The mean EE score was higher in younger ($p < 0.05$), mean DP score was higher in younger and in middle-aged ($p < 0.05$), but there was no significant difference between these groups ($p > 0.05$) and also, mean PA score was lower in middle-aged HCWs.

The mean score of BHS was 7.71 ± 4.31 . The rate of hopelessness levels was found to be as 26.5% asymptomatic, 36.1% mild, 30.5% moderate and 6.9% severe. Hopelessness was higher in HCWs who were younger, was single, have a history of psychiatric disease and, were cleaning-staffs ($p < 0.05$) (Table 3). Moreover, there was no significant difference between doctors and nurses in terms of mean BHS score ($p > 0.05$).

The mean total score of C19P-S was 67.74 ± 16.98 . The C19P-S score was higher in HCWs who were female, were nurses, were confirmed with COVID-19, had a family member confirmed with COVID-19 and had a history of psychiatric disorder ($p < 0.05$). A comparison of the mean score of C19P-S according to sociodemographic data is summarized in Table 4.

Table 2. Comparison of the mean scores of MBI subscales according to sociodemographic variables

Gender	Female	15.45±7.95	t=3.572	5.81±3.87	t=0.875	18.12±4.18	t=1.832
	Male	12.67±6.31	p=0.018	5.25±3.09	p=0.382	17.14±5.76	p=0.082
Marital status	Married	14.31±7.16	t=0.289	5.39±3.23	t=3.153	17.98±4.27	t=1.924
	Single	14.55±8.73	p=0.778	6.81±3.83	p=0.033	16.95±5.13	p=0.076
Education Level	Under university	10.39±6.25	t=7.518	5.35±3.16	t=1.078	15.32±4.51	t=2.341
	University	16.90±7.94	p=0.001	5.82±3.49	p=0.198	18.67±4.72	p=0.039
Residential status	Urban	14.27±7.14	t=1.128	5.87±3.56	t=0.452	18.15±5.12	t=1.607
	Rural	15.56±8.35	p=0.174	5.43±2.93	p=0.601	17.29±3.21	p=0.094
Living status	Alone	14.75±6.62	t=0.345	6.25±3.06	t=0.749	15.13±5.23	t=2.668
	Not alone	14.32±8.11	p=0.730	5.49±3.65	p=0.457	18.55±4.39	p=0.031
History of psychiatric disease	Yes	22.64±6.63	t=9.803	7.14±3.95	t=3.492	15.14±4.46	t=2.926
	No	12.37±7.81	p=0.001	5.53±3.34	p=0.025	18.82±4.78	p=0.038
Profession	Doctor	20.08±8.12		7.36±3.96		20.86±5.78	
	Nurse	13.52±7.58		4.25±3.08		20.58±5.57	
	MS	15.09±7.36	F=31.63	6.72±3.89	F=8.21	18.22±4.73	F=14.04
	SG	8.66±4.43	p=0.001	5.04±3.14	p=0.036	15.00±3.42	p=0.013
	HO	15.55±6.77		5.66±3.22		17.55±3.94	
	CS	14.66±6.24		6.00±3.49		16.37±3.56	
Age	20-29	19.08±8.49		6.92±3.72		19.58±4.95	
	30-39	15.35±7.55	F=12.31	6.41±3.36	F=24.22	14.86±3.46	F=15.34
	40-51	14.47±6.71	p=0.021	3.28±3.02	p=0.001	18.67±4.53	p=0.011

F: ANOVA test, t: t-test, MBI: Maslach Burnout Inventory, EE: Emotional Exhaustion, DP: Depersonalization, PA: Personal Accomplishment, m: mean, sd: standard deviation, MS: Medical Secretary, SG: Security Guard, HO: Health Officer, CS: Cleaning Staff Values below 0.001 are specified as 0.001

Table 3. Comparison of the mean score of Beck Hopelessness Scale with sociodemographic variables

		m	sd		p
Gender	Female	7.92	4.60	0.123*	0.902
	Male	7.31	4.44		
Age	20-29	8.91	5.10	8.482**	0.001
	30-39	7.27	4.34		
	40-51	7.56	4.28		
Marital status	Single	8.98	4.12	3.545*	0.022
	Married	7.18	4.60		
Graduated University	Yes	7.97	4.98	0.563*	0.574
	No	7.21	3.73		
Residential status	Rural area	8.45	4.70	-1.055*	0.302
	Urban area	7.38	4.16		
Living status	Alone	8.75	4.65	-1.508*	0.132
	Not alone	7.43	4.13		
History of psychiatric disease	Yes	10.21	4.93	-6.717*	0.007
	No	6.71	4.10		
Profession	Doctor	7.27	4.86	2.432**	0.034
	Nurse	7.68	4.96		
	Medical secretary	7.59	4.28		
	Security guard	7.00	2.96		
	Health officer	5.88	4.93		
	Cleaning staff	8.54	5.42		

**ANOVA test, *t-test, m: mean, sd: standard deviation

Table 4. Comparison of the mean score of COVID-19 Phobia Scale with sociodemographic variables

		m	sd		p
Gender	Female	70.14	18.64	2.794*	0.036
	Male	63.82	15.27		
Age	20-29	67.74	16.15	2.423**	0.090
	30-39	66.13	17.13		
	40-51	69.62	20.79		
Marital status	Married	68.17	18.22	-1.356*	0.119
	Single	65.40	15.30		
Graduated university	Yes	69.47	17.60	-1.071*	0.251
	No	65.57	18.09		
Residential status	Rural area	72.50	23.61	-1.753*	0.211
	Urban area	67.10	17.95		
Living status	Alone	69.87	12.29	1.475*	0.106
	Not alone	66.71	18.68		
History of psychiatric disease	Yes	73.92	1.68	3.605*	0.023
	No	66.27	16.45		
Profession	Doctor	72.45	20.83	7.267**	0.001
	Nurse	75.58	20.66		
	Medical secretary	71.95	18.23		
	Security guard	59.00	14.03		
	Health officer	76.55	21.75		
	Cleaning staff	71.00	17.52		
Diagnosed with COVID-19	Yes	71.31	17.26	4.821*	0.001
	No	61.64	15.59		
Have a family member diagnosed with COVID-19	Yes	69.97	17.25	-4.213*	0.015
	No	61.11	15.31		

**ANOVA, * t-test, m: mean, sd: standard deviation

Table 5. Comparison of the mean score of Brief Resilience Scale with sociodemographic variables

		m	sd		p
Gender	Female	18.87	4.68	-2.352*	0.019
	Male	21.51	5.17		
Age	20-29	17.45	6.09	7.064**	0.001
	30-39	20.05	4.19		
	40-51	20.53	5.65		
Marital status	Married	19.94	5.28	-0.259*	0.796
	Single	19.62	4.66		
Graduated university	Yes	20.60	4.14	2.452*	0.015
	No	17.45	5.60		
Residential status	Rural area	19.50	7.24	0.285*	0.778
	Urban area	19.92	4.97		
Living status	Alone	18.62	4.00	1.841*	0.066
	Not alone	20.06	5.21		
History of psychiatric disease	Yes	16.92	5.27	6.191*	0.001
	No	20.62	4.81		
Profession	Doctor	20.83	4.91	4.296**	0.024
	Nurse	20.12	5.58		
	Medical secretary	19.18	4.55		
	Security guard	18.50	4.22		
	Health officer	17.88	5.37		
	Cleaning staff	19.33	6.37		

**ANOVA, * t-test, m: mean, sd: standard deviation

The mean score of BRS was 19.85 ± 4.84 . A comparison of the mean score of BRS according to sociodemographic data are shown in Table 5. Psychological resilience was higher in HCWs who were male, were doctors and nurses ($F=4.296$; $p=0.024$), were aged between 30-39 and were aged between 40-51 ($F=7.064$; $p=0.001$), were university graduates, and had not a history of psychiatric disorder ($p<0.05$). In addition, there was no significant difference between doctors and nurses, as well as between the aged of 30-39 and 40-51, in terms of mean BRS scores ($p>0.05$).

The relationship between burnout, hopelessness, coronaphobia, and psychological resilience variables was determined by Pearson's test. Burnout was positively correlated with coronaphobia ($r: 0.221$; $p<0.05$), and hopelessness ($r: 0.342$; $p<0.01$), and was negatively correlated with psychological resilience ($r:-0.599$; $p<0.01$). In addition, a significant negative correlation was found between psychological resilience and coronaphobia ($r:-0.263$; $p<0.05$), and hopelessness ($r:-0.416$; $p<0.01$) (Table 6).

Table 6. Correlations between burnout, hopelessness, coronaphobia, and resilience variables

	Burnout	Hopelessness	Coronaphobia	Resilience
Burnout				
Hopelessness	$r= 0.342$; $p=0.005$			
Coronaphobia	$r= 0.221$; $p=0.018$	$r= 0.131$; $p=0.029$		
Resilience	$r= -0.599$; $p=0.001$	$r= -0.416$; $p=0.002$	$r= -0.263$; $p=0.013$	

r: Pearson correlation analysis

In the study, the relationships between the variables were examined using the multiple linear regression analysis. Resilience as the dependent variable; burnout, hopelessness and coronaphobia were determined as independent variables. According to the findings, related variables explain resilience significantly ($R=.685$, $R^2=.469$, $F=94.128$, $p<0.00$). When the relationships of the variables with resilience were examined, it was concluded that there was a significant negative correlation (Table 7). According to findings, related variables explain 46.9% of the variance of resilience.

Table 7. Multiple linear regression analysis between variables associated with resilience

	β	SEB	Std. β	t value
Burnout	-0.235	0.19	-0.514	-12.595*
Hopelessness	-0.067	0.49	-0.182	-4.276*
Coronaphobia	-0.053	0.11	-0.190	-5.028*

* $p<.00$, SEB: Standard error of beta, Std.: Standard

Discussion

HCWs have a higher risk of virus transmission because they are exposed to close contact with COVID-19 patients. Studies have also reported a high rate of hospital transmission of COVID-19 cases among HCWs [24, 25]. Consistently, the rate of COVID-19 cases in HCWs in this study was high, at 29.4%. The frequency of COVID-19 cases in HCWs appears to be in a wide prevalence range (between 0.4% and 49.6%), considering studies conducted in many different countries [26]. When the studies were examined

with regard to the reasons for the variability in the results, it has been determined that factors such as the design, scope, sample size, region and period affect the findings of the studies.

HCWs have been faced with increased workload and emotional exhaustion due to COVID-19. During the current pandemic, it is crucial to understand burnout and related factors in HCWs in terms of maintaining the quality of the healthcare system. Burnout is evaluated as emotional, mental and physical fatigue resulting from prolonged exposure to stress conditions [27]. Considering a the long time since the pandemic emerged in December 2019, the risk of burnout in HCWs is increasing over time. In this context, due to the fact that the pandemic still could not be under control, burnout in HCWs has become a serious mental health problem that should not be neglected. There is also a decrease in physical abilities due to mental problems of burnout [28]. During the COVID-19 pandemic, most of the studies were survey-based and conducted during an early period of the pandemic, and also assessment tools that measure the level of burnout were mostly different. However, the common result of these studies is that HCWs experienced high levels of burnout symptoms [29, 30]. Consistently, it was found that HCWs had high levels of burnout symptoms in this study. Furthermore, demographic factors such as being younger, female, a doctor, having a graduation from a university, and having a history of psychiatric disorder were associated with higher levels of emotional exhaustion. Moreover, demographic factors such as being a doctor and medical secretary, younger and middle-aged, single, and having a history of psychiatric disease were associated with higher levels of depersonalization and also, being a security guard, middle-aged, living alone, and having a history of a psychiatric disorder was associated with lower levels of personal accomplishment. The fact that having a history of psychiatric disease and being a doctor are common risk factors for burnout are remarkable findings of this study. In this context, the findings of this study report the multifactorial burnout. It has been found that each of the burnout dimensions is associated with different risk factors in itself. Therefore, it is important to consider their dimensions separately when assessing burnout for HCWs. As a result, it was concluded that the risk of burnout is multifactorial. Accordingly, in previous studies, it was determined that risk factors vary in studies such as gender, age, and medical professions [31, 32]. Considering that the COVID-19 pandemic could not be under control to this date and continues with new coronavirus variants, it is highly possible that burnout in HCWs will increase and it will be a serious threat to the sustainability of the health system.

Hopelessness is a psychological symptom it is related to various mental health problems [10]. Therefore, it is crucial to define its severity and associated risk factors. In the limited studies conducted during the current pandemic, the levels of hopelessness were high in HCWs [33,34]. Notably, in this study, it was found that more than one-third (37.4%) of HCWs had moderate to severe levels of hopelessness. Additionally, the BHS score in this study was found to be higher than in the studies conducted by Hacımusalar et al. [34] and Güngör & Uçman [33]. This result can be interpreted as the increase in the levels of hopelessness over time since this study was conducted after these studies. On the other hand, hopelessness was higher in HCWs who were younger, single, and had a history of psychiatric disease. Although it was found that nurses had higher hopelessness than doctors in a study conducted by Hacımusalar et

al. [34], it was not significantly different between doctors and nurses in this study.

Coronaphobia, which is the term used to define dysfunctional anxiety regarding coronavirus contamination, has been examined within this context [13]. There are limited studies on coronaphobia in the literature and also the coronavirus anxiety scale (CAS) was used for assessment in these studies [14,35]. Notably, C19P-S was used in this study, which was developed specifically for coronaphobia by Arpacı et al. [23]. Although the CAS is a uni-factorial scale, the C19P-S is a multi-factorial scale and also it was developed to evaluate the phobic reactions recommended by the DSM-5 under specific phobias. To this date, this is the first study on coronaphobia in HCWs using C19P-S. Compared to previous studies in the general population using C19P-S [23, 36], coronaphobia levels were found to be higher in HCWs in this study. Additionally, coronaphobia levels were higher in HCWs who were women, nurses, confirmed with COVID-19, have a family member confirmed with COVID-19, and have a history of psychiatric disease. Due to the lack of studies using similar assessment tools in which HCWs participated, it was not possible to make a comparison. These findings could be explained by the fear of getting infected with the virus, anxiety of contracting and transmitting the virus to someone else, fear of death due to COVID-19, and also fear of losing a loved one.

Previous studies indicated that psychological resilience is a protective factor against the negative psychological effects of stressful or traumatic events such as disasters, floods, and outbreaks and as well as individuals with high psychological resilience are less negatively affected by these situations [15]. In a review study conducted during this pandemic, HCWs were reported to have moderate to high levels of resilience [37]. In this study, it was found that the resilience levels of HCWs were high in general (the mean score of BRS was 19.45). Consistently, a slightly lower rate was found in a study conducted with similar tools in HCWs during this pandemic (the mean score of BRS was 18.43) [38]. Furthermore, psychological resilience was found to be positively associated with being male, a doctor and nurse, aged above 30 years old, and graduate of a university, however negatively associated with having a history of psychiatric disease in this study. Similarly, in a study conducted during this pandemic, it was found that doctors have higher resilience than other HCWs [39]. This finding may be related to the degree of knowledge and medical experience between doctors and others.

Due to the limited number of studies evaluating the resilience levels of HCWs by comparing with demographic variables, it was not possible to compare with very similar studies. Furthermore, a study conducted on COVID-19 indicated that most people overcome challenges more easily and become stronger through psychological resilience [40]. Consistent with this, a significant negative correlation was found between resilience with burnout, hopelessness, and coronaphobia in this study, as well as which means that when HCWs have better resilience, they will be less affected by psychosocial problems. This finding is remarkable in terms of revealing the importance of psychological resilience in protecting HCWs from severe burnout, hopelessness, and coronaphobia. Additionally, a positively significant relationship was found between burnout, hopelessness, and coronaphobia.

This result was not surprising considering that there are common psychiatric disorders and symptoms such as depression, anxiety, exhaustion, and stress underlying these mental problems.

Another important finding of this study is that there is a significant negative correlation between resilience and hopelessness, burnout, and coronaphobia. It's mean that, as resilience levels increase, hopelessness, burnout, and coronaphobia decrease. The reason for this result is that psychological resilience has an important protective function in coping with stress and mental problems of individuals.

This study has several limitations. First, due to the design of the study, the findings reflect the psychological effects of the pandemic within a given period. Thus, longitudinal and longer-period studies examining the long-term impacts of the pandemic on HCWs are needed. Secondly, due to study sample was comparatively low and was a single-center study limits the generalizability of the findings. Multicenter studies with higher samples could reveal more generalizable results. The lack of a retrospective investigation of whether the participants experienced these psychological problems before the pandemic, and accordingly the lack of comparison between pre-pandemic and current time can be considered as another limitation. Despite these limitations, the collection of data through face-to-face interviews (most of the studies in this field have been conducted with online surveys, which may have limited the accessibility of HCWs less familiar with the internet or less inclined to use it) and comprehensive clinical and demographic evaluations on the aforementioned issues are the notable strengths of this study. Moreover, this study will make an important contribution to literature, where there is a limited study in this regard.

Conclusion

In conclusion, the findings of this study revealed that HCWs have experienced high levels of burnout, hopelessness, and coronaphobia during this pandemic. In order to provide timely psychological support to HCWs and to prevent the occurrence of more complex psychiatric disorders, it is important to identify demographic risk factors and clinical associated variables for these psychological situations. In this context, this study has comprehensive and detailed findings in this regard. Another remarkable finding is that there was a strong negative relationship between resilience with burnout, hopelessness, and coronaphobia, which means that HCWs with better resilience are less affected by these conditions. On the other hand, considering that the pandemic is not under control currently and uncertainty still remains around the pandemic, it is highly likely that psychosocial problems such as burnout, hopelessness, and coronaphobia will increase in HCWs and there will be deterioration in the health system. Therefore, multidisciplinary (e.g., psychiatrists, psychologists, social workers, institutions, or hospital policymakers) and well-organized interventions are needed to improve the mental health of HCWs, prevent and manage psychosocial challenges, provide psycho-educations, build psychological resilience, and provide the required institutional and psychosocial support. Furthermore, considering the restrictions such as social distance and isolation, internet service support should be provided by hospital administrators for online interviews.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

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Ethical approval

Ethical approval was received Ethical Committee of the Antalya Training and Research Hospital (Decision number: 2020-388).

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