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ORIGINAL PAPER

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Burnout Among Healthcare Workers During Covid-19 Pandemic: Results from Seven Hospitals in Western Greece

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ABSTRACT

Background: Burnout is increasingly being recognized as a major concern, affecting the physical and mental well-being of Healthcare workers (HCWs). **Objective:** The aim of the study was to investigate the incidence of occupational exhaustion in healthcare workers (doctors, nurses, paramedics, assistants, administrative staff) and possible contributing factors during the COVID-19 pandemic. **Methods:** This study was conducted from March to September 2022 in seven (7) hospitals in Western Greece. It was carried out using an anonymous questionnaire. The questionnaire was designed based on results of previously published studies and consisted of 22 multiple-choice questions. **Results:** There were 259 (60.2%) female and 178 (39.8%) male participants enrolled in the study. The majority of the respondents were nurses (n=207, 48.1%), followed by doctors (n+ 178, 41.4%). There was a marked increase in emotional exhaustion, depersonalization, personal fulfillment and pandemic-related total burnout in participants older than 61 years old (40,05±2,2, 27,16±1,0, 21,11±4,1, 88,32±4,3, respectively). Widow/ers healthcare workers were mostly affected from pandemic related burnout compared to married, unmarried, and divorced healthcare workers. Respondents without postgraduate education demonstrated significantly greater prevalence of emotional exhaustion, depersonalization and pandemic-related total burnout in comparison to those with doctoral/master

degree. The prevalence of personal and work-related burnout among paramedics and administrative staff was higher than that seen in doctors and nurses (32,82±3,8 vs 32,08±5,0/29,11±4,7 22,33±4,0 vs 21,57±3,1/18,89±5,4 19,60±3,9 vs 17,26±2,8/15,24±3,7 74,76±10,4 vs 70,92±9,5/63,23±12,1). The prevalence of emotional exhaustion and work-related total burnout was significantly higher among doctors, nurses, paramedics, and administrative staff working with direct contact with COVID-19 patients than those among healthcare workers working without direct contact with COVID-19 patients. **Conclusion:** The present study highlights the impact of the COVID-19 pandemic on healthcare workers.

Keywords: COVID-19, pandemic, burnout, healthcare workers, exhaustion.

1. BACKGROUND

Burnout is being recognized globally as a major concern, affecting the physical and mental well-being of Healthcare workers (HCWs). During the current COVID-19 pandemic, locking down of international and state borders, strict city, and also area wise lockdown have affected HCWs and their families as well, causing negative psychological effects (1).

Burnout was firstly described in 1974 by Freudenberg, thus inspiring the investigation of the characteristics and prevalence of

this phenomenon. Several researchers in the USA and Europe (Maslach, Jackson, Arosen, etc.) especially during the 1980s and 1990s, have been studying the burnout syndrome in terms of its definition, appearance, etiology, and indications (2).

Maslach et al described burnout as three distinct aspects: emotional exhaustion, depersonalization, and lack of personal and professional fulfillment (3). In more details, professional burnout means the exhaustion of the mental reserves of a healthcare worker in his/her attempt to adapt to face the daily difficulties related to his professional activity. The combination of the ever-increasing work demands with other psychologically stressful factors, such as the economic crisis of recent years, contribute to the worsening of work stress, which has serious effects on both the physical and mental health of employees and, by extension, on their quality of life (4).

Workload and time pressure have been cited in several studies as the main causes of exhaustion, contributing to emotional exhaustion as well (4). Patient-related stress and work-related behaviors have also been identified as factors associated with mental and emotional exhaus-

	n	%	
Gender	Male	171	39.8
	Female	259	60.2
Age (years)	<25	64	14.9
	26-30	146	34.0
	31-45	163	37.9
	46-60	38	8.8
	>61	19	4.4
Familiar Status	Married	130	30.2
	Unmarried	150	34.9
	Divorced	107	24.9
	Widow/-er	43	10.0
Job profile	Doctor	178	41.4
	Nurse	207	48.1
	Other	45	10.5
Level of Education	MSc	152	35.3
	PhD	79	18.4
	Nothing	199	46.3
Working in the origin place	Yes	114	26.5
	No	316	73.5
Working with COVID-19 patients	Yes	143	33.3
	No	287	66.7

Table 1. Demographic characteristics of study population

	Married		Unmarried		Divorced		Widow/-er		p
	N	X±SD	N	X±SD	N	X±SD	N	X±SD	
Emotional exhaustion	130	32,58±4,7	150	31,57±4,9	107	26,25±3,0	43	33,30±2,9	0.001
Personal fulfillment	130	22,54±4,6	150	20,81±4,1	107	16,05±2,9	43	22,95±1,8	0.001
Depersonalization	130	18,16±3,8	150	16,74±3,5	107	13,95±2,8	43	17,30±2,0	0.001
Total Burnout	130	73,28±11,5	150	69,12±10,7	107	56,25±6,0	43	73,56±5,6	0.001

Table 2. Burnout among healthcare workers depending on marital status. This table shows the differences in median values of four parameters (emotional exhaustion, personal fulfillment, depersonalization, and total burnout) based on marital status. Widows/-ers were mostly affected.

tion (5).

2. OBJECTIVE

The aim of the present study was to investigate the incidence of occupational exhaustion in healthcare workers (HCW) (doctors, nurses, paramedics, assistants, administrative staff) of COVID-19 clinics as compared to non-COVID clinics HCW and, explore the potential contributing factors.

3. MATERIAL AND METHODS

This study was conducted from March to September 2022 in seven (7) hospitals in Western Greece: “Saint Andrew” General Hospital, University Hospital of Patras, General Hospital of Agrinio, General Hospital of Mesologgi, General Hospital of Aigio, General Hospital of Pyrgos, and the Paediatric Hospital of Patras «Caramandaneio». Participants of each hospital were randomly selected. The study was approved by each Institutional Ethics Committee of the above mentioned hospitals. The study was conducted in line with Ethics Committee of our University and the guidelines of the Declaration of Helsinki. An overview of the study objectives was provided to potential participants, and verbal consent was obtained.

Our study was carried out using an anonymous questionnaire, which was designed based on results of

previously published studies (1, 6, 7). It consisted of 22 multiple-choice questions. General questions were about job profile, age, gender, and working environment. To determine burnout, the questionnaire included 3 sections: 1. emotional exhaustion, 2. personal fulfillment and 3. depersonalization. The questionnaire was first piloted to a small sample of Healthcare workers.

Data were analyzed using IBM SPSS® Statistics version 21. Variables measured on nominal scale were summarized using proportions (%). Mean scores (mean ± SD) in personal, work-related, and client-related (pandemic related) domains were calculated using the 0- to 100-point scale. The mean burnout scores in each domain were compared using ANOVA. Categorical variables were analyzed using Pearson’s x² test. Univariate analysis was performed to check for association between personal, work-related, and client-related (pandemic related) burnout and demographic factors. The minimum value of the level of statistical significance (p-value) was set at 0.05.

4. RESULTS

A total of 600 questionnaires were distributed, while 430 questionnaires were finally collected, having a response rate of 71.7%. There were 259 (60.2%) female and 178 (39.8%) male participants. The majority of the respondents were nurses (48.1%, n=207), 41.4% were

	Doctor		Nurse		Other (paramedics, administrative staff)		p
	N	X±SD	N	X±SD	N	X±SD	
Emotional exhaustion	178	32,08±5,0	207	29,11±4,7	45	32,82±3,8	0.001
Personal fulfillment	178	21,57±3,1	207	18,89±5,4	45	22,33±4,0	0.001
Depersonalization	178	17,26±2,8	207	15,24±3,7	45	19,60±3,9	0.001
Total Burnout	178	70,92±9,5	207	63,23±12,1	45	74,76±10,4	0.001

Table 3: Burnout among healthcare workers depending on type of work. This table shows the differences in median values of four parameters (emotional exhaustion, personal fulfillment, depersonalization, and total burnout) based on type of work (nurse, doctor, paramedics, other). Healthcare workers other than doctors or nurses were most affected.

	Working directly with COVID-19 patients		Working without COVID-19 patients		P
	N	X±SD	N	X±SD	
Emotional exhaustion	143	31,76±4,7	287	30,21±5,0	0.002
Personal fulfillment	143	20,85±5,9	287	20,11±3,8	0.175
Depersonalization	143	16,73±3,8	287	16,43±3,6	0.423
Total Burnout	143	69,35±12,8	287	66,76±11,1	0.040

Table 4: The table above shows the level of burnout depended on COVID-19-related work. Healthcare workers working directly with COVID-19 patients were those who showed statistically significant higher level of emotional exhaustion and total burnout compared to those working without COVID-19 patients (p:0.002 and p:0.04 respectively).

doctors and 10.5% were paramedics and administrative staff. Demographic characteristics are shown in Table 1.

There was a marked increase in emotional exhaustion, depersonalization, personal fulfillment and pandemic-related total burnout in participants older than 61 years old (40,05±2,2, 27,16±1,0, 21,11±4,1, 88,32±4,3, respectively) as compared to those age 26-30 years old (29,97±4,8, 18,82±5,1, 15,58±3,7, 64,36±11,7 respectively) and 31-45 years old (32,19±3,0, 21,38±2,5, 17,64±3,0, 71,21±6,9). Surprisingly, widowers healthcare workers were mostly affected from pandemic related burnout compared to married, unmarried, and divorced healthcare workers (Table 2). Respondents without postgraduate education demonstrated significantly greater prevalence of emotional exhaustion, depersonalization and pandemic-related total burnout as compared to those with doctoral/master degree (33,09±3,9 vs. 29,82±5,2/28,11±4,7, p:0.000, 18,43±3,3 vs. 15,37±3,5/14,65±3, p:0.000, 74.25±8 vs. 64,97±10,9/60,32±10,5 p:0.000, respectively) The prevalence of personal and work-related burnout among paramedics and administrative staff was higher than that seen in doctors and nurses (32,82±3,8 vs. 32,08±5,0/29,11±4,7 22,33±4,0 vs. 21,57±3,1/18,89±5,4 19,60±3,9 vs. 17,26±2,8/15,24±3,7 74,76±10,4 vs. 70,92±9,5/63,23±12,1.) (Table 3).

The prevalence of emotional exhaustion and work-related total burnout was significantly higher among doctors, nurses, paramedics, and administrative staff working absolutely with COVID-19 patients than those among healthcare workers working without direct contact with COVID-19 patients (31,76±4,7 vs. 30,21±5,0, p:0.002 and 69,35±12,8 vs. 66,76±11,1, p:0.040).(Table 4) Moreover, 70.99% of male population versus 65.39% of female population (p: 0,000), working in COVID-19 units, answered that they had total burnout.

5. DISCUSSION

The COVID-19 pandemic has led to an increased workload on healthcare workers, especially in HCW of COVID-19 clinics. In the present study we investigated the emotional exhaustion, depersonalization and total burnout among doctors, nurses and other personnel facing COVID-19, in Western Greece. To our knowledge this is the first study evaluating the burnout among healthcare workers during the COVID-19 pandemic in Western Greece. The sample consisted of a total of 430 participants with an average age between 31 to 45 years old, most of them females (60.2%).

It has already been reported that healthcare workers have been affected strongly during COVID-19 pandemic. At first many healthcare workers were fired without pay due to the reduction and cancellation of non-emergent, non-COVID-19 related services. Apart from that, among those that continued to work, the ongoing, rapid spread of pandemic created extraordinary levels of stress on healthcare workers with increased workload and concern about being exposed to COVID-19 (8). Secondly, a recently published systematic review and meta-analysis on the psychological distress of healthcare workers treating COVID-19 patients in Asia also speculated that the high burnout rate among healthcare workers during the COVID-19 pandemic, compared to that during the SARS and MERS outbreaks, is due to the prolonged pandemic (6).

During the Covid-19 pandemic, high rates of burnout have been found in healthcare workers. These results could be due to the fact that at the beginning, health personnel experienced a sensation of excessive effort and depletion of their own emotional resources. Then, given the persistence of the stressor (e.g. care pressure), in some of the cases, this could lead to distant cognitive affective attitudes (depersonalization), subsequently leading to feelings of ineffectiveness and loss of confidence (9).

In our study, we found that there was a significant increase in pandemic-related burnout (emotional exhaustion, depersonalization) among healthcare workers older than 61 years old. A reasonable explanation may be that older healthcare workers have anxiety and fear of contracting COVID-19 infection because of associated increased mortality of COVID-19 in age > 60 year old. It is remarkable that Mohsin S.F et al, reported during COVID-19 outbreak an increased fear and anxiety prevalence

of 42.72% among 737 healthcare workers (10). Moreover, Mange et al found that older health workers aged 40 to 50 years have a greater subjection to psychological and physical oppressions caused by stress resulting from overworking and carrying out tedious duties and this resulted in burnout (11, 12).

Koriyama et al reported that marital status was associated with burnout, which come in complete agreement with our results (13, 14). We showed that widows and widowers are more affected regarding burnout during COVID-19 pandemic. Being married or being in a relationship are simultaneously sources of support and stress in adult life. Married individuals report greater happiness and life satisfaction compared to unmarried or widow ones. Moreover, loneliness and isolation appear to be a substantial reason for reduced endurance of a stressful work environment (14). On the other hand we found that unmarried and divorced individuals are less affected, a finding that needs further investigation. Demographic factors were significantly associated with burnout including educational level too. Lower educational status was associated with higher burnout, as it is likely associated with more anxiety.

In our study, the prevalence of emotional exhaustion, personal fulfillment, depersonalization, and total burnout among paramedics and administrative staff, was statistically significant higher than that seen in doctors and nurses. In accordance to our findings are the results from a Japanese study survey that investigated burnout among 312 HCWs in a Japanese single hospital. The prevalence of burnout was 31.4%, and notably, high prevalence of burnout was observed in HCWs other than physicians (13). The observation that every strata of the healthcare workforce can be at risk of increased psychological burden was also noted by Rossi et al., who found that non-frontline HCWs had largely comparable psychological outcomes, such as anxiety, depression, insomnia, and perceived stress levels compared with frontline HCWs (15, 16).

It is however remarkable that in our study, in accordance with what is already published, physicians showed higher rates of emotional exhaustion, personal fulfillment depersonalization, and total burnout compared to nurses. In general, Shanafelt et al explored the prevalence of burnout among physicians in the USA. In their study, physicians had a higher likelihood of burnout than general employees (37.9% vs 27.8%) (17).

We also demonstrated that healthcare workers working directly with COVID-19 patients were more affected. In a recent study from Soyeon Hwang et al it has also been reported that 80.2% of participants working directly with COVID-19 patients, experienced burnout, which is a much higher burnout rate than that measured in healthcare workers working without direct contact with COVID-19 patients (68.8%) (9). A review of 26 studies showed that healthcare workers who had contact with or provided care for patients with COVID-19, or worked in the front line in the ward for patients with patients COVID-19, more often reported burnout (18).

Limitation of the study

Our study has some limitations. At first, there is a lack of a comparable pre-pandemic health care workforce burnout for direct comparison. Secondly, being an anonymous survey, a possibility of lack of uniformity, variability of responses, and regional bias cannot be ruled out. Another limitation of our study was that we did not ask the respondents of past psychiatric issues, influencing the results of our study. Moreover, the HCWs were all working in different environments, which might have differences and the effect of this cannot be appreciated. However the main strength in our study is that we included qualitative parameters, that helps to explore the ideas prevalent among the study population and draw more general conclusions.

6. CONCLUSION

Our study highlights that every level of the health care workforce is susceptible to burnout. Future inter-pandemic strategies include codifying best practices in clinical care and human resource management in preparation for future pandemics.

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