

Burnout in Healthcare Professionals during Covid-19 Crisis

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ABSTRACT

Background: Since 2019, the COVID-19 disease has led to the death and disability of many people all over the world and the treatment staff has been providing services around the clock. Therefore, psychological burnout among them is highly possible. So far, no study has compared the incidence of mental burnout between doctors and nurses in the emergency department. This study has compared the psychological burnout between doctors and nurses during COVID-19 at the emergency department.

Methods: This cross-sectional study included 67 doctors and nurses working in the Emergency Department of Imam Reza Hospital of Tabriz University of Medical Sciences who had been working there during the COVID-19 outbreak. The instrument of study was the standard Copenhagen psychological burnout questionnaire. After obtaining the written consent, the questionnaire was distributed among the doctors and nurses of the emergency department. The data was graded by Excel software and data analysis was conducted by SPSS V. 22 software.

Results: According to the comparison of the high burnout rate in the Copenhagen burnout scale, 50% of doctors and 57.1% of nurses had personal burnout, 56.8% of doctors and 66.7% of nurses had work-related burnout, 69.4% of doctors and 69% of nurses had patient-related burnout, and the overall rate of high burnout in doctors was reported as 62.9% and nurses as 70.4%. There was no statistically significant difference in personal burnout between emergency department physicians and nurses. ($P=0.347$). As well, there was not a significant statistical difference in terms of work-related, patient-related, and overall burnouts between the two groups ($P=0.066$), ($P=0.696$), and ($P=0.108$). Yet, Regarding the distribution of genders between the two groups, there was a statistically significant difference ($P=0.001$).

Conclusion: The level of mental burnout of doctors and nurses employed in the Emergency Department of Imam Reza General Hospital during the COVID-19 crisis was at an average high. Thus, improving the conditions of medical environments in health centers can reduce the burnout of working doctors and nurses, especially during epidemic conditions, which will increase the quality of medical services.

The authors declare no conflicts of interest.

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Introduction

Since 2019, the Coronavirus disease (COVID-19) disease has led to the death and disability of many people all over the world and the treatment staff has been providing services around the clock [1-4]. The psychological condition known as burnout consists of fatigue, depersonalization (e.g., pessimism or negativity), and decreased professional effectiveness [1-2,5-8]. Generally, physician burnout is a socio-politically issue since it is linked to detrimental effects on patient care, the medical human resource, and the expenses of the healthcare system, in addition to the security and well-being of the medical personnel [8-11]. Furthermore, research has shown a connection between burnout and depression, elevated drug and alcohol consumption, family problems and suicide, physical fatigue thus emphasizing the importance of burnout syndrome [6, 8, 12]. Based on articles, 22 to 51% of the treatment staff show symptoms of mental burnout [5, 13-15]. The complications and symptoms of job burnout include absenteeism, desire to leave the profession, decreased self-confidence, and drug abuse [16]. The present study is aimed at comparing mental burnout between two groups of emergency doctors and nurses during the epidemic period of COVID-19 disease. Thus, it will be possible to propose suitable solutions for control and treatment in each group based on the results.

Methods

This cross-sectional study was conducted on 67 doctors and nurses of the Emergency Department of Tabriz University of Medical Sciences who were involved with COVID-19. This study considered the overall burden of COVID-19 on the treatment staff. The study was approved by the Ethics Committee of Tabriz University of Medical Sciences (ethics code: IR.TBZMED.REC.1401.288).

The inclusion criteria for the study were all doctors and nurses of the Emergency Department of Imam Reza General Hospital who were involved with COVID-19. Also, the exclusion criteria were doctors and nurses who refused to work in the hospital during the pandemic and also nurses or doctors who did not enter the study due to special conditions (pregnancy and record of mental illness). The Copenhagen burnout questionnaire was used in this study, which can be used to measure burnout and was first introduced by Kristensen et al [17], during the PUMA study that was conducted in Denmark to investigate job burnout among workers in 2005. In this questionnaire, scores of less than 50, 50 to 74, 75 to 99, and 100 indicate no or low, moderate, severe, and very severe burnout, respectively. Copenhagen psychological burnout questionnaire included three different parts and a total of 19 questions. The first part is concerned with

personal burnout which refers to a person's level of mental and physical exhaustion regardless of their job position. This part included 6 questions that the scores of 100, 75, 50, 25, and 0 corresponded with always, often, sometimes, rarely, and never, respectively. Responding to less than 3 out of 6 questions was considered non-response in this part.

The second part was associated with work-related burnout which is a degree of physical and mental coherence that is understood by the individual through one's work. This part included 7 questions that the responses to the first 3 questions were based on very high (100), high (75), to some extent (50), low (25), and very low (0). Also, the responses to the next 4 questions were based on always (100), often (75), sometimes (50), rarely (25), and no time or almost never (0). However, the last part of the second part of the scoring was considered the opposite. Responding to less than 4 questions was considered non-response in this part.

The third part was associated with client- or patient-related burnout, which is a degree of physical and physical fatigue that is understood in relationships with clients (patients). This section had 6 questions that the responses to the first 4 questions were based on very high (100), high (75), to some extent (50), low (25), and low (0) levels. Also, the responses to the next 2 questions were based on always (100), often (75), sometimes (50), rarely, (25), and no time or almost never (0) Responding to less than 3 questions was considered non-response in this part. This questionnaire has been translated into Farsi language and its Farsi version is available on the Website of Tabriz University of Medical Sciences through the thesis of Ms. Elham Javanshir. The validity and reliability of the Farsi version of this questionnaire have been confirmed in the article by Elham Javanshir et al. in 2019 [18]. After obtaining the written consent, the questionnaire was distributed among the doctors and nurses of the emergency department. The data was graded by Excel software and data analysis was conducted by SPSS V. 22 software. The results were reported in number (percent), standard deviation + mean, and median (IQR) (depending on the abnormal nature of variables). The Kolmogorov-Smirnov test was used for normal data distribution test and other inferential methods including Spearman's rank correlation coefficient, Chi-square, and the student's T-test was used to analyze the data. The level of statistical significance was set at P 0.05.

Results

This study was conducted on 30 nurses and 37 doctors of the Emergency Department of Tabriz University of Medical Sciences, who were involved with COVID-19. Regarding the distribution of genders, 62.2% of the studied subjects in the group of doctors and 23.3% of the studied subjects in the group of nurses were men. In terms of gender distribution, there was a statistically significant difference between the two study groups (P= 0.001),

which is because usually in most hospitals, women cover most of the occupational groups related to nursing. The average age of the studied subjects in both groups of patients and nurses was 32 years, and Regarding age, there was no statistically significant difference between the two groups ($P = 0.766$). The mean work experience of physicians and nurses in the emergency room was two and six years, respectively. The difference in work experience between the two groups was statistically significant ($P = 0.001$) (Table 1). The mean and standard deviation of scores of doctors and nurses in the burnout scale and subscales of personal, work-related, and patient-related burnouts are shown in (Table 2). The mean score of the personal burnout subscale in the group of doctors was 53.82, with the lowest score of 25 and the highest score of 95.83, and in the group of nurses, it was 58.48, with the lowest score of 12.5 and the highest score of 95.83. No statistically significant difference was observed in terms of personal burnout between the two groups ($P = 0.347$). The mean score of the work-related burnout subscale in the group of doctors was 52.72, with the lowest score of 7.14 and the highest score of 92.86, and in the group of nurses, it was 62.38, with the lowest score of 17.86 and the highest score of 96.43. No statistically significant difference was observed in terms of work-related burnout between the two groups ($P = 0.066$). The mean score of patient-related burnout in the group of doctors was 58.22, with the lowest score of 25 and the highest score of 87.5, and in the group of nurses, it was 60.2, with the lowest score of 0 and the highest

score of 100. No statistically significant difference was observed in terms of patient-related burnout between the two groups ($P = 0.696$). The mean overall score of the burnout scale in the group of doctors was 54.41, with the lowest score of 23.68 and the highest score of 85.53, and in the group of nurses, it was 61.79, with the lowest score of 18.42 and the highest score of 96.05. No statistically significant difference was observed in terms of overall burnout between the two groups ($P = 0.108$). The trend of the changes in burnout scores by groups of doctors and nurses is shown in (Figure 1). High personal burnout was observed in 18 doctors and 16 nurses. Also, work-related burnout was observed in 21 doctors and 20 nurses. Furthermore, high patient-related burnout related was observed in 25 doctors and 20 nurses, and high overall burnout was observed in 22 doctors and 19 nurses. None of the subscales of personal, work-related, overall burnout and patient-related were observed in terms of the incidence of high burnout among doctors and nurses ($P < 0.05$) (Table 3). In comparing the work-related burnout scores between men and women separately for doctors and nurses, no statistically significant difference was observed in any of the subscales (<0.05 , P) (Table 4). In examining the relationship between age and work-related burnout scales as well as work experience and work-related scales, there was no statistically significant relationship between age and work experience with none of the burnout subscales in both groups ($P < 0.05$) (Table 5).

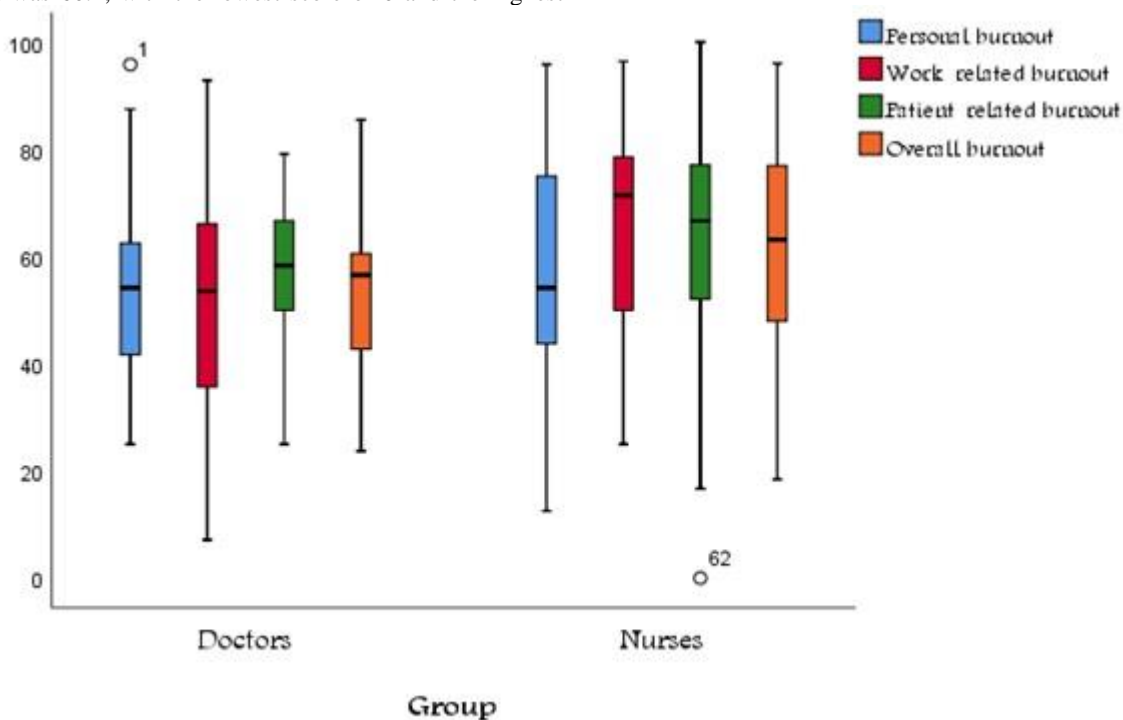


Figure 1- Comparison of the changes in scores of doctors and nurses in the Copenhagen burnout scales

Table 1- Demographic characteristics of participating doctors and nurses in the study

Variable		Group		P value
		Doctors Number (Percentage)	Nurses Number (Percentage)	
Gender	Male	23 (62.2)	7 (23.3)	0.001**
	Female	14 (37.8)	23 (76.7)	
Age		32 (37.5 – 29.5)	32 (35 – 29)	0.766*
Work Record		2 (5 – 1)	6 (9 – 3.75)	0.001*

* Mann–Whitney U test

** Chi-squared test

Table 2- Comparison of scores of doctors and nurses in the Copenhagen burnout scale

Variable	Group		P value *
	Doctors Standard deviation ± mean	Nurses Standard deviation ± mean	
Personal burnout	53.82 ± 17	58.48 ± 22.4	0.347
Work-related burnout	52.73 ± 19.7	62.38 ± 22.5	0.066
Patient-related burnout	58.22 ± 14.99	60.20 ± 23.6	0.696
Overall burnout score	54.41 ± 14.4	61.79 ± 19.7	0.108

* Student's T-test

Table 3- Comparison of high burnout rate between doctors and nurses in Copenhagen burnout scale

High burnout **	Group		P value *
	Doctors Number (Percentage)	Nurses Number (Percentage)	
Personal burnout	18 (50)	16 (57.1)	0.570
Work-related burnout	21 (56.8)	20 (66.7)	0.408
Patient-related burnout	25 (69.4)	20 (69)	0.967
Overall burnout score	22 (62.9)	19 (70.4)	0.535

* Chi-squared test

** Participants with a score of more than 50 in the subscales and the overall score of the burnout scale

Table 4- Comparison of the scores of the Copenhagen burnout scale between the two genders by doctors and nurses

Variable		Group		P value*
		Doctors Standard deviation ± mean	Nurses Standard deviation ± mean	
Doctors	Personal burnout	57.79 ± 16.4	46.79 ± 16.2	0.061
	Work-related burnout	53.77 ± 20.1	51.02 ± 19.5	0.686
	Patient-related burnout	56.52 ± 13	61.22 ± 18	0.373
	Overall burnout score	55.91 ± 14.4	51.53 ± 14.6	0.403
Nurses	Personal burnout	53.57 ± 15.7	60.12 ± 24.3	0.513
	Work-related burnout	66.84 ± 16.7	61.02 ± 24.17	0.559
	Patient-related burnout	61.31 ± 16.6	59.85 ± 25.8	0.890
	Overall burnout score	60.90 ± 13.7	62.10 ± 21.7	0.893

* Student's T-test

Table 5- Comparison of the scores of the Copenhagen burnout scale between the two genders by doctors and nurses

Variable		Age		Work Record
		r*	P	
Doctors	Personal burnout	r*	0.118	0.104
		P	0.495	
	Work-related burnout	r*	- 0.037	0.053
		P	0.830	
Patient-related burnout	r*	0.109	0.169	
	P	0.527		
Overall burnout score	r*	0.062	0.111	
	P	0.726		
Nurses	Personal burnout	r*	0.056	0.150

	P	0.776	0.447
Work-related burnout	r*	- 0.096	- 0.020
	P	0.616	0.918
Patient-related burnout	r*	- 0.127	- 0.054
	P	0.510	0.783
Overall burnout score	r*	0.0004	- 0.110
	P	0.998	0.586

*Spearman's correlation coefficient

Discussion

In terms of gender distribution, 62.2% of the studied subjects in the group of doctors and 23.3% of the studied subjects in the group of nurses were men which is because usually in most hospitals, women cover most of the occupational groups related to nursing. The average work experience of physicians and nurses working in the emergency department was 2 and 6 years, respectively. This difference is due to the consideration of residents in the group of emergency doctors and the fact that most of the experts in this field are young. Although the level of job burnout in both groups was on average high due to the COVID-19 crisis, between the two groups, there was no noticeable distinction related to the level of job burnout. Some studies have confirmed our clinical findings, including the study by Ghavidel et al. [19], which reported that burnout in nurses working in the COVID-19 wards was higher than in those working in non-COVID-19 wards. Also, Kurtzthaler et al [8] reported that doctors employed in the field of epidemics are at high risk of burnout. Wei Ping Daniel Chor et al [20] reported a moderate to severe degree of burnout in the medical staff. This research revealed that the medical staff, especially nurses, who are involved with COVID-19, had a relatively higher prevalence of burnout. Sofia Baptista et al, [21] reported increased burnout among doctors increased during the pandemic. There are also studies contrary to our clinical findings. Gonzalez Maria Teresa et al [22] revealed that nurses experience burnout at a higher rate than doctors. Although they did not have a statistically significant difference, one of the causes of the inconsistency of the findings is possibly due to the small sample size in this study, and the working conditions due to cultural differences compared to other studies. The strength of this study is the comparison between two medical professions directly involved with COVID-19. Also, the weaknesses of this study were the small sample size, lack of multicentre, and lack of study on doctors and nurses working in clinical and special departments of the hospital.

Conclusion

Job burnout is an important and significant issue among doctors and nurses working in the emergency ward, and avoiding paying attention to this issue will cause a

deterioration in their performance of them while the pandemic was in progress. Due to the high level of mental burnout in both groups, improving the conditions of the treatment environments in the health services centers can reduce the burnout of doctors and nurses working in all three dimensions, as a result of which the quality of health care services will go high, especially during the pandemic.

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