

# Evaluating Medical Staff's Burnout and its Related Factor during the COVID-19 Pandemic: A Cross-Sectional Study of Daran Shahid Rajaei Hospital

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## Abstract

**Aim:** This study aimed to determine the medical staff's burnout level and its related factors at Daran Shahid Rajaei Hospital. **Materials and Methods:** The total number of participants was 145 medical staff who participated in this cross-sectional study. Data were collected employing such various instruments as demographic information questionnaires, general health questionnaires, job satisfaction (JS), and Maslach burnout inventory. Then, the researcher analyzed the data with correlation, *t*-tests, and variance by using the SPSS software version 26. **Results:** The findings indicated that 79% of the medical staff suffer from high burnout level. The results showed that the correlation between burnout levels and JS was statistically significant ( $P < 0.001$ ). Moreover, the correlation of depersonalization levels with marital status, age, work experience, and type of employment was significant ( $P < 0.001$ ) as well. **Conclusion:** The results indicated that, during the pandemic of COVID-19, the medical staff's burnout was at a high level. Interestingly, on the emotional exhaustion scale, the medical staff burnout was more than other burnout levels requiring organizational interventions to lessen medical staff burnout.

**Keywords:** Burnout, COVID-19, general health questionnaires-28, job satisfaction, medical staff

## INTRODUCTION

Healthy manpower is a prerequisite for the development of any organization. One of the prime factors affecting the physical and mental health of organization staff and their efficiency is burnout.<sup>[1]</sup> In 1974, Freudenberger first defined burnout as a feeling of failure and exhaustion.<sup>[2]</sup> In other words, burnout is emotional, psychological, and social exhaustion affected by excessive stress. It includes three dimensions of emotional exhaustion (EE), depersonalization (DP), and a reduced sense of personal accomplishment.<sup>[3]</sup> In recent years, burnout has been considered a severe problem. Besides, the COVID-19 outbreak in 2019 has significantly increased medical staff's burnout.<sup>[4]</sup> According to the World Health Organization (WHO) in the 11<sup>th</sup> edition, burnout is classified as an occupational complication among international patients.<sup>[5]</sup> On the other hand, as WHO declared, more than 35,000 health workers around the world have been infected with the COVID-19, and some have died from caring for patients with COVID-19.<sup>[4]</sup> In addition, according to the latest WHO

report, 14% of COVID-19 cases in the world are registered among medical and health workers, and in some countries, this figure can be up to 35%.<sup>[6]</sup>

Burnout can reduce productivity, however, it increases health costs, absenteeism, and rest periods between work and reduces the quantity and quality of products.<sup>[7]</sup> Moreover, burnout among medical staff can manifest as job dissatisfaction, increased risk of medical errors, and suicidal ideation.<sup>[8]</sup> There are a variety of causes for burnout. Maslach attributes burnout to anxiety and fear of losing a job, overwork, unsafe work environment, hours, and rigid schedule. Meanwhile, due to

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various stressors exposure, staff working in the health sector experience a higher burnout rate than other occupations.<sup>[9]</sup>

However, studies have shown the relationship between some essential environmental and individual parameters with burnout. The results of a study on the hospital staff indicated that burnout was associated with job satisfaction (JS) and job productivity.<sup>[10]</sup> If people have JS, they will have better job performance, more participation, and job acceptance responsibilities, which in turn leads to job stability and retention.<sup>[11]</sup> A study conducted in China revealed a high prevalence of anxiety, depression, and insomnia in medical staff in the COVID-19 ward. It also indicated that the higher the probability and severity of exposure to the patients with COVID-19, the higher the risk of mental disorders.<sup>[12]</sup> Moreover, the study indicated that health-care workers who were at the forefront of diagnosing, treating, and caring for the patients directly with COVID-19 had more symptoms of depression, distress, anxiety, and insomnia.<sup>[13]</sup>

The results of Johani *et al.*'s study also indicated the direct effect of COVID-19 on burnout and the opposite effect of COVID-19 on job performance. Meaning that, as the impact of COVID-19 increases, burnout increases (39%), but job performance decreases (20%).<sup>[14]</sup> It is worth mentioning that the range of the medical staff's burnout prevalence at Middle Eastern Hospitals was 40%–60%, estimated in a recent meta-analysis study. Thus, such a substantial burden of burnout may increase during the COVID-19 outbreak.<sup>[15]</sup> A large-scale survey on burnout among nurses during the COVID-19 pandemic indicated that the female nurses working at ICUs, hospitals determinate of COVID-19, and wards involved in treating the COVID-19 patients had higher scores in burnout.<sup>[4]</sup> Besides, another study conducted during the COVID-19 epidemic indicated that gender, parental status, and marital status were significant factors for personal burnout.<sup>[16]</sup>

The global spread of COVID-19 disease in a society has endangered people's health, physically, socially, economically, and mentally. Moreover, the medical staff, especially those in direct contact with the patients and witness their problems, hardships, and deaths, are exposed to psychological and job pressure like health risks and anxiety.<sup>[17]</sup> Therefore, identifying and controlling the environmental, managerial, and personal factors associated with burnout during the COVID-19 pandemic can increase efficiency and improve the mental health of medical staff. The rationale behind this study was to investigate the medical staff's burnout level and its relation to JS, shift work, job position, type of employment, etc., at Daran Shahid Rajaei hospital.

## MATERIALS AND METHODS

This cross-sectional study was conducted at Shahid Rajaei hospital in Daran to evaluate the medical staff's burnout level in winter 2021. To determine the sample size, the researcher used the Cochran formula. Considering the population size ( $n = 200$ ), the researcher recruited 145 participants to

participate in this study. Certain inclusion and exclusion criteria were used to decide which participants were to be included in the study. Inclusion criteria were associate degree or higher level, work experience for at least one year in the hospital wards, and a general health questionnaire score (GHQ), <23. The exclusion criteria were the participants' reluctant to participate in the study.

To collect the data, first, and eliminate the confounding variables of the study, all employees were surveyed with a GHQ-28. Then, the participants whose score was <23 were selected to take part in the study. According to the GHQ, the participants with a score of 23 or lower were considered healthy while those with a score of 24 or higher were suspected of having health disorder.<sup>[18]</sup>

The tools used for collecting the data were questionnaires measuring demographic and work-related characteristics, including age, gender, marital status, work experience, employment status, education level, work shift, job position, and the Persian versions of Maslach burnout inventory (MBI) as well as Barfield and Ruth's JS questionnaire.

The MBI questionnaire consists of 22 items measuring the frequency and severity of all three burnout subscales, including EE, DP, and personal accomplishment (PA). The questionnaire items were categorized into three subscales, 9, 5, and 8 items, respectively. Then, the 22 Likert type items in the questionnaire ranging from 0 (strongly disagree or never) to 6 (strongly agree or always) were used to ensure sufficient variations among the item scores. In Iraqi *et al.*'s study, the reliability for each burnout subscale of the questionnaire, using Cronbach's alpha coefficient, was 0.9, 0.82, and 0.72, respectively; the estimated total score was 0.92.<sup>[19]</sup> In addition, In Moalemi *et al.*'s study, the reliability of the three burnout levels was higher than 0.7.<sup>[20]</sup>

Another questionnaire employed in this study was Barfield and Ruth's (1951) JS questionnaire developed to measure JS.<sup>[21]</sup> This questionnaire contained a total of 19 items using a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Higher scores represented higher JS. Thus, to gain the total score, the participants' responses to the questionnaire were scored and then added up. The score ranges were from 19 to 95; the higher scores, more than 57, indicated JS but the lower scores, <57, pointed to low JS. Barfield and Ruth estimated the reliability of the questionnaire which was 0.78. The reliability estimate of the Persian version of the questionnaire in Azampanah *et al.*'s study was measured using Cronbach's coefficient. It was calculated to be 0.95, pointing to an acceptable level of internal consistency.

In this study, the questionnaire, including personal information, burnout, and JS, was distributed to the participants working at different hospital wards. The participants of the study had to complete the questionnaire within 2 weeks. To remove and explain any ambiguities in the questionnaire and gather the completed questionnaires, the researcher frequently went to

the hospital in that time interval. The researcher also had left her telephone contact in the questionnaire for the participants in case of any questions.

### Statistical analysis

After collecting the data, the researcher evaluated the demographic characteristics using descriptive analysis. In addition, the researcher used Pearson correlation coefficient, *t*-test, and analysis of variance to identify the relationship between demographic characteristics, job burnout, and JS using SPSS software version 26 (Armonk, NY, USA: IBM Corp).

Ethical approval for this study (IR.MUI.RESEARCH.REC.1399.545) was provided by the Ethical Committee Isfahan University of Medical Sciences, Isfahan, on 9 November 2020.

## RESULTS

Totally 200 questionnaires, including demographic information, general health, burnout, and JS, were distributed among the medical staff working at different hospital wards, out of which 177 questionnaires were received. The incomplete questionnaires (*n* = 9) were excluded from the study. Therefore, the final number of the complete questionnaires were (*n* = 168). Considering a cut-off point, <23, for the general health of the medical staff, the researcher analyzed 145 questionnaires. The participants' age range was 23–59; their mean age was 34 ± 8.5 years. The participants also had years of work experience ranging from 1 to 35; the mean experience was 9.2 ± 8.4 years [Table 1].

Table 2 presents the participants' burnout levels mean score indicating that the severity of emotional fatigue, personalization, and personal success was utmost. The medical staff's job satisfaction mean score indicated that the participant's level of job satisfaction was high.

In Table 3, the relationship between burnout, JS dimensions, and individual variables was measured using correlation tests and *t*-tests. The results indicated that the dimension of DP correlated significantly with marital status, age, service history, and type of employment (*P* < 0.05). The results of the study also demonstrated that the older the medical staff in this study, the higher the DP level (*r* = 0.215, *P* < 0.05). Moreover, as the data analysis revealed, the married participants with more work experience had a higher DP level than other participants (*P* value <0.05). Comparison between the DP dimension score and different wards of the hospital showed that the medical staff working at COVID-19 wards or COVID19-designated wards had a higher level of DP than other wards (*P* < 0.05). However, the differences between male and female medical staff's burnout levels and JS were not statistically significant. The relationship between JS and burnout levels was measured using Pearson's bivariate correlations. The current study found that there was a significant positive correlation between the medical staff's

**Table 1: Baseline characteristics of participants**

Variable	Value, <i>n</i> (%)
Gender	
Male	43 (29.7)
Female	102 (70.3)
Marital status	
Single	56 (38.6)
Married	89 (61.4)
Education level	
Associate's degree	25 (17.2)
Bachelor's degree	112 (77.2)
Master's degree	4 (2.8)
Doctorate	4 (2.8)
Work shift	
Morning	24 (16.6)
Evening	6 (4.1)
Night	1 (0.7)
Flexible	114 (78.6)
Type of employment	
Official	50 (34.5)
Contractual	42 (29)
Projective	53 (36.5)
Job position	
Managerial	16 (11)
Nonmanagerial	129 (89)

*n*: Number

**Table 2: Participant's level of burnout and job satisfaction in each dimension (*n* = 145)**

Variable	Value, <i>n</i> (%)
Emotional exhaustion	41.43±9.4
Depersonalization	25.54±5
Personal accomplishment	29.63±8.6
Job satisfaction	63.9±9.6

**Table 3: Associations between the dimensions of burnout and job satisfaction with individual characteristics - Pearson *r* correlation, *t*-test, and one-way ANOVA**

Variables	EE	DP	PA	JS
Gender	0.498	0.468	0.469	0.861
Age	0.296	0.01*	0.099	0.241
Marital status	0.111	0.007*	0.429	0.716
Work experience	0.402	0.006*	0.131	0.348
Job position	0.511	0.218	0.684	0.955
Education level	0.359	0.664	0.308	0.422
Work shift	0.325	0.466	0.13	0.175
Type of employment	0.379	0.068	0.13	0.27
Hospital wards	0.213	0.009*	0.422	0.117
Job satisfaction	<0.001*	<0.001*	<0.001*	1

\*Significant association (*P*<0.05, two-tailed), EE: Emotional exhaustion, DP: Depersonalization, PA: Personal accomplishment, JS: Job satisfaction

JS and all burnout levels (*P* < 0.001). Another finding was that no significant differences were found between burnout dimensions and JS and other personal information.

## DISCUSSION

Burnout is an emotional and behavioral disorder caused by job pressure that can affect people's lifestyles. The aim of the study was to determine the medical staff's burnout and its related factors during the COVID-19 pandemic at Daran Shahid Rajaei hospital.

The results of the study indicated that 79% of the medical staff suffered from high burnout levels and the medical staff's burnout on all the subscales was the highest. However, the EE dimension was higher than other dimensions of burnout. Anyway, the findings of this study are consistent with that of Rezaei *et al.* who reported that burnout was 81%. Reasons for EE are role ambiguity, overwork, interpersonal conflicts, rewards, and lack of independence.<sup>[22]</sup> Moreover, a study Conducted by Duarte *et al.* during the COVID-19 pandemic showed that medical staffs had high burnout rates.<sup>[16]</sup> This can be due to the newness of the coronavirus (COVID-19) and its mortality, coronary stress, and high workload.

The current study indicated that burnout in terms of the DP dimension had a significant relationship with marital status and work experience. It shows that an increase in work experience can be a threat to the medical staff's DP.<sup>[19]</sup> Likewise, this current study demonstrated that older medical staff had higher burnout scores. The above-mentioned findings are consistent with previous studies in which the influence of age and more working experience leads to more burnout of the medical staff.<sup>[23,24]</sup>

In this study, the result indicated a higher level of burnout among the medical staff working in COVID-19 wards than in other wards. Thus, this result of the study is not consistent with the results of the previous studies relating to medical professionals who work at COVID-19 wards.<sup>[25]</sup> Several explanations could account for this trend. One possible explanation is that this study was performed at the peak of COVID-19, and the most psychological and physical stress was imposed on the staff working at COVID-19 wards. Besides, the comparison of burnout scores with work shifts did not show a significant difference. The result of Ruiz-Fernández *et al.*'s study,<sup>[26]</sup> revealing that shift work was not associated with the medical staff's burnout, supports the result of the current study. Further, another result of this study was that there was no significant relationship between the total score of JS and burnout dimensions in terms of the individual characteristics. To justify the results, it can be stated that some researchers believe that personality traits and dimensions can explain burnout and others believe that high expectations in the work environment cause job pressure that ultimately leads to burnout in the long run. In contrast, some researchers believe that external factors, such as low incomes, could lead to burnout.<sup>[27]</sup>

JS of the medical staff, who were in a good condition with an average of 70, was among the variables examined in this study. The research on the subscales of burnout (EE, DP, PA) indicated that there was a significant relationship

between the scores of the dimensions of burnout and the total score of JS. The findings of the present study are in line with the results of Dehghani *et al.*'s study.<sup>[28]</sup> However, studies conducted during the COVID-19 epidemic show that high levels of JS among medical staff can reduce burnout levels.<sup>[29,30]</sup> Such contradictory results in various studies on JS show that the JS of medical staff in hospitals is different and the research findings cannot be easily generalized to other centers. Therefore, it is essential to check employees' JS level in each center. Because various job situations in different medical centers differ and discrepancies in leadership styles, communication, promotion system, and other components can affect employees' views and satisfaction.

Any studies face a number of limitations that make the progress of the study difficult to some extent. This study is, also, not exception and suffers from some limitations. First, the heavy workload of the medical staff and their lack of sufficient time to fill out the questionnaires were some of limitations. Next, the prevalence of burnout was measured at a single point in time which could change the participants' assessment of their perceptions over time. Third, the participants' perceptions could be affected by variables that were not examined in this study.

A further study could lead to program developments to manage medical burnout. Future studies should focus on socioenvironmental factors that this study failed to take into account. In addition, it is suggested to draw an algorithm to solve medical staff's burnout problem respecting burnout reasons, including two groups of side effects, root causes, and strategies for handling burnout reasons.

## CONCLUSION

The results of this study showed that the medical staff's burnout during the COVID-19 outbreak was at a worst level. Moreover, the dimension of EE was higher than other burnout dimensions as well. This can be due to the staff's high workload during the COVID-19 pandemic. However, the JS of the medical staff was high. Further, there was a significant correlation between DP with marital status, age, work experience, and employment type. However, there was a weak relationship between other personal characteristics, dimensions of burnout, and the root cause of burnout.

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## Conflicts of interest

There are no conflicts of interest.



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