Original Article

Journal of Occupational Health and Epidemiology
Journal Homepage: https://johe.rums.ac.ir/
JOHE
Rafsanjan University of Medical Sciences

Association between Job Burnout and the General Health of Healthcare Professionals during the Pandemic of COVID-19, Kermanshah, Iran (2022)

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Citation: Askari Sh, Salimi N, Bakhshi E. Association between Job Burnout and the General Health of Healthcare Professionals during the Pandemic of COVID-19, Kermanshah, Iran (2022). J Occup Health Epidemiol. 2024;13(1):33-40.

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Article history
Received: May 2023
Accepted: Jan 2024

10. 61186/johe.13.1.33

Print ISSN: 2251-8096
Online ISSN: 2252-0902

Peer review under responsibility of Journal of Occupational Health and Epidemiology

Abstract

Background: The crisis of COVID-19 has greatly impacted the mental health of healthcare workers, and neglecting it can cause burnout syndrome among them. This study investigates job burnout and its association with the general health among healthcare professionals (HCPs) during the coronavirus pandemic.

Materials and Methods: In this descriptive study in 2022, 400 employees of Kermanshah hospitals were selected using the convenience sampling method and Cochran's formula. The online questionnaire had 3 parts. The first was demographic information, the second was Maslach Burnout Inventory (MBI), and the third was a 28-question general health questionnaire. The data was analyzed using descriptive statistical and analytical tests, including the chi-square test, linear regression, and correlation at a significance level of less than 0.05 using SPSS software, version 19.

Results: All the job burnout components had a strong correlation with general health items Emotional Exhaustion ($r=-0.509$, $p<0.01$), Reduced Personal Accomplishment ($r=-0.514$, $p<0.01$), and Depersonalization ($r=-0.614$, $p<0.01$)). Among all the components of job burnout, depersonalization could predict 38.6% of general health changes in employees working in the hospitals of Kermanshah City.

Conclusion: Healthcare professionals in Kermanshah hospitals have experienced a lot of job burnout during the pandemic of Covid-19, and this problem was related to their general health status.

Keywords: COVID-19, Burnout, Professional, General Health, Medical Staff

Introduction

The epidemic rate of the coronavirus disease (COVID-19) in the world has reached more than 616 million people, and its death rate has reached more than 6.5 million deaths worldwide. In Iran, until September 20, 2022, more than 7.5 million cases and more than 144,000 deaths have been announced due to the coronavirus [1].

The global situation (pandemic) of the Covid-19 disease has affected and crippled some essential aspects of all countries in the world, such as social, economic, political, and even military. Hence, investigating the impacts of this disease on the physical and mental health of the people at different levels in society is necessary [2-4].

Undeniably, health workers are more prone to burnout due to the nature of their work. Due to the rapid increase in the number of patients during the COVID-19 crisis, doctors, nurses, and medical staff face a large workload. Getting infected by the Coronavirus and the fear of transferring it to loved ones, not being able to take care of children, and being separated from family members

during the epidemic period can lead to mental health problems, ranging from anxiety and depression stress, which neglecting it can cause burnout syndrome among employees [5, 6].

Maslach et al. described burnout as mental, emotional, and physical stress that occurs in response to job stress [7]. This response has three key dimensions: extreme fatigue, pessimism and absenteeism, and feelings of failure and despair. Burnout can have negative and long-term consequences among HCPs, which will result in irreversible physical and mental problems, lack of motivation, being absent at the workplace, low morale, decreased performance, and arguments with colleagues. This issue can reduce the quality of healthcare services [5, 8, 9].

Job burnout develops regularly over time, and it's one of the most important factors that affects general health and may turn into a mental disorder [10]. A study has shown that people at risk of burnout perform less efficiently and will probably encounter serious health problems in the long term [11]. Zhang et al.'s study depicted that 56.03% of medical staff, including doctors and nurses, suffered from job burnout [12].

In this regard, Dai et al.'s research also showed that the prevalence of burnout in this group was 46.6% in general [13]. Previous epidemics of coronaviruses, such as MERS and SARS, were identified as "damages to public health" [14]. The results of a systematic review illustrated that the prevalence of stress in nine studies was 60.7%, depression in eight studies was 32.7%, anxiety in six studies was 34.1%. Sleep disorders in six studies were 26.7%. This survey also showed that healthcare workers had a higher prevalence of stress, anxiety, depression, and mental disorders compared to other citizens [15]. European studies including medical and paramedical crews, specified widely diverse Burnout syndrome rates ranging from 15–82% [16]. The results of a systematic review showed different levels of burnout among healthcare workers. Job burnout was reported among healthcare workers in Ethiopia (38.1%) and Sub-Saharan Africa (40-80%). In contrast, it was lower than a study finding from Egypt (68.2%) and Iran (52.9%). On the other hand, job burnout is higher than that of studies conducted among health professionals in Ecuador (2.6%), Andalusia, Spain (8.19%), Canada (34.1%), Ghana (9.9%), Aracaju, Brazil (6.7% to 10.8%). This could be explained by the difference in the socioeconomic status of the study areas and participants [17].

Hospital employees are on the front line of dealing with this virus. Hence, it is essential to pay more attention to the health status of these people who are the guardians of other citizens' well-being in society. HCPs should perform well in facing healthcare challenges.

On the other hand, they share some negative feelings with their patients, like frustration, emotional exhaustion, and so on. This can lead to poor performance, errors in medical diagnosis, and poor quality of treatment. To our knowledge, with limited research towards improving the burdened health system and different research results in this regard, this study can underpin the development of appropriate policy and its implementation in addressing job burnout and general health to improve healthcare professionals' health and well-being. This can be achieved by designing interventions to create better working environments, which will improve job satisfaction and reduce the negative impact of burnout on healthcare professionals' health, thereby enabling quality practice and patient care. For this purpose, the present study was designed and implemented to investigate job burnout and its association with the general health of employees of Kermanshah hospitals during the pandemic of Covid-19.

Materials and Methods

This research is a descriptive cross-sectional study using a convenience sampling method conducted in 2022 among 18 state-run and non-governmental hospitals in Kermanshah city with a population of about 4500 employees. Among these hospitals, 8 hospitals (6 state-run and 2 non-governmental) were randomly selected.

The sample size was estimated to be 351 people using Cochran's formula. To increase the accuracy of the research and consider the drop (due to the incompleteness of the questionnaires), 400 people were considered, of which 381 people filled the questionnaires accurately. Of these, 8% were doctors, 42% were nurses, 28% were laboratory science personnel, 8% were midwives, 5% were radiology personnel, and 9% were orderly personnel.

Strategies to increase the response rate were:

A maximum of three reminders.

Assures anonymity and confidentiality.

Expression of the importance of participants' answers to promote healthcare professionals' health.

The needed data for the research was collected through an online questionnaire designed using Google Docs, and a link to the questionnaire was sent to all groups in each hospital's Internal and external social networks. All participants participated voluntarily and gave informed consent completing the questionnaire. The inclusion criteria included working at least one shift in the last month, not suffering from a serious illness (chronic pain, cancer, epilepsy, etc.), not using psychiatric drugs (anti-anxiety, depression, and psychosis), and personal satisfaction. The exclusion criteria included staff on sick leave and staff with a mental illness background.

The data collection tool consisted of 3 parts. The first part included demographic questions (age, gender, number of children, marital status, working in the Corona/non-Corona sector, education level, work experience, and number of monthly shifts). The second

part includes the Maslach Burnout Inventory (MBI) including 22 statements that measure all three aspects of job burnout. 9 propositions are related to emotional exhaustion (EE), 8 propositions are related to reduced personal accomplishment (RPA), and 5 propositions are related to depersonalization (DP). These items' scores are measured from 0 (never) to 6 (every day). Maslach and Jackson reported the internal reliability of the questionnaire with a Cronbach's alpha coefficient of 0.71-0.90 and a test-retest reliability coefficient of 0.60-0.80 [18]. In Iran, the internal consistency of MBI was reported as 0.78 using the test-retest method [19]. In the present study, Cronbach's alpha coefficient of 0.894 was obtained for this questionnaire.

The third part was a 28-question general health questionnaire. The items of this questionnaire examine the person's psychological state in the last month and include symptoms, such as abnormal thoughts and feelings, and the aspects of observable behavior that exist now. The questionnaire starts with questions related to physical symptoms and continues with questions associated more with psychiatric symptoms.

This questionnaire consists of four scales of 7 questions so that questions 1-6 and question 19 are related to the scale of somatic symptoms (SS), questions 7-13 are related to the scale of anxiety and insomnia (AI), questions 20-24, 27 and 28 are related to social dysfunction (SD) and questions 14-18, 25 and 26 are related to severe depression symptoms (DS) scale. In this study, the four-point Likert scoring method (much worse than usual = 0, worse than usual = 1, normal = 2, and more than usual = 3) was used to score the questionnaire, and as a result, the total score from an individual varied from zero to 84. A higher score in this questionnaire indicates better general health. In 1988, by using thesplit–half method, Goldberg and Williams reported a reliability of 0.95 for this questionnaire, which was completed by 853 people [20].

In Nazifi et al.'s study, the validity of the questionnaire was checked and confirmed using factor analysis and the reliability of the questionnaire was declared using Cronbach's alpha coefficient of 0.923 [21]. In the present study, the reliability of the general health questionnaire was obtained with Cronbach's alpha coefficient of 0.944.

After collecting the information, the data was analyzed using descriptive statistical tests (frequency calculation, frequency percentage, mean and standard deviation) and analytical tests including the chi-square test, linear regression and correlation analysis in SPSS version 19 software. The significance level of the data was considered less than 0.05.

Results

In the present study, 74% of the participants were female, and 46% of them were married. The mean and standard deviation of job burnout components, including emotional exhaustion, personal accomplishment, and depersonalization, were (23.77± 6.95), (21.22 ± 5.64) and (11.38 ± 3.90) respectively. In addition, the mean and standard deviation of general health was 55.90±15.14. Among the demographic variables, age (p=0.029), working in the Covid-19 section (p=0.043), and the number of shifts per month (p=0.013) had a significant association with job burnout. None of the demographic variables had a significant association with general health. The results show that age had a significant association with personal accomplishment (p=0.006) and depersonalization (p=0.015). Working in the Corona sector significantly correlated with emotional exhaustion (p=0.019). Education level had a significant association with depersonalization (p=0.014), and work experience had a significant association with personal accomplishment (p=0.035) and depersonalization (p=0.040). None of the demographic variables had a significant association with general health (Table 1).

Based on the findings of Table 2, all job burnout components had a significant correlation with general health (Emotional Exhaustion ($r=-0.509$, $p<0.01$), Reduced Personal Accomplishment ($r=-0.514$, $p<0.01$) and, Depersonalization ($r=-0.614$, $p<0.01$)). (Table 3) shows the predictors of general health in the employees of Kermanshah hospitals. The results of linear regression analysis showed that depersonalization ($p> 0.0001$) among job burnout components could significantly predict general health. These components were able to predict 38.6% of general health changes of the employees in Kermanshah hospitals (depersonalization= -.324, Emotional Exhaustion=.064, Reduced Personal Accomplishment= -2.058). What makes the difference in the output of regression and correlation results is that in correlation, the effects of variables are always measured two by two. Still, in a regression model, the effects of variables are examined simultaneously.

Table 1. Association of demographic variables with general health and job burnout components in employees of Kermanshah hospitals

Demographic variables		Percent	Emotional exhaustion Mean ±SD	P-value	Reduced personal accomplishment Mean ±SD	P-value	Depersonalization Mean ±SD	P-value	General health Mean ±SD	P-value
Sex	Female	74	24.24±7.21	0.252	21.22±6.04	0.999	11.26±3.94	0.616	55.34±15.88	0.431
	Male	26	22.44±6.10		21.27±4.42		11.70±3.80		57.13±15.43	
Age	20-30	53.3	24.42±7.20	0.234	22.71±5.41	0.006	12.31±4.18	0.015	54.60 ±16.05	0.436
	30-40	19.4	25.10±7.74		21.35±6.02		11.45±3.59		54.15 ±19.06	
	40-50	17.5	21.11±5.33		17.83±4.96		9.11±3.03		60.22 ±8.93	
	Above 50	9.8	22.30±5.79		18.90±4.33		10.20±2.35		59.80 ±10.04	
Marital status	Married	46	23.74±7.41	0.919	20.38±5.90	0.172	11.02±4.13	0.349	58.16±18.59	0.562
	Single	54	23.89±6.70		21.94±5.41		11.76±3.68		56.14±16.21	
Number of children	1 child	17.5	22.89±7.34	0.432	20.11±6.14	0.118	10.89±4.04	0.258	57.83 ±15.05	0.422
	2 children	16.5	23.24±4.22		19.82±4.70		10.41±3.02		54.94±15.64	
	3children	1	30.00		29.00		16.00		28.00	
	4 or more	1	13.00		12.00		6.00		63.00	
	Without	64	24.21±7.39		21.91±5.57		11.77±4.01		56.09 ±15.21	
Working in	Corona sector	34	25.66±7.47	0.019	22.69±5.69	0.063	12.46±4.37	0.061	52.80 ±18.37	0.171
	Other sectors	66	22.79±6.52		20.47±5.50		10.82±3.53		57.64 ±13.22	
Education level	Diploma	3	31.00±16.97	0.310	24.50±9.19	0.240	13.50±10.60	0.014	54.50 ±17.67	0.320
	Associate degree	3.2	26.00±7.55		24.67±8.02		11.00±4.35		54.01 ±22.60	
	Bachelor	61.5	23.36±6.49		20.66±5.52		10.73±3.46		56.62 ±15.38	
	Masters	9	21.78±4.73		18.67±5.19		10.22±3.63		62.22 ±11.13	
	P.H.D	3	31.33±7.50		26.00±3.46		17.33±2.30		36.00 ±15.58	
	Medicine and above	20.3	23.90±7.85		22.67±5.53		12.95±3.96		54.95 ±14.77	
Work experience	Less than 5 years	40.7	25.55±7.35	0.176	22.93±5.21	0.035	12.69±4.24	0.040	54.62 ±14.89	0.349
	5 to 10 years	19.5	21.50±7.27		19.69±6.17		10.62±3.77		57.31 ±15.88	
	10 to 20 years	17.4	24.39±7.40		21.11±6.43		10.94±4.10		52.22 ±19.59	
	20 to 30 years	22.4	22.50±4.82		18.78±4.12		9.83±2.17		60.72 ±8.31	
Number of shifts per month	Less than 3	22.3	25.78±6.69	0.411	21.70±4.89	0.414	12.13±4.50	0.413	60.22 ±15.52	0.193
	3 to 6	49.5	24.16±7.30		21.29±5.88		11.35±3.72		53.78 ±13.86	
	6 to 12	12.6	21.85±5.88		19.92±6.22		9.92±3.17		60.23 ±13.61	
	More than 12	15.6	26.50±2.12		27.00±4.24		12.50±2.12		47.01 ±13.35	

Table 2. Correlation between job burnout components with general health and its components in employees of Kermanshah hospitals

	General health	EE	RPA	DP	SS	AI	SD	DS
General health	1	-0.509**	-0.514**	-0.614**	0.873**	0.881**	0.760**	-0.872**
EE	-0.509**	1	0.806**	0.724**	-0.452**	-0.489**	-0.426**	-0.371**
RPA	-0.514**	0.806**	1	0.796**	-0.414**	-0.450**	-0.468**	-0.426**
DP	-0.614**	0.724**	0.796**	1	-0.559**	-0.580**	-0.571**	-0.405**
SS	0.873**	-0.452**	-0.414**	-0.559**	1	0.782	0.511**	0.662**
AS	0.881**	-0.489**	-0.450**	-0.580**	0.782**	1	0.536**	0.632**
SD	0.760**	-0.426**	0.468**	-0.571**	0.511**	0.536**	1	0.623**
DS	0.872**	-0.371**	-0.426**	-0.405**	0.662**	0.632**	0.623**	1

P.value. *p<.05, **p<.01
EE=Emotional Exhaustion;RPA=Reduced Personal Accomplishment;DP=Depersonalization;SS= Somatic Symptoms; AI= Anxiety and Insomnia; SD= Social Dysfunction; DS= Depression Symptoms.

Based on the findings of Table 2, all job burnout components had a significant correlation with general health (Emotional Exhaustion (r=-0.509, p<0.01), Reduced Personal Accomplishment (r=-0.514, p<0.01)

and, Depersonalization (r=-0.614, p<0.01)). (Table 3) shows the predictors of general health in the employees of Kermanshah hospitals. The results of linear regression analysis showed that depersonalization (p> 0.0001) among job burnout components could significantly predict general health. These components were able to predict 38.6% of general health changes of the employees in Kermanshah hospitals (depersonalization= -.324, Emotional Exhaustion=.064, Reduced Personal Accomplishment= -2.058). What makes the difference in the output of regression and correlation results is that in correlation, the effects of variables are always measured two by two. Still, in a regression model, the effects of variables are examined simultaneously.

Table 3. Regression analysis to predict the general health of employees of Kermanshah hospitals based on job burnout components

Job burnout components	Mean	Standard deviation	Standardized coefficient (beta)	t	P.value	Determination coefficient (R2),
(Constant)				18.041	P< 0.001	0.386
EE	23.77	6.95	-0.148	-1.082	P=0.282	
RPA	21.22	5.64	0.024	0.152	P=0.880	
DP	11.38	3.90	-0.526	-3.930	P< 0.001	

EE=Emotional Exhaustion;RPA=Reduced Personal Accomplishment; DP=Depersonalization

Discussion

This research aimed to investigate job burnout and its association with the general health of healthcare professionals working in Kermanshah hospitals during the COVID-19 pandemic. The findings of the present study show that the average burnout score of these people was high, and More than 50 percent of them experienced moderate and severe burnout. Our findings illustrate that age, as one of the demographic subscales, is related to personal accomplishment and depersonalization. Thus, as people get older, personal accomplishment and depersonalization decrease.

In this regard, Kilfedder et al. showed significant negative correlations between depersonalization and age and depersonalization and length qualified. It would appear that higher levels of depersonalization are associated with younger, more recently qualified nurses [22].

Also, the results showed that the prevalence of emotional exhaustion was higher among the employees working in the Corona sector. In this regard, Alrawashdeh et al.'s study depicted that the prevalence of burnout among doctors was 57.7%, and female gender, working in crowded hospitals, long and night shifts, lack of access to personal protective equipment and a positive test for SARS-CoV- 2 were related to job burnout [23].

The results of a survey in Japan on the prevalence of burnout among healthcare workers during the COVID-19 epidemic showed that burnout was significantly higher among women and especially among nurses. Moreover, there was a remarkable association between job burnout in people with less work experience, severe anxiety due to unfamiliarity with personal protective equipment, and fewer sleeping hours compared to the period before the epidemic [24].

The present study's findings show that work experience had a significant association with personal accomplishment and depersonalization. So, personal accomplishment and depersonalization decreased with increasing work experience. Hacer et al. examined burnout in physicians and stated that work experiences had a significant association with personal accomplishment and depersonalization, which were in line with our results [25].

In the present study, there is a significant association between all subscales of job burnout (depersonalization, emotional exhaustion, reduced personal accomplishment) and general health (anxiety and insomnia, somatic symptoms, severe depression symptoms, social dysfunction). The results of several studies show the association between job burnout and general health [26-28]. In line with our study, Solhi et al., show that significant association between burnout and general health, meaning that people with lower rates of burnout experienced higher general health. Burnout was moderate among the health workers studied [29]. In addition, the study results conducted by Arrogante et al. stated that three burnout dimensions were negatively associated with mental health and resilience. Therefore, that can improve their mental health by increasing their personal accomplishment and decreasing their emotional exhaustion and depersonalization [30]. Hence, by improving people's general health, the rate of job burnout might decrease [3].

The study by Khamisa et al., done by using a multiple linear regression model on 1200 nurses working in the hospital, showed that emotional exhaustion and personal accomplishment are related to somatic symptoms, one of the subscales of general health. In addition, emotional exhaustion and depersonalization are correlated with anxiety and insomnia as well as social functioning, and emotional exhaustion is also related to severe depression symptoms singularly [31]. In the present study, Emotional Exhaustion strongly correlated with general health. Consistent with the results of our study, Yang et.al. showed that Self-reported health was negatively associated with a person’s mean ratings of

daily emotional exhaustion and moderated the strength of the workplace incivility effect on emotional exhaustion. Psychological capital was negatively related to a person's mean ratings of daily emotional exhaustion [32].

Our study reduced personal accomplishments correlated with general health. In this regard, Motallebi et al. showed that Reduced Personal Accomplishment has a significant correlation with physical health, anxiety, insomnia, social function, and depression. It seems that people with the characteristic of Reduced Personal Accomplishments, with the feeling that they feel incompetent in their job, that they are not capable of their work and duties, suffer more job stress. As a result, they will have less mental health [33].

In this study, we found that depersonalization was linked to general health. This supports the findings of a previous study by Gago-Valiente et al., which showed a significant correlation between depersonalization and general health in nurses from Huelva. Depersonalization can be a symptom of major depression, and studies have found that individuals with unipolar depression experience more severe depersonalization symptoms than healthy individuals. Additionally, there is a positive association between depression and depersonalization. These conditions may not be distinct categories but have a shared biological basis and could be part of a spectrum of affective disorders.

In the current study, only depersonalization, among all the subscales of job burnout, could predict general health changes significantly. It seems that similar studies in this field have not been conducted to determine the predictor of general health, and only Khamisa et al. stated that emotional exhaustion can be considered the main predictor of job burnout [27].

This study has some limitations as well as the other ones, such as being cross-sectional, which challenges the possibility of inferring the causal path between variables. In addition, health status determinations with objective methods (medical tests) could be more sufficient than self-reported questionnaires, but these methods are quite expensive. However, all questionnaires chosen in this study had strong validity and reliability that is in-depth documented in the scientific literature. Moreover, the findings should be cautiously interpreted because the participants were hospital staff from a specific province of Kermanshah and were not representative of all healthcare employees in this country.

Conclusion

The results of the present study showed that 43.07% of employees working in Kermanshah hospitals experienced burnout during the COVID-19 pandemic, which is related to their general health status. The association between general health and job burnout is a significant factor that can help protect the workforce and create a safe and positive work environment. It is highly recommended that employers regularly evaluate their staff's job burnout status and provide effective interventions to control the underlying factors causing burnout. This will help ensure optimal workforce protection and promote a healthy workplace culture.

Acknowledgement

The authors thank the employees working in Kermanshah hospitals for their participation and cooperation in this study.

Conflict of interest: None declared.

Funding: None declared.

Ethical Considerations

In this research, due to the ethical considerations of psychology, the samples were initially assured that their information would be confidential and would not be shared with anyone. Then the personal information of the clients was completed anonymously and confidentially.

Code of Ethics

This study was approved with the ethics code (IR.KUMS.REC.1400.637) of Kermanshah University of Medical Sciences.

Authors' Contributions

Conceptualization: Shadi Askari, Nooshin Salimi and Ehsan Bakhshi. Research and sampling method: Shadi Askari, Nooshin Salimi and Ehsan Bakhshi. Data analysis: Shadi Askari and Nooshin Salimi. Text writing and revision: Shadi Askari and Nooshin Salimi

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