



Cross-sectional Study



## Job satisfaction and its relationship with burnout among nurses working in COVID-19 wards: A descriptive correlational study

Shiva Heidari<sup>a</sup>, Naser Parizad<sup>b</sup>, Rasoul Goli<sup>c,\*</sup>, Mohsen Mam-Qaderi<sup>d</sup>, Amireh Hassanpour<sup>e</sup>

<sup>a</sup> Department of Nursing, Urmia Branch, Islamic Azad University, Urmia, Iran

<sup>b</sup> Patient Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

<sup>c</sup> Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran

<sup>d</sup> Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Islamic Azad University, Urmia Branch, Urmia, Iran

<sup>e</sup> Department of Nursing, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran

### ARTICLE INFO

#### Keywords:

Job satisfaction  
Burnout  
Nurse  
COVID-19  
Pandemic  
Iran

### ABSTRACT

**Objective:** Nurses' feeling of Job satisfaction and burnout profoundly impact the quality of nursing care. COVID-19, due to its unknown nature and high contagiousness, can cause high levels of stress and tension and, finally, burnout in nurses, affecting their job satisfaction. Therefore, we aimed to determine the level of job satisfaction and its relationship with burnout among nurses working in COVID-19 wards.

**Methods:** This is a descriptive correlational study in which a total of 251 nurses working in COVID-19 wards were enrolled using stratified random sampling. Data collection was conducted using the demographic questionnaire, the Minnesota Satisfaction Questionnaire (MSQ), and the Maslach Burnout Inventory (MBI). Data were analyzed using descriptive statistics and Pearson correlation coefficient.

**Result:** The results showed that the majority of nurses (75.7%) had a low level of job satisfaction, 40.6% of nurses had a high level of emotional exhaustion (EE), 41.8% had a moderate level of EE, and 50.2% of nurses had a high level of depersonalization (DP). Furthermore, over half of nurses (55.8%) experienced reduced personal accomplishment (PA), and 27.5% had a moderate level of reduced PA. There was a statistically significant negative correlation between job satisfaction and EE ( $r=-0.394$ ,  $p<.001$ ). Moreover, job satisfaction negatively correlated with reduced PA ( $r=-0.590$ ,  $p<.001$ ). However, no statistically significant correlation was found between job satisfaction and DP ( $r=-0.122$ ,  $p=.053$ ).

**Conclusion:** As most nurses reported low job satisfaction and high rates of burnout, nurse managers should consider appropriate measures to correct these factors. Such measures could also improve patient satisfaction and, ultimately, the efficiency of the health system.

### 1. Introduction

Health professions especially nurses spend almost half of their waking hours in the workplace. Therefore, job satisfaction and work environment are of great importance [1]. As one of the most challenging organizational concepts, job satisfaction forms the fundamentals of most management policies to increase the productivity and efficiency of the organization [2].

Job satisfaction refers to one's general emotional response towards his/her job resulting from their own appraisal or job experience and includes various dimensions and factors. Job satisfaction is also defined as one's tendency or positive feelings toward one's job [3]. Job satisfaction is unambiguously a positive emotional condition or sensation

resulted from a job or profession. Therefore, it affects individuals' attitudes towards their jobs [4]. Job satisfaction has always been a very important issue for organizational leaders, especially nurse managers, as job dissatisfaction usually leads to absenteeism, reduced efficiency, staff turnover, physical and mental illness, and burnout [5]. The more content individuals feel, the more satisfied they are with their job. As a result, individuals exchange more positive energy with the surrounding environment and improve their communication with the people around them. All of these lead to greater satisfaction with the work environment and colleagues, and job satisfaction increases accordingly [6].

Job satisfaction, which is assessed based on the individual's psychosocial characteristics and the degree of adaptation to working conditions, is a criterion for determining job performance [7]. Since nurses

\* Corresponding author.

E-mail addresses: [Rasoulgoli94@gmail.com](mailto:Rasoulgoli94@gmail.com), [Goli.r@umsu.ac.ir](mailto:Goli.r@umsu.ac.ir) (R. Goli).

<https://doi.org/10.1016/j.amsu.2022.104591>

Received 9 July 2022; Received in revised form 1 September 2022; Accepted 4 September 2022

Available online 14 September 2022

2049-0801/© 2022 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

play the main and most important role in providing healthcare services, factors affecting nurses' job satisfaction directly impact the quality of care. Therefore, nurses' job satisfaction has always been a vital issue to consider, as nurses who are satisfied with their job are usually committed to it and shoulder its responsibility [8]. However, job dissatisfaction or a low level of job satisfaction can lead to burnout, which will reduce the efficiency of manpower [9]. Of course, the severity of job dissatisfaction depends on individual characteristics such as age, work experience, marital status, and the ability to predict problems [10].

Burnout is a work-related state that happens in those who have worked productively and without difficulties for a long time to satisfy themselves and others. It involves a slow loss of interest in other people and the development of indifference and apathy towards them, and it may culminate in negative feelings about oneself as a nurse or caregiver. Burnout has many characteristics, including fatigue, exhaustion, disruption of emotional and cognitive processes, depression, anxiety, insomnia, irritability, and mental distance [11,12]. Burnout includes three dimensions: Emotional Exhaustion (EE), Depersonalization (DP), and reduced Personal Accomplishment (PA), all of which led to a negative self-image, negative thoughts towards the profession, and a feeling of poor communication with the client when providing care [13]. Nursing is considered a stressful job because the nurse is responsible for managing and monitoring patients and he/she is naturally and constantly exposed to various stressors. There is no doubt that these factors can lead to burnout and an overall adverse impression on his/her career in the long run [14].

Due to its high contagiousness, Coronavirus Disease (COVID-19) can create tense and stressful working conditions for nurses [15]. The novel coronavirus outbreak was first identified in Wuhan, China, and it has now spread worldwide [16]. The current COVID-19 pandemic has increased anxiety and fear among the staff at the forefront of healthcare, especially nurses [17,18]. Studies in this area have shown that this disease affects nurses' mental state, and therefore affects the quality of nursing care [19,20]. In Iran, Taghilou et al. (2020) showed that the current COVID-19 pandemic has a great impact on burnout and job performance of nurses. With the greater impact of COVID-19, the burnout increased by 39%, and job performance decreased by 20% [21]. Also, Alrawashdeh et al. (2021) showed that the prevalence of burnout among healthcare professionals was (57.7%) [22]. In Italy, Chirico et al. (2021) showed that a significant proportion of the volunteers of the Red Cross had burnout subscale scores in the highest tertile: EE 8.0%, DP 35.9%, and reduced PA 23.5%, respectively [11]. Moreover, the results of previous studies on the pre-pandemic levels showed that the majority of nurses had a high or moderate level of job satisfaction and had a moderate level of burnout in all its dimensions [7–10].

COVID-19 is a relatively unknown and highly contagious disease, and high rates of COVID-19 hospitalization and mortality can be very stressful for nurses [23]. It can also increase the financial burden on the healthcare system and add to the workload of front-line nurses working in COVID-19 wards. This, in turn, can affect nurses' job satisfaction and cause burnout among them. It is very important to know more about the above issues and take appropriate measures to tackle them. In the literature review, no study was found to be conducted in this area in Iran. The present study aimed to investigate the prevalence of job satisfaction and job burnout among nurses working in COVID-19 wards in Iran during the COVID-19 pandemic and analyze their relationship.

## 2. Methods

### 2.1. Study design and setting

This descriptive correlational study was conducted in Ayatollah Taleghani, Motahari, Imam Khomeini, and Imam Reza Hospitals located in Urmia, a city in the northwest of Iran, in 2020. Our work has been reported in line with the STROCCS criteria [24]. This research was

registered on [www.researchregistry.com](http://www.researchregistry.com) (registration number: researchregistry8240).

### 2.2. Participants and sample size

The study population consisted of all nurses working in COVID-19 wards of the Ayatollah Taleghani, Motahari, Imam Khomeini, and Imam Reza Hospitals in Urmia. In the present study, considering the confidence interval of 95% and the power of 80%, and based on the correlation coefficient of  $r = .176$  between job satisfaction and burnout in the study by Tarkan et al. (2017) [25] and the formula of " $N = [(Z\alpha + Z\beta)/C]^2 + 3$ ", the final sample size was calculated to be 251.

### 2.3. Inclusion and exclusion criteria

Inclusion criteria consisted of the following: (a) granting consent to participate in the study, (b) having a bachelor's degree or higher, and (c) having at least three months of work experience in the COVID-19 ward. Exclusion criteria consisted of (a) incomplete questionnaire and (b) unwillingness to continue participation in the study.

### 2.4. Measurements

Data were collected using the demographic questionnaire, the Minnesota Satisfaction Questionnaire (MSQ), and the Maslach Burnout Inventory (MBI).

#### 2.4.1. Demographic questionnaire

The demographic questionnaire included age, gender, level of education, marital status, and residency status.

#### 2.4.2. Minnesota Satisfaction Questionnaire (MSQ)

The MSQ was developed by Weiss et al. at the University of Minnesota [26]. This questionnaire is a 20-item self-report questionnaire that examines job satisfaction in two subscales of intrinsic and extrinsic satisfaction. Each subscale consists of 10 items. This tool is scored on a 5-point Likert scale from "Very dissatisfied with this aspect of my job = 1" to "Very satisfied with this aspect of my job = 5". The overall score obtained from the two subscales of intrinsic and extrinsic satisfaction indicates general satisfaction. The overall score of this questionnaire ranges from 20 to 100 so that the score ranges of 20–47, 48–76, and 77–100 indicate a low, moderate, and high level of job satisfaction, respectively [27]. Martins and Proença (2012) used confirmatory factor analysis to evaluate the construct validity of the questionnaire. Through this statistical procedure, they confirmed the validity of the questionnaire ( $p < .001$ ). Furthermore, they assessed the reliability of this questionnaire using Cronbach's alpha coefficient. The Cronbach's alpha for the overall, intrinsic, and extrinsic satisfaction was obtained 0.91, 0.86 and, 0.88, respectively [28].

#### 2.4.3. Maslach Burnout Inventory (MBI)

The MBI is a standard questionnaire used to assess occupational burnout. The original form of the MBI was developed by Maslach & Susan (1981). This instrument consists of 22 items in 3 subscales of EE (9 items), reduced PA (8 items) and, DP (5 items). Each instrument item is answered on a 7-point Likert scale from "Never = 0" to "Every day = 6". Each subscale score is considered separately and is not combined with an overall score, as the score ranges for EE, reduced PA, and DP subscales are 0–54, 0–48, and 0–30, respectively. In the EE subscale, the scores of higher than 27, 19 to 26, and less than 18 indicate high, moderate, and low EE, respectively. In the subscale of reduced PA, the scores of lower than 33, 34 to 39, and higher than 40 show high, moderate, and low PA. In the DP subscale, the score of higher than 10, 6 to 9, and lower than 5 indicate high, moderate, and low DP [27]. Garooi and Moslemi (2005) used an expert panel to measure the content validity of the instrument. To do so, they invited comments from nursing

management experts. To assess the construct validity of the instrument, they utilized confirmatory factor analysis ( $p < .005$ ) [29]. Iwanicki et al. (1981) reported Cronbach's alpha of the questionnaire between 0.76 and 0.91 [30]. In the study by Garooci and Moslemi (2005), Cronbach's alpha of three dimensions was 0.63–0.85. Moreover, a test-retest reliability coefficient for the dimensions of EE, DP, and reduced PA was reported 0.78, 0.64, and 0.88, respectively [29].

### 2.5. Ethical considerations

The Ethics Committee of Urmia Islamic Azad University approved this study (Ethics No. IR.IAU.URMIA.REC.1399.021). The researcher introduced himself to the participants and explained the study methodology and objectives. Then, the participants signed written informed consents. They were also assured of the confidentiality of personal information and anonymity of the questionnaires.

### 2.6. Data collection procedure

After obtaining approval from the Ethics Committee of Urmia Islamic Azad University, the researcher referred to Ayatollah Taleghani, Motahari, Imam Khomeini, and Imam Reza Hospitals in Urmia, and obtained permission from the hospitals' officials to collect data. Eligible nurses were then recruited based on the inclusion criteria. Nurses were selected using proportionate stratified random sampling so that the final sample size (251 nurses) was proportioned and assigned to the hospitals based on the population size of nurses working in COVID-19 wards of each hospital. Then the number of samples allocated to each ward of each hospital was determined using a random number table. Along with adhering to safety tips, including washing and disinfecting hands before and after leaving the ward, putting on an N95 mask, and medical gloves, gown, cap, and shoe covers, written informed consent was obtained from all participants. Next, the questionnaires were given to the participants and collected after filling them in. Sampling was conducted from 9 August to 11 October 2020 until the target sample size ( $n = 251$ ) was reached (Fig. 1).

### 2.7. Data analysis

Data were analyzed using descriptive (frequency, percentage, mean

and standard deviation) and inferential (Pearson correlation coefficient and stepwise linear regression) statistics. All data were entered into SPSS Statistics for Windows, version 25.0 (IBM Corp., Armonk, N.Y., USA). The significance level was set at  $p < .05$ .

## 3. Results

### 3.1. Demographic information

The results showed that a majority of the participants (62.2%) were female, and (56.6%) were married. The mean age of the participants was  $29.76 \pm 6.09$ . Moreover, most participants (95.6%) had a bachelor's degree, and only 4.4% had a master's degree. The majority of the participants (55.4%) had less than five years of work experience, and 78.1% lived in the city (Table 1).

**Table 1**  
Demographic characteristics of the participants in the study.

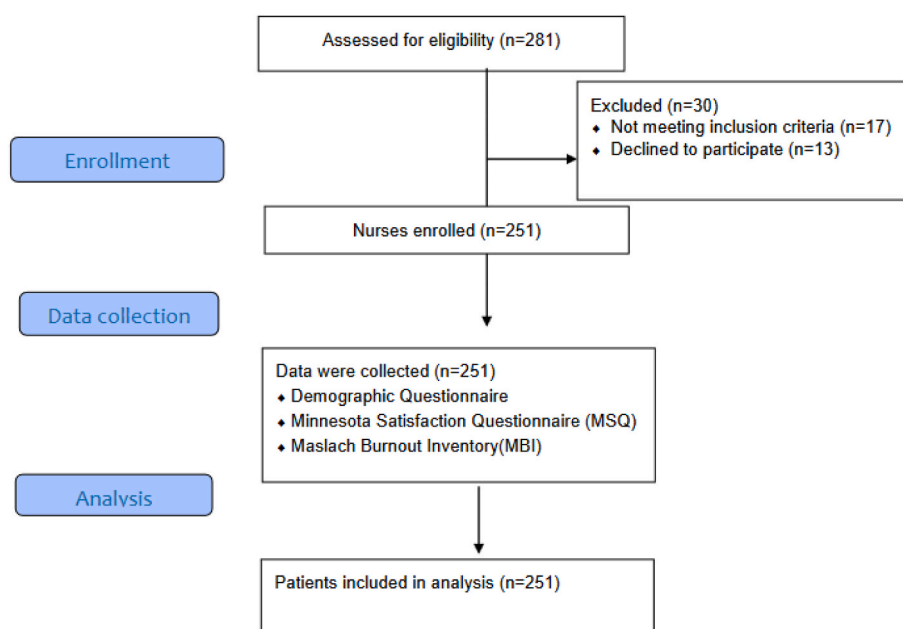
Variable		Frequency (n)	Percent (%)
Gender	Female	156	62.2
	Male	95	37.8
Education level	BSN <sup>a</sup>	240	95.6
	MSN <sup>b</sup>	11	4.4
Marital status	Single	109	43.4
	Married	142	56.6
Domicile	Urban	196	78.1
	Rural	55	21.9
Job experience	5 <sup>c</sup> >	139	55.4
	5–10	47	18.7
	11–15	40	15.9
	16–20	16	6.4
Age	20<	9	3.6
	Mean	SD <sup>d</sup>	
	29.76	6.09	

<sup>a</sup> Bachelor of Science.

<sup>b</sup> Master of Science.

<sup>c</sup> Year.

<sup>d</sup> Standard Deviation.



**Fig. 1.** Flow diagram for study participants.

### 3.2. Job satisfaction

The results showed that 75.7% of nurses had a low level of job satisfaction, 12.7% had a moderate level of job satisfaction, and only 11.6% had a high level of job satisfaction (Table 2) (Fig. 2).

### 3.3. Burnout

In terms of DP, the findings indicated that 50.2% of nurses had a high level of DP, and merely 11.2% had a low level of DP. The results also revealed that 40.6% of nurses had a high level of EE, 41.8% had a moderate level of EE, and only 17.5% had a low level of EE. Furthermore, the majority (55.8%) of nurses experienced reduced PA, 27.5% had a moderate level of reduced PA, and only 16.7% had a low level of reduced PA (Table 3).

### 3.4. Correlation between job satisfaction and burnout

The Pearson correlation coefficient result showed no statistically significant correlation between job satisfaction and DP among nurses ( $r=-0.122, p=.053$ ). Based on the Pearson correlation coefficient, it was found that the burnout dimensions of EE ( $r=-0.394, p<.001$ ) and PA ( $r=-0.590, p<.001$ ) were inversely related to job satisfaction in nurses working in COVID-19 wards (Table 4).

## 4. Discussion

This study investigated job satisfaction and its relationship with burnout among nurses working in COVID-19 wards. Our study results revealed that nurses' job satisfaction was low, and they had high levels of burnout except for the EE dimension. Moreover, a statistically significant negative correlation was found between job satisfaction and the two dimensions of EE and reduced PA. However, there was no statistically significant correlation between job satisfaction and depersonalization. Given the emergence of the novel coronavirus and the limited number of studies in this area, our study's result can be of considerable importance and very helpful in nursing management.

Labrague et al. (2020) indicated that nurses' job satisfaction was low during the COVID-19 pandemic [31]. Jafar Jalal et al. (2015) also showed that nurses' job satisfaction was low [32]. The results of the above studies are consistent with our study results. Since the nurses are directly involved in caring for COVID-19 patients, they are at high risk of contracting COVID-19. In addition, the increasing number of COVID-19 patients admitted to hospitals during the current pandemic can reduce nurses' job satisfaction [33]. Nursing managers should take special measures such as increasing the nurse-to-patient ratio and reducing nurses' workload to raise job satisfaction among nurses working in COVID-19 wards to an acceptable level.

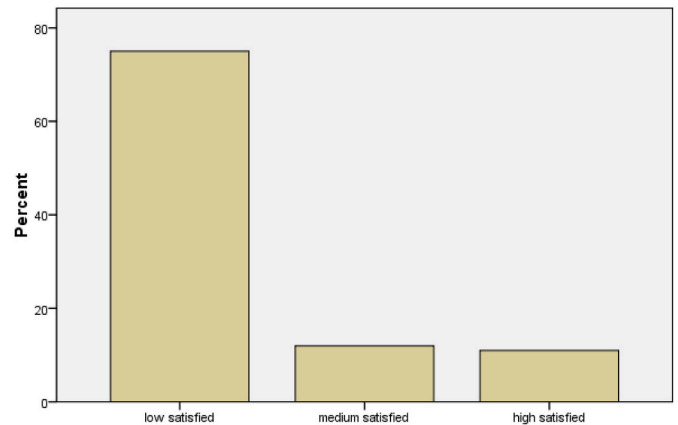
Yu et al. (2020) concluded that the job satisfaction of the nursing staff was high at the forefront of fighting against COVID-19 [34]. It should be noted that differences in nursing management systems can affect nurses' job satisfaction. Moreover, differences in working conditions in different medical centers (leadership styles, communication, specialization, and other components) can affect nurses' views and job satisfaction.

In line with our results, Luceño-Moreno et al. (2020) showed that nursing staff had severe burnout during the COVID-19 pandemic, and they also obtained high mean scores in both DP and EE dimensions [35].

**Table 2**  
Participants' level of job satisfaction in the study.

Level of job satisfaction	Frequency	Percent
Low	190	75.7
Medium	32	12.7
High	29	11.6

**Job.satisfaction**



**Fig. 2.** Chart of job satisfaction level among the participants in the study.

**Table 3**  
Participants' Level of burnout dimensions in the study.

Burnout	Low		Medium		High	
	n	%	N	%	n	%
Emotional exhaustion	44	17.5	105	41.8	102	40.6
Depersonalization	28	11.2	97	38.6	126	50.2
Personal accomplishment	42	16.7	69	27.5	140	55.8

**Table 4**  
Correlation between job satisfaction and three dimensions of burnout in the study.

variable	Correlation with job satisfaction	Sig. (2-tailed)
Emotional exhaustion	0/394 - r =	$P^a < 0.001$
Depersonalization	0/122 - r =	$P^a = 0.053$
Personal accomplishment	0/590 - r =	$P^a < 0.001$

<sup>a</sup> Pearson correlation.

Zhang et al. (2014) also concluded that most nurses had moderate levels of EE and DP, and they had a high level of reduced PA [36]. In terms of EE, the results of their study were not consistent with ours. This inconsistency may be due to the COVID-19 pandemic and the difference in working conditions in the two studies, as nurses are currently at the center of attention and are also emotionally supported.

Portero de la Cruz and Vaquero (2015) indicated that most nurses had a moderate level of EE and a low level of reduced PA. Moreover, in line with our study results, they reported depersonalization at a high level [37]. In terms of EE, experts believe that moderate to high levels of EE can be due to role conflict and ambiguity, over-tasking, interpersonal and intrapersonal conflicts, lack of autonomy, and an inadequate reward system. With the continuation of EE, nurses' emotional intelligence decreases, so that they will feel disappointment, accompanied by excessive indifference to the client and their profession. In this regard, the DP can be considered as a way to adapt to EE. Other consequences of EE and DP are decreased confidence, decreased job satisfaction, non-acceptance of organizational responsibilities, and increased turnover [14].

Cetinkaya et al. (2017) concluded that job satisfaction and all three dimensions of burnout were moderate in the majority of nurses. There was, however, no statistically significant relationship between job satisfaction and burnout in nurses [38], which was inconsistent with our study results. This discrepancy could be due to the COVID-19 pandemic, as it made poor working conditions at this time point. In line with our study results, Myhren et al. (2013) showed a statistically significant and



negative correlation between nurses' job satisfaction and the dimension of EE and reduced PA [39].

Our study has several limitations. First, this study was conducted only in a small setting; the generalizability of the study could be of some concern. Therefore, further studies are needed to be conducted in different settings to increase generalizability. Furthermore, considering that this study was conducted at the peak of the COVID-19 pandemic in Iran, continuous exposure to negative stimuli and information in the mass media about the condition of health care workers and people who contracted and died from COVID-19 may affect participants' feelings and ultimately the results of the study. Another limitation of the study was the higher number of female participants compared to male participants. This inequality could affect the results, as the feelings experienced by females are different from those experienced by males. This difference is rooted in different characteristics of females compared to males [35]. Therefore, more researches with larger sample sizes and gender equality are needed to obtain more accurate results.

## 5. Conclusion

Most nurses working in COVID-19 wards had low job satisfaction and high burnout in two dimensions: DP and reduced PA. This finding indicates the high impact of the COVID-19 pandemic on nurses. Burnout reduction and job satisfaction improvement among nurses improve patient satisfaction and eventually increase the health system's efficiency. Accordingly, nursing managers should consider appropriate measures and policies regarding wages, benefits, regulations, and bureaucracy to reduce burnout and improve nurses' job satisfaction.

## Ethical approval

The Ethics Committee of Urmia Islamic Azad University approved this study (Ethics No. IR.IAU.URMIA.REC.1399.021).

## Sources of funding

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Author contribution

ShH, NP, RG,MM: Conceptualization, Methodology, Software. NP, RG,MM: Data curation, Writing- Original draft preparation. ShH, AM, NP, RG,MM: Visualization, Investigation NP: Supervision: ShH, AH, NP, RG,MM: Software, Validation: ShH, NP,AH, RG: Writing- Reviewing and Editing, all authors read and approved the final manuscript before submission.

## Consent

Written informed consent was obtained from the patient for publication of this study and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

## Registration of research studies

Name of the registry: Not applicable.  
Unique identifying number or registration ID: Not applicable.  
Hyperlink to your specific registration (must be publicly accessible and will be checked): Not applicable.

## Guarantor

Rasoul Goli.

## Provenance and peer review

Not commissioned, externally peer-reviewed.

## Declaration of competing interest

None.

## Acknowledgment

We are so grateful to the Vice-Chancellor for Research of Urmia Islamic Azad University and all the nurses who helped us conduct this study. We thank the staff and managers of Ayatollah Taleghani, Motahari, Imam Khomeini, and Imam Reza Hospitals. We also would like to express our sincere gratitude and appreciation to Mariam Angelica Parizad for reviewing the manuscript and writing assistance.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.104591>.

## References

- [1] G.M. Calaguas, Satisfied and happy: establishing link between job satisfaction and subjective well-being, *Asia Pacific J. Multidisciplin. Res.* 5 (1) (2017 Feb) 104–111.
- [2] J. Čulibrk, M. Delić, S. Mitrović, D. Čulibrk, Job satisfaction, organizational commitment and job involvement: the mediating role of job involvement, *Front. Psychol.* 9 (2018 Feb 16) 132, <https://doi.org/10.3389/fpsyg.2018.00132>.
- [3] A. Khammar, R.N. Amjad, M. Rohani, A. Yari, M. Noroozi, A. Poursadeghian, et al., Survey of shift work disorders and occupational stress among nurses: a cross-sectional study, *Ann. Trop. Med. Publ. Health* 10 (4) (2017 Jul 1) 978.
- [4] S. Nurjanah, V. Pebianti, A.W. Handaru, The influence of transformational leadership, job satisfaction, and organizational commitments on Organizational Citizenship Behavior (OCB) in the inspectorate general of the Ministry of Education and Culture, *Cogent Bus. Manag.* 7 (1) (2020 Jan 1), 1793521, <https://doi.org/10.1080/23311975.2020.1793521>.
- [5] A. Nantsupawat, W. Kunaviktikul, R. Nantsupawat, O.A. Wichaikhum, H. Thienthong, L. Poghosyan, Effects of nurse work environment on job dissatisfaction, burnout, intention to leave, *Int. Nurs. Rev.* 64 (1) (2017 Mar) 91–98, <https://doi.org/10.1111/inr.12342>.
- [6] Y. Xinzhong, Joy, Wisdom, Virtue, The confucian paradigm of good life, *J. Chin. Philos.* 45 (3–4) (2018) 222–232, <https://doi.org/10.1111/1540-6253.12358>.
- [7] H. Lu, Y. Zhao, A. While, Job satisfaction among hospital nurses: a literature review, *Int. J. Nurs. Stud.* 94 (2019 Jun 1) 21–31, <https://doi.org/10.1016/j.ijnurstu.2019.01.011>.
- [8] A. Semachew, T. Belachew, T. Tesfaye, Y.M. Adinew, Predictors of job satisfaction among nurses working in Ethiopian public hospitals, 2014: institution-based cross-sectional study, *Hum. Resour. Health* 15 (1) (2017) 31, <https://doi.org/10.1186/s12960-017-0204-5>.
- [9] E.M. White, L.H. Aiken, D.M. Sloane, M.D. McHugh, Nursing home work environment, care quality, registered nurse burnout and job dissatisfaction, *Geriatr. Nurs.* 41 (2) (2020 Mar 1) 158–164, <https://doi.org/10.1016/j.gerinurse.2019.08.007>.
- [10] D.M. Abelha, P.C. Carneiro, F.D. Cavazotte, Transformational leadership and job satisfaction: assessing the influence of organizational contextual factors and individual characteristics, *Revista Brasileira de Gestão de Negócios.* 20 (4) (2018 Dec) 516–532, <https://doi.org/10.7819/rbgn.v0i0.3949>.
- [11] F. Chirico, P. Crescenzo, A. Sacco, M. Riccò, S. Ripa, G. Nucera, N. Magnavita, Prevalence of burnout syndrome among Italian volunteers of the Red Cross: a cross-sectional study, *Ind. Health* (2021 Jan 20), <https://doi.org/10.2486/indhealth.2020-0246> (Epub ahead of print).
- [12] W.B. Schaufeli, H. De Witte, S. Desart, *Handleiding Burnout Assessment Tool (BAT), 2019 Apr 2. KU Leuven, België: Intern rapport.*
- [13] I.G. Canu, S.C. Marca, F. Dell'Oro, Balázs Á, E. Bergamaschi, C. Besse, et al., Harmonized definition of occupational burnout: a systematic review, semantic analysis, and Delphi consensus in 29 countries, *Scand. J. Work. Environ. Health* 47 (2) (2021 Mar 1) 95, <https://doi.org/10.5271/sjweh.3935>.
- [14] X. Luan, P. Wang, W. Hou, L. Chen, F. Lou, Job stress and burnout: a comparative study of senior and head nurses in China, *Nurs. Health Sci.* 19 (2) (2017 Jun) 163–169, <https://doi.org/10.1111/nhs.12328>.
- [15] D. Jackson, C. Bradbury-Jones, D. Baptiste, L. Gelling, K. Morin, S. Neville, et al., Life in the pandemic: some reflections on nursing in the context of COVID-19, *J. Clin. Nurs.* 19 (12–13) (2020) 2041–2043, <https://doi.org/10.1111/jocn.15257>.
- [16] J.W. Tang, P.A. Tambyah, D.S. Hui, Emergence of a novel coronavirus causing respiratory illness from Wuhan, China, *J. Infect.* 80 (3) (2020 Mar 1) 350–371, <https://doi.org/10.1016/j.jinf.2020.01.014>.
- [17] N. Parizad, R. Goli, R. Mirzaee, R. Baghaie, H. Habibzadeh, Satisfaction with nursing care and its related factors in patients with COVID-19: a descriptive

- correlational study, *J. Educ. Health Promot.* 10 (2021), [https://doi.org/10.4103/jehp.jehp\\_79\\_21](https://doi.org/10.4103/jehp.jehp_79_21).
- [18] N.A. Talebi-Azar, B.C. Anzali, R.A. Goli, COVID-19 and its mental health effects on nurses and health workers—a narrative review, *Pak. J. Med. Health Sci.* (2020) 1453–1456.
- [19] F. Chirico, Is burnout a syndrome or an occupational disease? Instructions for occupational physicians, *Epidemiol. Prev.* 41 (5–6) (2017 Sep) 294–298, <https://doi.org/10.19191/EP17.5-6.P294.089>.
- [20] Q. Chen, M. Liang, Y. Li, J. Guo, D. Fei, L. Wang, et al., Mental health care for medical staff in China during the COVID-19 outbreak, *Lancet Psychiatr.* 7 (4) (2020 Apr 1) e15–e16, [https://doi.org/10.1016/S2215-0366\(20\)30078-X](https://doi.org/10.1016/S2215-0366(20)30078-X).
- [21] H. Taghilou, Z. Jafarzadeh Gharajag, Investigating the relationship between burnout and job performance in the corona epidemic from the perspective of nurses, *Q. J. Nurs. Manag.* 9 (4) (2020 Dec 10) 27–33.
- [22] H.M. Alrawashdeh, B. Ala'a, M.K. Alzawahreh, A. Al-Tamimi, M. Elkholy, F. Al Sarireh, et al., Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study, *BMC Publ. Health* 21 (1) (2021 Dec) 1–8, <https://doi.org/10.1186/s12889-021-10897-4>.
- [23] N. Parizad, R. Goli, N. Faraji, M. Mam-Qaderi, R. Mirzaee, N. Gharebaghi, R. Baghaie, H. Feizipour, M.M. Haghighi, Effect of guided imagery on anxiety, muscle pain, and vital signs in patients with COVID-19: a randomized controlled trial, *Compl. Ther. Clin. Pract.* 43 (2021 May 1), 101335, <https://doi.org/10.1016/j.ctcp.2021.101335>.
- [24] G. Mathew, R. Agha, for the STROCCS Group, STROCCS 2021: strengthening the Reporting of cohort, cross-sectional and case-control studies in Surgery, *Int. J. Surg.* 96 (2021), 106165, <https://doi.org/10.1016/j.ijsu.2021.106165>.
- [25] G.Y. Tarcan, M. Tarcan, M. Top, An analysis of relationship between burnout and job satisfaction among emergency health professionals, *Total Qual. Manag. Bus. Excel.* 28 (11–12) (2017) 1339–1356, <https://doi.org/10.1080/14783363.2016.1141659>.
- [26] D. Weiss, R. Dawis, G. England, Manual for the Minnesota satisfaction questionnaire, in: *Minnesota Studies in Vocational Rehabilitation* 22, 1967, p. 120.
- [27] C. Maslach, S.E. Jackson, M.P. Leiter, *Maslach Burnout Inventory Manual*, Mind Garden, Kingston, Jamaica, 2010.
- [28] H. Martins, T. Proença, Minnesota Satisfaction Questionnaire—Psychometric properties and validation in a population of Portuguese hospital workers, *FEP J.—Econ. Manag.: Work. Pap.* 471 (1) (2012 Oct) 42–58.
- [29] M. Garooi, M. Moslemi, The relationship between burnout with prevention advice nurses, *Q. J. Psychol. Stud.* 1 (4–5) (2005) 5–19.
- [30] E.F. Iwanicki, R.L. Schwab, A cross validation study of the Maslach Burnout Inventory, *Educ. Psychol. Meas.* 41 (4) (1981 Dec) 1167–1174, <https://doi.org/10.1177/001316448104100425>.
- [31] L.J. Labrague, J. De los Santos, Fear of Covid-19, psychological distress, work satisfaction and turnover intention among frontline nurses, *J. Nurs. Manag.* (2020) 1–9, <https://doi.org/10.1111/jonm.13168>.
- [32] E. Jafar Jalal, S. Joolae, F. Hajibabae, N. Bahrani, Evaluating the relationship between nurses' occupational satisfaction and patients' satisfaction with nursing service, *Iran. J. Nat. Resour.* 10 (1) (2015 Apr 10) 25–34.
- [33] J. Maben, J. Bridges, Covid-19: supporting nurses' psychological and mental health, *J. Clin. Nurs.* 29 (15–16) (2020) 2742–2750, <https://doi.org/10.1111/jocn.15307>.
- [34] X. Yu, Y. Zhao, Y. Li, C. Hu, H. Xu, X. Zhao, J. Huang, Factors associated with job satisfaction of frontline medical staff fighting against COVID-19: a cross-sectional study in China, *Front. Public Health* 8 (2020), <https://doi.org/10.3389/fpubh.2020.00426>.
- [35] L. Luceño-Moreno, B. Talavera-Velasco, Y. García-Albuérne, J. Martín-García, Symptoms of posttraumatic stress, anxiety, depression, levels of resilience and burnout in Spanish health personnel during the COVID-19 Pandemic, *Int. J. Environ. Res. Publ. Health* 17 (15) (2020 Jan) 5514, <https://doi.org/10.3390/ijerph17155514>.
- [36] L.F. Zhang, L.M. You, K. Liu, J. Zheng, J.B. Fang, M.M. Lu, et al., The association of Chinese hospital work environment with nurse burnout, job satisfaction, and intention to leave, *Nurs. Outlook* 62 (2) (2014) 128–137, <https://doi.org/10.1016/j.outlook.2013.10.010>.
- [37] S. Portero de la Cruz, M. Vaquero Abellán, Professional burnout, stress and job satisfaction of nursing staff at a university hospital, *Rev. Latino-Am. Enferm.* 23 (3) (2015) 543–552, <https://doi.org/10.1590/0104-1169.0284.2586>.
- [38] F. Cetinkaya, Z. Akbulut, N. Dur, O. Eryalcin, M. Korkmaz, Analysis of job satisfaction and burnout level of nurses in different generations, *Int. J. Caring Sci.* 10 (3) (2017) 1507.
- [39] H. Myhren, O. Ekeberg, O. Stokland, Job satisfaction and burnout among intensive care unit nurses and physicians, *Crit. Care Res. Pract.* (2013), 786176, <https://doi.org/10.1155/2013/786176>, 2013.