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REVIEW ARTICLE

FACTORS AFFECTING BURNOUT IN IRANIAN HEALTH CARE WORKERS DURING COVID-19: A SYSTEMATIC REVIEW

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ABSTRACT

INTRODUCTION: Working through the COVID-19 pandemic has exposed Health Care Workers to physical and psychological risks that can result in a broad range of mental health problems, including burnout. The aim of the present study was to investigate factors affecting burnout in Iranian Health Care Workers during the COVID-19 pandemic. Identifying the principal factors affecting burnout will assist efforts to prepare for, and, prevent harm, to staff participating in future healthcare emergencies.

MATERIAL AND METHODS: A systematic review of scientific literature using the PRISMA guideline was completed, and included literature published from January 2020 until December 2021. The articles related to burnout in Iranian Health Care Workers during COVID-19 were obtained through Google Scholar, SID, Magiran Scopus, PubMed, and Web

of Science databases using related keywords. Thematic analysis was used to analyze the obtained data.

RESULTS: 203 articles were identified through an initial search and finally, 14 studies were entered into the analysis. Based on the literature review, the principal factors affecting burnout were divided into 2 main themes and 4 subthemes. The themes included human factors, and organizational factors, and the sub-themes included individual characteristics, psychosocial factors, occupational conditions, and training.

CONCLUSIONS: Individual and psychosocial characteristics have important effects on burnout among Health Care Workers and this can cause negative flow-on effects on the quality of life of these workers, and the quality of medical services. The prevalence of burnout is relatively higher among medical practitioners and nurses, and it is important to enhance coping resources and health education activities that support the resilience of these clinicians in the challenging and stressful context of a pandemic.

KEY WORDS: burnout; Iran; health care worker; COVID-19; systematic review

INTRODUCTION

COVID-19 is a serious and life-threatening infectious disease that has created a major global health crisis [1]. This disease has negative social, economic, and psychological consequences. Sociological effects of coronavirus include family relationship problems, increased rates of smoking and domestic violence, and economic effects, such as loss of employment or inability to work during quarantine, eviction, and other consequences of financial stress, and psychological effects including stress, anxiety, loneliness, depression and burnout [2]. As the coronavirus pandemic accelerated, global healthcare systems experienced increasing pressure, leading to severe stress for healthcare workers, especially nurses caring for seriously ill patients with COVID-19 [3]. High levels of psychological stress have been reported among nurses caring for infected patients during the pandemic. In Iran, several studies revealed high psychological distress and burnout among healthcare workers during the fourth peak of the .[COVID-19 pandemic [4–6

Nurses make up the largest proportion of the healthcare workforce, and they take on most of the frontline tasks associated with preventing the spread and providing treatment for,

infectious diseases [7]. During the pandemic, nurses made heroic efforts, at times risking their lives, in emergency departments, infection control units, intensive care units, and COVID-19 patient wards, demonstrating their commitment to the profession and their patients [2, 8]. Nursing staff has been at the center of the pandemic crisis [9, 10] and overwork, inadequate resources, and stress in the workplace have negatively affected their mental health [5, 10, 11]. In addition to disrupting health care delivery in affected areas, a lack of resources such as personal protective equipment, Intensive Care Unit (ICU) beds, and ventilators has been shown to increase their psychological burden [12]. Rahmani concluded that a poor psychological state can result in less compliance with basic and important healthcare .[behaviors, which in turn can lead to poor health outcomes among patients [12

Those who care for very seriously ill patients are prone to burnout due to the special context of this type of care, such as the criticality of illness and the associated high patient mortality, long hours of intense work, and regular exposure to trauma and moral issues [13–15]. The prevalence and infectivity of COVID-19 expose nurses to the risks of infection and .[may lead to increased levels of stress and to burnout among front-line nurses [4

Burnout is a psychological syndrome that occurs as a negative reaction to job stressors, which is a combination of emotional burnout, personality decline, and a sense of diminished personal success. The consequences of burnout are dangerous for nurses, patients, and health care providers. Burnout can reduce the quality of care or services provided by nursing staff [16]. Burnout not only affects the ability to enjoy work but can also lead to depression, post-traumatic stress disorder, substance abuse disorder, and suicide. This can increase the workflow and lead to a shortage of nurses. The relationship between burnout and patient safety events is well known. Physicians and nurses with burnout are more likely to make medical errors, provide less quality care, and have poor communication with their patients. Burnout is associated with a 30-day higher mortality rate and nosocomial infections .[[17, 18

According to the study of Hoseinabadi et al. [14], job stress is the main factor related to burnout and the second and third factors are hospital resources and the support of family and friends, respectively. Nurses working in intensive care units are exposed to the highest levels of stress during the pandemic [11]. Nurses' stress and fear increase over time and they are psychologically affected. Hence, they suffer from burnout due to uncertainty and hard .[work [2

Another study suggests that being a woman and working on the COVID-19 frontline results in a higher burnout rate, while the level of burnout decreases with better .[socioeconomic status and more children [15

The psychological impact of this unprecedented health emergency may be long-lasting. Addressing the consequences of COVID-19 on the mental health of healthcare workers is critical, as mental health issues may impede the ability of healthcare staff to work. For this reason, supportive interventions for healthcare workers are essential at this stage [19]. Due to the continuing epidemic of coronavirus and the uncertainty of the time of the end of the disease, it is necessary to study the prevalence of burnout and its underlying factors so that the results can be used in the next possible circumstances by health policymakers, to be placed. Therefore, this systematic review study was conducted to investigate the factors .affecting burnout in nurses during the epidemic of COVID-19 disease in Iran

MATERIAL AND METHODS

In this study, a systematic review was performed [17]. Based on the PICO (Population or Problem, Intervention or Exposure, Comparison, Outcome) criteria, a search strategy was developed and executed using an electronic search. The PICO question was formulated as follows “What are the factors in creating burnout in Health Care Workers during COVID-19?”.

Search Strategy

An electronic search of databases of Google Scholar, SID, Magiran, Scopus, PubMed, and Web of science was conducted. Valid English keywords and Persian equivalents were used in this study, including: “Professional Burnout”, “Occupational Burnout”, “Career Burnout”, “Job Burnout”, Burnout, “2019 novel coronavirus disease”, COVID19, “COVID-19 pandemic”, “SARS-CoV-2 infection”, “COVID-19 virus disease”, “2019 novel coronavirus infection”, “2019-nCoV infection”, “Coronavirus disease 2019”, “2019-nCoV disease”, “COVID-19 virus infection”, “Health Personnel”, “Health Care Provider*”, “Health worker*”, “Healthcare Provider*”, “Healthcare Worker*”, “Health care professional*”, “medical staff”, “Medical worker*”, Iran. Keywords, tag fields and operators were used to formulate the strategy search. The search strategy was first developed for PubMed and then other search strategies for other information sources were developed based on the PubMed

version. The searches were conducted from the beginning of 2020 to the end of Dec 2021. The search strategy for the database types is listed in Table 1.

Selection of articles and document

For the selection of articles and documents, independent reviewers (HS and FA) screened abstracts and titles for eligibility. When the reviewers determined that the abstract or title was potentially useful, full copies of the article were retrieved and considered for eligibility by both reviewers. If discrepancies occurred between reviewers, the reasons were identified and a final decision was made based on a review by a third team member (AS). Two authors (FA and AS) assessed the methodology, quality, and grade of evidence of included studies with the Critical Appraisal Skills Program (CASP) tools [20]. The CASP tool uses a systematic approach to appraise different study designs from the following domains: study validity, methodology quality, presentation of results, and external validity. Each of the items from the checklists was judged with yes (low risk of bias, score 1), no (high risk of bias), or cannot tell (unclear or unknown risk of bias, score 0). Total scores were used to grade the methodologic quality of each study.

Inclusion and exclusion criteria

Inclusion criteria included studies that in any way addressed burnout among Iranian healthcare workers during COVID-19. Exclusion criteria included studies that examined burnout among healthcare workers during other epidemics as well as in other countries.

Data extraction

At this stage, the two researchers independently extracted all the required information from the final articles entered into the study process by a pre-prepared checklist, and this checklist included the first author, place of study, study design, sample size, title, and results.

RESULTS

The initial electronic database search of the literature resulted in a total of 203 documents. In the next step, duplicated, books, dissertations, and presentations were excluded and the number of documents in the sample decreased to 179 articles. Based on the systematic screening, described above, we reviewed the titles and abstracts and found 18 eligible articles. In the next step, all 18 selected full-text papers were considered and finally 12 papers included 2 qualitative [20, 21], 10 cross-sectional studies [14, 22–29] which reported rehabilitation of vulnerable groups in emergencies and disasters were selected. Figure 1 shows

the search strategy and the selected articles in accordance with the PRISMA guidelines. The characteristics of the selected studies are listed in Table 2. Based on a literature review and consultation with experts, the factors affecting burnout among healthcare workers in Iran during COVID-19 were conceptualized into 2 themes, including 4 categories, as shown in Table 3.

DISCUSSION

The aim of this study was to investigate the factors affecting burnout in Iranian healthcare workers during COVID-19 in a systematic review manner. In studies conducted in different parts of the world, the prevalence of burnout has been reported high among healthcare personnel during the COVID-19 period. This finding is in line with the results of studies reviewed in a recent review [23, 24]. However, other review studies have reported that the prevalence of burnout is between 6 and 25 percent [30, 31].

Due to the different dimensions of burnout, studies on burnout in the pre-epidemic period of COVID-19 also reported a high prevalence of burnout (about 40%) among nurses in intensive care units, which is a significant figure [32] and underlines the importance of investigating this issue among health care staff, especially nurses. In previous epidemics such as SARS and MERS, the prevalence of anxiety disorders and burnout among healthcare personnel was reported to be over 30%, which is a significant figure [25, 33, 34].

The results of reviewed studies indicate a high prevalence of burnout during the COVID-19 pandemic compared to the pre-pandemic period in healthcare workers. According to the results of a recent study, among the factors affecting burnout, human factors play an important role, including individual characteristics and psychosocial factors. In the category of individual factors, items such as age, sex, marital status, work sector, and work experience were directly related to the prevalence of burnout, so that in women and at a younger age this prevalence was reported higher, and personnel in wards with higher rates of infection experienced more psychological symptoms and burnout, which is consistent with other studies in this field in other countries [34]. Also working on the COVID-19 frontline is associated with a higher burnout rate, while the level of burnout decreases with better socioeconomic status and more children. The findings suggest that being a woman and resilience, capacity for mentalizing, and burnout syndrome among HCWs are interrelated phenomena, which have important professional implications [15].

A meta-analysis by Pappa et al. [35], Which looked at 13 studies of 33,062 healthcare staff, reported that women were more anxious and depressed than men and that nurses had higher rates of psychological symptoms compared to other members of the healthcare team.

According to the results of a recent study, psychosocial factors are among the human factors that are associated with burnout in the COVID-19 era. Depression, anxiety, emotional fatigue, depersonalization, flexibility, social welfare, religious values, and beliefs, are among the subset of factors that were mentioned in the studies. Khasne et al. [36] also stated in their study that during the recent epidemic, fear and anxiety about transmitting the disease to family members and lack of staff increased workload and exacerbated the risk of the development of burnout among nurses. Family members and the use of support resources based on the culture of each community can play an important role in reducing the negative effects of burnout on staff.

Among other factors affecting the rate of burnout were organizational factors that included two subcategories of working conditions and education. Workplace pollution, congestion of wards, contact with patients' secretions, working in aCOVID-19 ward, and communication with infected patients were among the occupational conditions mentioned s that increased the rate of burnout of the healthcare team in Iran. In other studies, nurses cited the unknown nature of the disease, lack of support resources, and lack of personal protective equipment as a cause of conflict between professional and personal needs, which in turn led to psychological stress and burnout [37].

Chirico [38] concludes that Spiritual resources can be used as a strategy for coping with the negative consequences of the COVID-19 pandemic, in the short and long term. Spirituality encompasses philosophical and cultural aspects that may contribute to tackling climate change and other emerging challenges, such as wars and other conflicts, advancing global health security, and achieving the Sustainable Development Goals.

The results of a recent study showed that education can be effective as an organizational response to the rate of burnout. Participation in resuscitation updates for patients, participation in operational maneuvers, and participation in in-service crisis care courses was among the codes extracted in this field. Escribà-Agüir [39] in his study pointed out that a history of presence in critical situations can be effective in reducing the rate of burnout in emergency department nurses. Also Chirico et al. [40] mention that workplaces represent the ideal arena for implementing mental health interventions, especially among high-risk working populations, through facultative workplace health promotion programs.

Training and stress reduction through participation in in-service training courses are among the effective interventions in reducing burnout during the COVID-19 period, which Maunder [41] has mentioned in his study. Receiving training through institutions and organizations improves the working environment and service delivery structure and improves staff resilience to cope with difficult conditions. Due to the fact that burnout increases the risk of medical errors and leads to patient dissatisfaction [36], reducing work stress and paying attention to the mental health of staff are among the items that have been mentioned in studies as strategies to reduce burnout [42].All of the items that are identified in recent studies can have positive effects on the rate of burnout in health care workers and so, for prevention of burnout, organizational interventions such as improving capacities and resources have effects on reducing burnout. Also, individual-level interventions include education and stress reduction techniques can help health care worker to adopt with stressful condition in COVID-19 epidemic.

Strengths and limitations

The present study was the first systematic review of Factors Affecting Burnout in Iranian Health Care Workers. One of the limitations of this review was the number of studies that mention factors affecting burnout, and, also in this review, only Persian and English language articles were considered.

CONCLUSIONS

The results of this review showed a high rate of burnout among healthcare workers, particularly nurses, after the onset of the COVID-19 pandemic. The presence of risk factors derived from work challenges, including individual factors and workplace factors, can increase the likelihood of burnout syndrome and it is important to enhance coping resources and improve the ability of healthcare workers to adjust to changing circumstances and develop strategies to alleviate occupational stress and job burnout. Further studies are needed to examine the risk factors for burnout and evaluate ways to reduce the rate of burnout, but according to the results, strategies such as educational, supportive, and psychological interventions to reduce the rate of burnout in the recent pandemic demonstrated several possible solutions

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Conflicts of interest

Nothing to declare.

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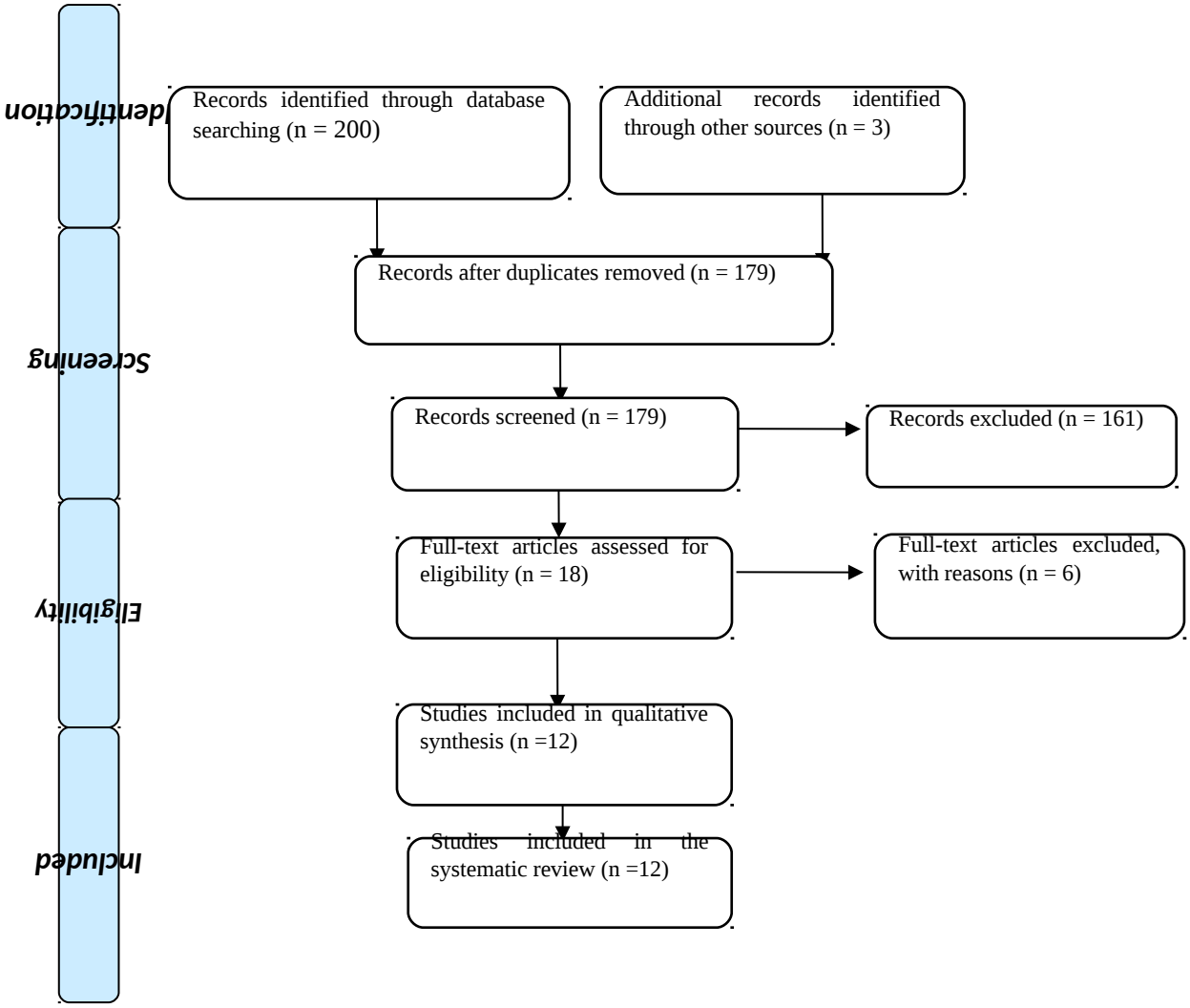

Figure 1. Flowchart of the selection of studies based on PRISMA

Table 1. Search strategies in different databases

Database	Search strategy
PubMed	((“Professional Burnout” OR “Occupational Burnout” OR “Career Burnout” OR “Job Burnout” OR Burnout) AND (“2019 novel coronavirus disease” OR COVID19 OR “COVID-19 pandemic” OR “SARS-CoV-2 infection” OR “COVID-19 virus disease” OR “2019 novel coronavirus infection” OR “COVID-19 virus infection”) AND (“Health Personnel” OR “Health Care Provider*” OR “Health worker*” OR “Healthcare Provider*” OR “Healthcare Worker*” OR “Health care professional*” OR “medical staff” OR “Medical worker*”) AND Iran)
Scopus	(ALL(“Professional Burnout”) OR ALL(“Occupational Burnout”) OR ALL (“Career Burnout”) OR ALL (“Job Burnout”) OR ALL (Burnout)) AND (ALL(“2019 novel coronavirus disease”) OR ALL(COVID19) OR ALL(“COVID-19 pandemic”) OR ALL(“SARS-CoV-2 infection”) OR ALL(“COVID-19 virus disease”) OR ALL(“2019 novel coronavirus infection”) OR ALL(“2019-nCoV infection”) OR ALL(“Coronavirus disease 2019”) AND (ALL(“Health Personnel”) OR ALL(“Health Care Provider*”) OR ALL(“Health worker*”) OR ALL(“Healthcare Provider*”) OR ALL(“Healthcare Worker*”) OR ALL(“Health care professional*”) OR ALL(“medical staff”) OR ALL(“Medical worker*”)) AND ALL (Iran)
Web of science	((TS=(“Professional Burnout”) OR TS= (“Occupational Burnout”) OR TS= (“Career Burnout”) OR TS= (“Job Burnout”) OR TS= (Burnout)) AND (TS= (“2019 novel coronavirus disease”) OR TS= (COVID19) OR TS= (“COVID-19 pandemic”) OR TS= (“SARS-CoV-2 infection”) OR TS= (“COVID-19 virus disease”) OR TS= (“2019 novel coronavirus infection”) OR TS= (“2019-nCoV infection”) OR TS= (“Coronavirus disease 2019”) OR TS= (“2019-nCoV disease”) OR TS= (“COVID-19 virus infection”)) AND (TS= (“Health Personnel”) OR TS= (“Health Care Provider*”) OR TS= (“Health worker*”) OR TS= (“Healthcare Provider*”) OR TS= (“Healthcare Worker*”) OR TS= (“Health care professional*”) OR TS= (“medical staff”)

	OR TS= (“Medical worker*”)) AND TS= (Iran))

Table 2. The information of studies that were selected for review

First author	Title	Publication year	Location	Design	Summary of findings
Yaser Sarikhani [22]	Burnout Among Physicians and Medical Interns: Comparing Time-Periods of Coronavirus Di sease Outbreak In Shiraz	2021	Shiraz	Cross-sectional	The present finding could remind policymakers of the importance of burnout issue among physicians during the pandemic it is suggested that focusing on strategies such as improving organizational resilience, improvement of the healthcare working environment,

					and development of coping skills among physicians could be helpful in this regard
Mohammad Jalili [23]	Burnout Among Healthcare Professionals During Covid-19 Pandemic: A Cross-Sectional Study	2021	Tehran	Cross-Sectional	Burnout is prevalent among healthcare workers caring for COVID-19 patients. Age, gender, job category, and site of practice contribute to the level of burnout that staff experience
Mohsen Khosravi [24]	Burnout In Hospital Medical Staff During The COVID-19 Pandemic: Diagnosis, Treatment, And Prevention	2021	Zahedan	Narrative Review	Results were provided on the burnout history and its major effects, causes, and prevalence among healthcare workers. In addition, some

					strategies were listed to be employed by hospital medical staff and organizations to deal with the COVID-19 pandemic burnout
Tahere Sarboozi Hoseinabadi [14]	Burnout And Its Influencing Factors Between Frontline Nurses and Nurses from Other Wards During the Outbreak Of Coronavirus Disease-COVID-19 — In Iran	2020	Torbat Heydariyeh	Cross-Sectional	The burnout level in frontline nurses was higher than other nurses, and the most important influencing factor was job stress. regarding negative effects of burnout on both physical and mental health nurses, it is suggested that a strong strategy be considered to reduce nurses’

					burnout to be able to control ongoing and future outbreaks successfully
Azizeh Alizadeh [43]	Psychological Distress Among Iranian Health-Care Providers Exposed To Coronavirus Disease 2019 (COVID-19): A Qualitative Study	2020		Qualitative Study	The results of this study found that there were some barriers and challenges to medical personnel exposed to COVID-19 that caused psychological distress. some of these problems are related to the nature of the illness, others are related to social and organizational demands and some the supportive resources buffer the relationship between

					occupational demands and psychological distress
Maryam Vizheh [25]	The Mental Health of Healthcare Workers in the COVID-19 Pandemic: A Systematic Review	2020		Systematic Review	During the SARS-CoV-2 outbreak, the healthcare workers face aggravated psychological pressure and even mental illness. it would be recommended to policymakers and managers adopt the supportive, encouraging & motivational, protective, and training & educational interventions, especially through information and communicatio n platform
Ahmad	Nursing	2020	Shiraz And	Qualitative	In this case,

Kalateh Sadati [21]	Experiences Of COVID-19 Outbreak in Iran: A Qualitative Study		Kashan	Study	the main experiences were related to defective preparedness, the worst perceived risk, family protection, social stigma, and sacrificial commitment. Urgent preparedness of facilities in such outbreaks is inevitable
Karimi Johani R [26]	Investigating The Relationship Between Burnout and Job Performance in The Corona Epidemic from The Perspective of Nurses	2021	Urmia	Descriptive -Analytical Study	Considering the significant relationship between COVID-19 with burnout and job performance, it is hoped that providing the necessary solutions and measures, to help prevent the effects of this disease
Seyyedeh	Psychological	2020	Tehran	Cross-	Supportive

Fatemeh Mousavi [27]	Well-Being, Marital Satisfaction, And Parental Burnout In Iranian Parents: The Effect of Home Quarantine During COVID-19 Outbreaks			Sectional	resources in family-based culture may play an essential role to reduce the negative effects of stressful situations on family interactions.
Ramin Rahmani [28]	Relationship Between COVID-19 -Caused Anxiety and Job Burnout Among Hospital Staff: A Cross-Sectional Study in The Southeast of Iran	2020	Zahedan	Cross-Sectional	It was found that there was a significant relationship between corona-caused anxiety and job burnout. According to the high prevalence of such disorders, it is suggested that more attention be paid to hospital staff due to their special role in the treatment of COVID-19

Mehrdad Sharifi [29]	Burnout Among Healthcare Providers Of COVID-19; A Systematic Review of Epidemiology and Recommendation s	2021		Systematic Review	Paying attention to mental health issues, reducing the workload of hcps through adjusting their work shifts, reducing job-related stressors, and creating a healthy work environment may prevent or reduce burnout
Maryam Vizheh [25]	The Mental Health of Healthcare Workers in the COVID-19 Pandemic: A Systematic Review	2020		Systematic Review	Nurses, female workers, front-line healthcare workers, younger medical staff, and workers in areas with higher infection rates reported more severe degrees of all psychological symptoms than other healthcare

					workers

Table 3. Themes and sub-themes related to burnout during COVID-19

Theme	**Subtheme**	**Sample codes**
Human factors	Individual characteristics	Gender — marriage — age — work experience — personnel experience — organizational dependence of personnel
	Psychosocial factors	Depression — anxiety — emotional fatigue — depersonalization — flexibility — social welfare — religious values and beliefs
Organizational factors	Occupational conditions	Workplace clutter — congestion of patients — contact with patients' secretions — working in covid ward — communication with infected patients
	Training	Participate in resuscitation operations of COVID patients — participate in operational maneuvers — participate in service crisis care courses