



Review Article

Burnout in Hospital and Pre-Hospital Emergency Departments: A Systematic Review Study

Ali Ravaghi¹ , Roohie Farzaneh² , Farhad Bagherian³ , Arman Hakemi¹, Ghazal Seghatoleslami⁴, Samaneh Abiri⁵ , Hossein Hakimelahi⁶ , Fatemeh Maleki^{7*}

¹Department of Emergency Medicine, Mashhad University of Medical sciences, Mashhad, Iran

²Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical sciences, Mashhad, Iran

³Department of Emergency Medicine, Babol University of Medical Sciences, Babol, Iran

⁴Department of Medicine, Mashhad University of Medical sciences, Mashhad, Iran

⁵Department of Emergency Medicine, Jahrom University of Medical sciences, Jahrom, Iran

⁶Research Center for Non-Communicable Diseases, Jahrom University of Medical Sciences, Jahrom, Iran

⁷Department of Emergency Medicine, Faculty of Medicine, Birjand University of Medical Sciences, Birjand, Iran

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ABSTRACT

Introduction: Hospital and Pre-hospital emergency staff are the first to experience stressful situations, and this long-term stress leads to burnout. This study aimed to investigate burnout in hospital and pre-hospital emergency departments as a systematic review study.

Methods: In this systematic review study, articles published in Persian-language database such as SID, Iranmedex, Magiran, and English-language databases as Science Direct, PubMed, ProQuest, Cochrane Library, Embase, Scopus, and Google Scholar search engine were examined from 2010 to 2022, using keyword such as emergency, emergency medical staff, pre-hospital emergency, emergency department nurses were studied. The quality of the given articles was evaluated using a STROBE checklist.

Results: In this study, 27 articles were used for review. The rate of burnout was divided into three categories: Low, Moderate and High. This study was reported as low in 4 studies, Moderate in 17 studies, and 4 High in 4 studies. The relationship between demographic variables and burnout, the highest relationship between work experience, and burnout was seen in 15 studies.

Conclusion: The results of the present study indicate a significant relationship in most studies between work experience and burnout. Due to the moderate prevalence of burnout in hospital and pre-hospital emergency departments, health planners and policymakers should adopt the appropriate methods and techniques to prevent this phenomenon.

GRAPHICAL ABSTRACT



* Corresponding author: Fatemeh Maleki

✉ E-mail: Email: maleki.f@bums.ac.ir

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Introduction

One of the most important sources of stress is the type of job. The job stress has a significant impact on different aspects of the life of working people [1]. The occupational burnout is one of the main consequences of job stress that requires attention [2]. Burnout is defined as a physical or mental failure caused by excessive work or high stress of working conditions [3]. In the clinical field, burnout means losing the feeling and interest in the client, inappropriate, and inhuman care for the client [4]. Burnout can be considered as a disorder caused by a person's prolonged exposure to psychological pressure associated with work and people, which will be accompanied by symptoms of emotional, physical, and mental breakdowns. A sufferer's self-esteem is low and they experience a feeling of unhappiness [5-6]. Burnout is one of the main factors in reducing efficiency, loss of workforce, and causing physical and mental complications, especially in the human services professions [7]. Burnout leads to a decrease in feelings of well-being and health, a reduction in the quality of care, and an increase in work absence and related costs to the treatment staff [8]. The exact rate of burnout is unknown, but some statistics show that one in seven employees collapses at the end of the day. The European Agency for Safety and Health at work estimated the cost of burnout, at 20 billion euros in Europe and \$50-\$75 million in the United States in 2002 [9-11]. Healthcare staff, including general practitioners, specialists, nurses, and practical nurse, experience higher rates of burnout than the other occupations due to exposure to a variety of stressors such as psychological, physical, managerial, and interpersonal pressures [12-17]. Studies indicate that prolonged and continuous workplace stress can lead to such problems as resignation, repeated absences, reduced energy, and work efficiency [18], reduced creativity and incompatibility with colleagues [19], reduced professional satisfaction [20], reduced quality of care [21], reduced correct and timely decision

making, reduced ability, and work commitment of employees, feelings of incompetence, depression, decreased job values, disgust and fatigue from work [22] and finally, it leads to burnout syndrome [23]. Burnout syndrome is characterized by specific symptoms which include emotional exhaustion, depersonalization, and feelings of inadequacy. Emotional fatigue refers to excessive physical and mental fatigue it is when a person feels that he no longer has enough energy to continue working [24] and it is a negative feeling of emotion that is created too much in the person and makes him helpless [25]. The cost of burnout is paid primarily by the clients because the quality of nursing care decreases and as a result, the clients' satisfaction also decreases [26]. When nurses feel burnout, they provide poorer care, which ultimately harming the organization. Therefore, organizations similarly pay the price of burnout [27]. Considering the importance of burnout and its consequences and its direct impact on patients' health and the fact that according to our data, no review has been conducted on burnout prevalence in hospital and pre-hospital emergency personnel and its causes in Iran, this study was conducted to investigate the prevalence of burnout in hospital and pre-hospital emergency personnel.

Methods

In this study, a systematic review of preliminary studies was performed for the period 2010 to 2022 in the following databases: papers in Persian language databases; SID, Iranmedex, Magiran, and English language databases; Science Direct, PubMed, ProQuest, Cochrane Library, Embase, Scopus, and Google Scholar Search Engine. To access the full text of the articles, Boolean search methods, And, OR operators, and Mesh keywords are included; burnout, job burnout, Iran, emergency department, emergency medical staff, pre-hospital emergency, emergency department nurses were used (Table 1).

Table 1: Database search strategy

1	' Burnout ' OR ' Job Burnout ' OR ' Iran ' OR ' Job Burnout ' OR ' Emergency department ' OR ' Emergency medical staff '
2	' Burnout ' AND ' Iran ' OR ' Pre-Hospital Emergency ' AND ' Nueces ' OR ' Emergency medical staff ' AND ' Job Burnout ' OR ' emergency department ' AND ' Iran '

Criteria for selecting and evaluating the quality of articles

First, a list of titles and abstracts of all articles in the mentioned databases were prepared and independently reviewed to determine and select the related topics. Based on the studies, duplicate and irrelevant articles were removed and related articles were selected. The quality of the articles was evaluated using the STROBE standard checklist [28]. This checklist consists of 43 different sections and evaluates various aspects of research methodology including: sampling methods, measurement of variables, statistical analysis, and study objectives. In this checklist, is considered with a score of 1 for each section, the minimum score could be obtained, a score of 40 and above, a score of 45. Finally, articles which scored the minimum score (40 scores) on

checklist questions were included in the research. To prevent bias, extract and assess the quality of articles, two independent researchers were conducted. In cases of disagreement between the two researchers, the third person reviewed the article. The data of the articles were extracted in the form the first author's name, publication year, research location, type of research, sample size, questionnaire tool, mediating components, and demographic variables. Inclusion criteria included: the minimum score required according to the STROBE checklist to enter the study, the publication of the research in one of the journals, access to the full text of the articles. Exclusion criteria include: duplicate articles, qualitative articles, ethnography, narrative review, conference papers and letters to the editor, lack of access to the full text of the articles.

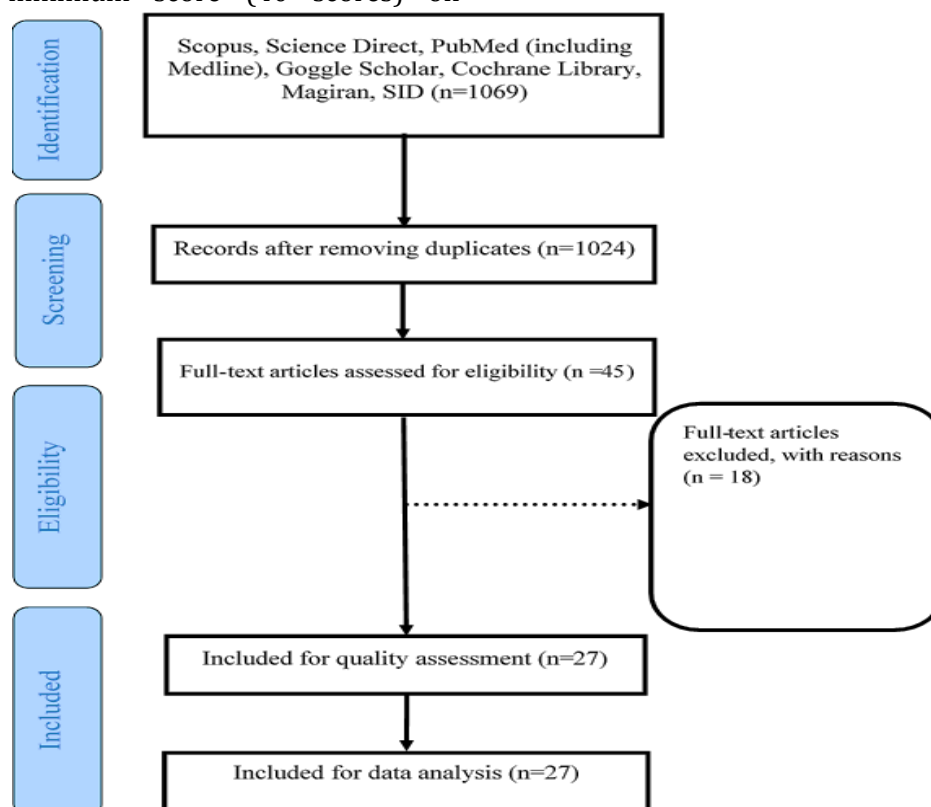


Diagram 1: The PRISMA flow diagram

Results and Discussions

In the initial stage, 1069 studies were reviewed and studied. The researchers then reviewed the searched articles and 1042 studies were deleted due to not being relevant to the subject and duplication and lack of access to the full article. The qualitative articles, letters to the editor, tool design and narrative review, although with the

same subject were excluded from the review due to differences in study methods. Finally, 27 articles were used to review and enter this study. Among the studied researches, 9 studies in Tehran, 3 studies in Mazandaran, 2 studies in Mashhad and Shahroud and the rest in the cities of Urmia, Gilan, Golestan, Gonabad, Birjand, Kashan, Qom, Kermanshah, Hamadan, Isfahan, and Shiraz are done. The study types and number included:

14 descriptive-cross-sectional, 7 descriptive-analytical articles, 4 descriptive-correlational studies, 1 cross-sectional-correlational article, and 1 analytical correlational study. The data collection tool in 26 studies, was Maslach Burnout Inventory and in 1 study, was the Tedium Scale. In this study, The rate of burnout was divided into three categories: Low, moderate and High. Accordingly, 4 Low studies, 17 Moderate studies, and 4 High studies were reported. Likewise, the rate of burnout was not reported in 2 studies. In the studies, there were 17 studies in emergency medical personnel, 7 studies in nurses, 2 studies in physicians, and one study in emergency medical assistants. Also, the relationship between different demographic variables and burnout has been investigated. The results indicate that there

was statistically significant relationship between age and burnout in 12 studies, there was no statistically significant relationship in 9 studies and was not mentioned in 6 studies. there was a statistically significant relationship between work experience and burnout in 15 studies, there was no statistically significant relationship in 3 studies and was not mentioned in 9 studies. There was a statistically significant relationship between marital status and burnout in 11 studies, there was no statistically significant relationship in 5 studies and was not mentioned in 11 studies. there was statistically significant relationship between education variable and burnout in 12 studies, there was no statistically significant relationship in 7 studies and was not mentioned in 8 studies.

Table 2: Preliminary articles included in the systematic review

Author / year of study	Place of study	Sample size	Questionnaire	Average / percentage	The rate of burnout	Occupation	Outcome
Barzegar / 2021	Orumieh	120	Maslach	burnout	High	nurses	No statistical relationship was found between any of the dimensions of burnout between the numerical variables of age, service history, work experience in this center and the number of working hours per week [29].
Norouzi / 2020	Tehran	110	Maslach	66/19±81/66	High	nurses	The results of the present study showed that nurses suffer more from Personal Accomplishment than Emotional Exhaustion and Depersonalization [30].
Moradchelleh/ 2020	Shahrour	100	Maslach	Emotional Exhaustion:	Moderate	Pre-hospital emergency	Pre-hospital emergency staff have low degrees of severity and frequency of Emotional Exhaustion and moderate levels of severity and frequency of Personal [31].
Asadi et al. / 2019	Gilan	201	Maslach	18/3±9/6	Moderate	Medical emergencies	Accomplishment and a large degree of depersonalization [32].
Shahsavani / 2019	Golestan	264	Maslach	Depersonalization:	Moderate	Medical emergencies	The results of the present study showed that there is no statistically significant relationship between burnout and demographic variables [33].

Bahadori / 2019	Tehran	308	Maslach	8/5±0.9	Moderate	Medical emergencies	The results showed that the mean Emotional Exhaustion depersonalization and Personal Accomplishment were in the middle category according to the normative score. According to the results of the present study, these people, like other health care professionals in different countries and Iran, are at risk of burnout [34].
Shareinia/ 2018	Gonabad	100	Maslach	Personal Accomplishment:	Moderate	Pre-hospital emergency	Reducing working hours, examining the factors of dissatisfaction and stressors in the workplace and improving welfare facilities can reduce burnout among employees [35].
Vaziri/ 2018	Tehran	83	Maslach	27/6±2/8	Moderate	Nurses	The most common burnout in pre-hospital emergency staff is related to the Emotional Exhaustion dimension [36].
Tavakoli /2018	Tehran	788	Maslach	Emotional Exhaustion:	Moderate	Nurses	Job burnout rank among the studied residents rose in the desired range and increasing age was an important factor in their burnout rank index [37].
Soltanifar/ 2018	Mashhad	108	Maslach	8/7±40/84	High	physicians	More than 60% of the emergency nurses studied had moderate levels of burnout [38].
Eslami /2017	Birjand	89	Maslach	Depersonalization:	Low	Medical emergencies	The high level of burnout and job dissatisfaction in this study is shocking [39].
Hoseinejad/ 2017	Mazandaran	93	Maslach	8/4±9/23	Low	Nurses	This study showed that urgent medical staff in South Khorasan province reported low degrees of Emotional Exhaustion and Depersonalization and Lack of Personal Accomplishment, which generally reported burnout in all three dimensions in the low range [40].
Ronaghy/ 2017	Kashan	92	Maslach	Personal Accomplishment:	Moderate	Medical emergencies	Based on the results of the present study, all nurses in the evaluated emergency departments had some degree of burnout. The most common factors in the incidence of burnout in the present study were related to Emotional Exhaustion, Lack of Personal Accomplishment and Depersonalization, respectively. Hospital, age, sex and work experience had no significant effect on the rate of burnout [41].
Haji Mohammad Hosseini / 2017	Qom	150	Maslach	37/7±6/67	Low	Medical emergencies	Burnout of emergency medical staff is moderate in the dimension of Emotional Exhaustion [42].

Pre-hospital staff have a favorable burnout rate [43].		Medical emergencies	Moderate	82/2±0.628	Maslach	Tehran	Aram Ghaniyoun/ 2017
Most of Tehran's emergency operational personnel have moderate degrees of emotional exhaustion, personal accomplishment, depersonalization and job involvement [44].		Nurses	High	Emotional Exhaustion:	Tedium	Mazandaran	Fakhri / 2014
Burnout is high in emergency department nurses [45].		Medical emergencies	Moderate	71/66±20/7	Maslach	Tehran	Aghaiezhad/ 2014
23.4% have high burnout, 24.5% have low burnout and 52% have moderate burnout [46].		Medical emergencies	Moderate	Depersonalization:	Maslach	Kermanshah- Hamedan	Khatiban / 2014
The rate of burnout was affected by younger age, single status, smoking history, lower income, more work experience, longer shifts, and even spouse work status [47].		Nurses	-----	67/61±10/3	Maslach	Mashhad	Izadi / 2013
The results of the present study showed that there is a statistically significant difference between men and women in the rate of burnout and men are more likely than women to suffer from burnout [48].		Medical emergencies	Moderate	Personal Accomplishment:	Maslach	Hamedan	Khatiban / 2013
Existence of burnout in emergency medical operations staff of Hamadan province can be considered as a warning signal for managers and officials of emergency services in Hamadan province and possibly in the other provinces in Iran [49].		Emergency technicians	Moderate	95/56±13/1	Maslach	Esfahan	Moradi / 2013
Pre-hospital emergency personnel in Isfahan reported moderate levels of emotional exhaustion, depersonalization, and, to a large extent, Lack of personal accomplishment [50].		Medical Emergency	Moderate	Emotional Exhaustion:	Maslach	Tehran	Shojaifard/ 2013
The Occupational conditions of emergency medical personnel can exacerbate burnout [51].		Pre-hospital emergency	Moderate	28/±0/77	Maslach	Tehran	Moshagh eshgh/ 2013

The overall level and dimensions of burnout in most of the studied units were at a moderate level [52].		Nurses	Moderate	Depersonalization:	Maslach	187	Shiraz	Nikbakht Nasrabadi / 2013
The nursing complex working in the emergency department has a moderate burnout [53].		Emergency Medical Operations Staff	Moderate	3/5±0/79	Maslach	114	Shahrour	Ebrahimi / 2013
Burnout was moderate among emergency medical staff [54].		physicians	High	Personal Accomplishment:	Maslach	165	Tehran	Jalili / 2013
This study showed that a high percentage of these physicians suffer from moderate to high burnout jobs [55].		Medical Emergency	Moderate	17/2±4/1	Maslach	155	Mazandaran	Bozorgi / 2013

Today, burnout in the health sector has attracted the attention of many researchers due to its direct relationship with human health, which is one of the most important areas of the sustainable development in human societies [56]. The job of emergency hospital and pre-hospital staff is one of the occupations that due to high work pressure and long working time during the day and also special situations during work are associated with several problems which reduce their efficiency and increase their error factor [31]. Emergency department, in addition to endure psychological and physical pressures, suffer from certain stresses such as time urgency and critical situations of patients [57-59]. The prevalence of burnout in a limited number of provinces of Iran has been studied [29-33, 35, 38-39, 41-42, 46, 48-49 and 52]. This indicates that the studies on the prevalence of burnout in terms of coverage and generalization are not comprehensive and have not been done in many provinces of Iran. Some studies have also indicated that the rate of burnout in emergency department nurses is higher than in nurses working in the other hospital wards and even intensive care units [60-61]. In emergencies situations where patients

need acute and urgent care, nurses are more likely to simply experience subsequent stress and burnout. Fatigue, lack of time, care in stressful situations, and the possibility of more mortality of patients impose more stress on nurses working in emergency departments [62]. Working on road bases, low number of ambulances in urban areas, type of base structure as Conex and its inappropriateness for rest, and lack of some equipment and facilities inside the base are the most common external stressors in pre-hospital emergency workers [63]. In this study, burnout was reported as Low in 4 studies [36, 40-39 and 42], as Moderate in 17 studies [31-35, 37, 41, 43, 45-46, 48-53 and 55] and as High in 4 studies [29-30, 44 and 54] (Table 2). Different results of the prevalence of burnout in emergency medicine, nurses and physicians of emergency department and emergency medicine residents can be due to several reasons. One of the reasons can be due to work differences in hospitals in different regions. Flynn's study (2009) in the US hospitals showed that high workload was the most important cause of nurses' burnout [64]. The results of studies conducted in Iran also illustrated that factors such as lack of essential resources and high workload

had been the most common causes of stress and burnout in nurses, which is the most important factor preventing burnout is managerial support [65]. Different working conditions and related factors can play an effective role in burnout depending on the organizational, interpersonal, and intrapersonal factors [66]. Maslach *et al.* express the factors causing this difference in job burnout in different countries and even at the national level such as culture, individual responses to self-assertion questionnaires, and how to assess self-personal accomplishment in different societies, and cultures which have learned in their local ones [67]. The results of this study demonstrated that there was a significant relationship between age and burnout in 12 studies [29, 32, 35, 37, 40, 43, 45, 48 and 50-52 and 54], 9 studies reported no significant statistical association [36, 39, 41-42, 46-47, 49, 53, and 55]. It seems that with aging, clinical experience increases and they have a higher ability to judge and solve their problems, making their burnout less [68]. Likewise, with increasing age of personnel, their work experience increases, however, they are better able to adapt to new conditions. The results of this study showed that there was a significant relationship between work experience and burnout in 15 studies [29, 32-33, 35, 37, 41-39, 43, 45 and 42-48], 3 studies reported no significant statistical association [42, 46 and 53]. Demir concluded that more work experience, confrontation with stressful situations, and increased level of education reduced burnout [69]. It seems that increasing work experience is associated with decrease burnout rate. Consequently, considering the effect of less work experience on increasing burnout, it seems that head nurses' attention to junior employees, establishing more plentiful social relationships and developing job training and job security programs can help to reduce the depression level of these employees and prevent their withdrawal and isolation. The results of this study showed that there was a significant relationship between Literacy and burnout variables in 12 studies [29, 32, 35, 37, 41, 43, 45-46, 48, 50-51, and 53]., there were 7 studies with no statistically significant relationship [33, 36, 39,

47, 49, 52, and 55]. The results of various studies indicate that nurses with low education due to inefficiency in situations related to patients' clinical conditions, experience a higher rate of burnout than nurses with higher education [70-71]. It seems that the significant relationship between burnout and education in emergency medical staff can be since according to the culture and views of the community, the role of the emergency center is merely to transport the patient to the hospital, and emergency staff is referred to as ambulance driver and Patient's assistance as well as possible abuses for the treatment of non-emergency patients at home, there is a kind of negative attitude towards this profession, reluctance, lack of interest and dissatisfaction with the job, and reduced self-confidence in people with higher education. The above reasons lead to more lack of personal accomplishment in people with higher education than in lower education, because they feel more potential for patient care and treatment due to higher education [33]. The results of the present study showed that there was a statistically significant relationship between the variables of marital status and burnout in 11 studies [29, 33, 35, 39, 43, 45, 49-48, 51, and 53-54] and 5 studies were reported no statistically significant relationship [37, 40-41, 46, and 52]. It seems that young people who are not yet married feel more vulnerable to job burnout. This indicates the important role of family support of individuals in efficiency and positive feeling of self-empowerment which can reduce job burnout [72]. In general, staff working in hospital and pre-hospital emergencies due to the type of services which the community expects from them; that is, saving the lives of people who are a few steps away from death are important assets of society; therefore, their productivity can be increased by reducing burnout [33].

Conclusion

The results of the present study indicate a significant relationship in most studies between work experience and burnout. Considering the moderate prevalence of burnout in the emergency department of hospital and Pre-hospitals, It seems that health planners and policy makers by

adopting appropriate methods and techniques such as increasing welfare facilities, providing manpower, reviewing the job descriptions of different categories of nursing, supporting managers and increasing the participation of nurses in the decision-making process, increasing dialogue sessions between managers and nurses, and training problem solving skills to prevent this phenomenon.

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Authors' contributions

Based on the recommendations of the international Committee of Medical Journal Editors, all authors met the criteria of authorship.

Conflict of Interest

We have no conflicts of interest to disclose.

ORCID:

Ali Ravaghi

<https://www.orcid.org/0000-0003-0564-609X>

Roohie Farzaneh

<https://orcid.org/0000-0002-0892-1555>

Farhad Bagherian

<https://orcid.org/0000-0001-9760-2611>

Samaneh Abiri

<https://orcid.org/0000-0002-0224-5672>

Hossein Hakimelahi

<https://orcid.org/0000-0001-7987-6686>

Fatemeh Maleki

<https://orcid.org/0000-0002-6823-5151>

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