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Abstract

Highly challenging and unpredictable conditions in clinical setting impose excessive psychological pressure on employees who are working in these sectors. Such conditions can lead to serious consequences such as occupational burnout. This study aimed to determine the level of occupational burnout in clinical nurses and emergency technicians. This cross-sectional study was conducted on 154 clinical nurses and 114 emergency technicians in 2015. In this study we used two data collection tools including Maslach burnout Inventory and a demographic questionnaire. Data were analyzed using Pearson correlation coefficient and independent t-test. The majority of employees in both groups had a moderate level of occupational burnout (in all aspects). Emergency technicians had higher levels of occupational burnout than nurses however except for emotional exhaustion there was no statistically significant difference between the two groups in terms of other dimensions and the total score. Moreover, occupational burnout in both groups had a significant positive correlation with age and work experience. Work hours had a significant relationship with occupational burnout in nurses, but it had no significant relationship with occupational burnout in emergency technicians. Concerning occupational burnout, there was only a significant difference between the two groups in terms of emotional exhaustion. However given the prevalence of this syndrome in both groups, it is necessary to identify and modify the influencing factors so that to control the syndrome and achieve a better level of work quality.

Keywords: Occupational burnout, nurses, emergency, technicians

Introduction

Working in a healthcare setting is always associated with a high prevalence of stressors such as exposure to intense illnesses, death of patients, and high volume of workload (1) and employees working in healthcare sectors are frequently faced with physical, mental, and emotional stresses and thus are exposed to occupational burnout (2). Occupational burnout syndrome that occurs in response to the work pressures is defined as a process in which the behavior and attitude of employees towards their work are negative and pessimistic (3). When no measure is taken and no plan is designed and implemented to reduce or prevent this syndrome, it can lead to the loss of work quality and performance and threaten people's physical and mental health (4). Occupational burnout in medical jobs can result in displacement, loss of productivity, increased health care costs (5), loss of interest and positive attitude toward clients and inappropriate and non-affectionate delivery of health care services (6, 7), dissatisfaction with work, tendency to quit the job (8), and increased frequency of sickness absence from work (9). Nursing is a stressing job and nurses are vulnerable to occupational burnout (10) and this can result in increased absenteeism, reduced energy, reduced work efficiency, and reduced quality of care services (11). Occupational burnout can be one of the main factors involved in decreasing efficiency, loss of human power, and the emergence of physical and mental problems in nurses (12). Given the nature of works performed by emergency technicians, they are also faced with a lot of physical and psychological pressures that may affect their health and quality of work. Because of management factors and working conditions of emergency technicians, their stress is more severe than the other groups (13). Given the highly tense condition of pre-hospital environment, these people are expected to be faced with job stresses and its consequences such as occupational burnout. So far, no study has been conducted to compare nurses and pre-hospital emergency technicians in terms of occupational burnout. The majority of previous studies have examined occupational burnout in various medical groups separately. For instance, the results of a study by Garrosa et al (2008) in Spain showed high levels of occupational burnout in all the three dimensions among the nurses working in hospitals (14). In addition, Wingenfeld's study In Germany in 2009 (15), Shimomitsu's study In Japan in 2003 (16) and several studies in Iran (17-19) have reported the prevalence of the syndrome among nurses. In addition, a study by Kalemglu and Keskin (2006) showed that 32.5% of emergency health care workers were under stress and 44.7% suffered from emotional exhaustion, 33.2% from depersonalization, and 28%

from lack of personal accomplishment (20). In Adali's study (2002) in Greece it was shown that nurses who were working in emergency wards suffered from higher levels of stress and subsequent occupational burnout, as compared with other nurses (21). In Bozorgi et al.'s study (2014), emergency technicians suffered from severe occupational burnout in terms of depersonalization, and they had moderate occupational burnout in terms of emotional exhaustion and lack of personal accomplishment (22).

Therefore, given the significant differences in the nature of works performed in different sectors of the health system, it is important not only to study occupational burnout in every sector separately but also compare and assess different dimensions and factors related to this issue. As no study has compared the two mentioned groups so far, this study aimed to compare nurses and emergency technicians in terms of occupational burnout.

Material and methods

In this cross-sectional study a total of 114 emergency technicians and 154 clinical nurses working in Imam Hossein (AS) Hospital in the city of Shahroud were studied in 2015. Inclusion criteria for Nurses were the followings: having at least a bachelor degree, at least one year of experience of working as a clinical nurse in an inpatient ward, at least six months of continuous work experience in that ward. The pre-hospital study samples included employees who had at least high school diploma and had at least one year of experience of working as an emergency technician in Medical Emergency Center in Shahroud County. Using census method, the eligible samples from the two groups of employees were selected. The objectives and nature of the research were explained and the subjects were assured about the confidentiality of collected data. Then, informed consent was obtained from the participants. The required data was collected through self-reports; hence, the participants were asked to complete the questionnaire whenever they had enough time.

In this study we used two data collection tools. The first one was a form designed to collect demographic information and data on job-related factors (age, education, marital status, work experience, average working hours per month). The second tool was the standard Maslach burnout inventory which included 22 items (personal analysis: 9 items, depersonalization: 6 items, and lack of personal accomplishment: 7 items). This questionnaire is the most common tool for the measurement of occupational burnout which can be used for different people with

different occupational history (23). It can be also used for researches on occupational burnout among Iranians who speak Persian (24). Using this tool, the frequency of each item of occupational burnout is measured using a 6-point scale (0 = never, 6 = every day), and the severity of each item is measured using a 7-point scale (0 = never, 6 = very severe). Table 1 shows how each dimension of occupational burnout is scored.

Statistical analysis

After completing the questionnaire, the collected data were analyzed using descriptive statistics (mean, standard deviation, relative and absolute frequency) and analytical tests including Pearson correlation coefficient, independent t-test, and ANOVA.

Results

The mean age of the staffs (nurses and emergency technicians) was 31.92 ± 5.61 , the majority of studied nurses were female (81.8%), married (46.1%), Civil servant or Contract employee (75.3%). In addition, all the studied emergency technicians were male and most of them were married (70.2%) and contract employee (51.8%). In the past, demographic and job information related to emergency technicians under this study has been published (25). Based on the data collected in this study, there was no significant differences in demographic and job variables of the two groups.

Table 1: Method of scoring each of the dimensions of occupational burnout

Burnout dimensions	Level	Score	
		Frequency	Severity
Emotional exhaustion	Low	≤ 17	≤ 25
	Moderate	18 – 29	29 - 39
	high	≥ 30	≥ 40
Depersonalization	Low	≤ 5	≤ 6
	Moderate	6 – 11	7 - 14
	high	≥ 12	≥ 15
Lack of personal accomplishment	Low	≤ 40	≤ 36
	Moderate	34 - 39	37 - 43
	high	≥ 33	≥ 44

The frequency of occupational burnout in terms of emotional exhaustion was high in emergency technicians. However, the frequency and severity of occupational burnout in terms of other dimensions were in a moderate level in both groups of nurses and emergency technicians. The results of independent t-test showed a significant difference between the two groups in terms of emotional exhaustion, but the results showed no significant difference between the two groups in terms of depersonalization and lack of personal accomplishment. Moreover, there was no

significant difference between the two groups in terms of the total score of occupational burnout (Table 2).

Table 2: Comparison of the two groups of nurses and medical emergency technicians in terms of occupational burnout

Occupational burnout		mean \pm SD		P_value
		Nurses	Technicians	
Frequency	Emotional exhaustion	26.25 \pm 15.21	28.12 \pm 15.36	0.042
	Depersonalization	8.25 \pm 6.24	8.46 \pm 6.25	0.781
	Lack of personal accomplishment	34.75 \pm 13.56	36.18 \pm 14.76	0.236
	Total score	69.25 \pm 26.45	72.76 \pm 28.23	0.292
Severity	Emotional exhaustion	37.42 \pm 15.39	41.35 \pm 16.43	0.014
	Depersonalization	10.89 \pm 5.37	11.33 \pm 5.54	0.214
	Lack of personal accomplishment	37.47 \pm 14.52	38.32 \pm 14.16	0.382
	Total score	84.78 \pm 30.52	90.99 \pm 32.44	0.441

According to the results of analysis of demographic data, age and work experience had a significant positive correlation with occupational burnout in both groups of nurses and emergency technicians. Accordingly, with increasing the subjects' age and work experience, we observed an increase in occupational burnout in both groups. There was also a significant positive correlation between working hours and occupational burnout of nurses; however, in emergency technicians these two variables had no significant correlation with each other (Table 3).

Table 3: Correlation between the frequency and severity of occupational burnout and age, work experience, and working hours of the studied subjects

Variable	Occupational burnout			
	Frequency		Severity	
	Nurses	Technicians	Nurses	Technicians
Age	$r = 0.32$	$r = 0.42$	$r = 0.29$	$r = 0.38$

	$p = 0.025$	$p = 0.001$	$p = 0.001$	$p = 0.001$
Work experience	$r = 0.23$ $p = 0.014$	$r = 0.17$ $p = 0.012$	$r = 0.14$ $p = 0.015$	$r = 0.07$ $p = 0.164$
Monthly working hours	$r = 0.11$ $p = 0.028$	$r = 0.02$ $p = 0.652$	$r = 0.10$ $p = 0.032$	$r = 0.10$ $p = 0.341$

Discussion

The results of this study showed that the majority of nurses and emergency technicians had a moderate degree of occupational burnout in its all different dimensions. Some other studies in Iran have also reported the prevalence of occupational burnout in majority of nurses (18, 19). In Verdon et al.'s study (2008) the majority of studied nurses reported some degree of occupational burnout (26) which is consistent with the results of our study. On the other hand, the results of some studies are inconsistent with the results of the present study. In Pálfiné's study (2008) which was conducted in Hungary, of a total of 374 nurses working in intensive care units, only 9.4% reported occupational burnout (27). According to a study by Kleber and Van Der Ploeg (2003), occupational burnout was observed only 1.9% of nurses (28). In addition, according to the results of Payne's study (2001) in England, the rate of occupational burnout in nurses was reported to be low (29). To justify this, it can be said that burnout is affected by different work conditions and work-related factors. The reported level of burnout might be under the influence of culture, individual responses to self-reported questionnaires, a person's evaluation of its own personal accomplishments in a community, and cultural factors learnt at a local setting (18).

We compared nurses and emergency technicians in terms of occupational burnout and the results showed that, except for emotional exhaustion, there was no significant difference between the two groups of nurses and emergency technicians in terms of other dimensions (depersonalization and lack of personal accomplishment) and the total score of burnout. We did not find any study comparing the two groups however we found several studies that have addressed this issue in

each group separately. The results of Popa et al.'s study (2010) in Romania showed that the level of occupational burnout in employees working in medical emergency sector was lower than that in other occupation groups such as physicians working at emergency ward and ambulance, nurses working at emergency ward and ambulance, and ambulance drivers (30). In addition, Van Der Ploeg and Kleber (2003) reported that emergency personnel working at crisis or events were seriously faced with the risk of occupational burnout (28). In a study by Aqajani (2012) it was reported that people working in emergency ward are exposed to more stresses and negative excitements because they are more encountered with accidents and medical emergencies and are in charge of helping injured people. Such stresses and negative excitements, over time, provide a ground for the emergence of occupational burnout (31).

Concerning the emotional exhaustion dimension, the results of the study showed a significant difference between the two groups of nurses and emergency technicians. According to Maslach et al., emotional exhaustion is the main dimension of occupational burnout and is the most important characteristic of this complex syndrome. In fact, from among the three substructures or components of occupational burnout, emotional exhaustion is the most reported and analyzed component (32). The results of a study by Khaghanizade et al (2008) showed low levels of emotional exhaustion in nurses (33). In a study by Čubrilo-Turek et al. (2006) which was conducted on employees working in intensive care units in Croatia, the results showed moderate levels of emotional exhaustion (34). In studies by Kleber and Van Der Ploeg (2003) (28) and Losa Iglesias et al. (2010) (35) nurses reported high levels of emotional exhaustion. In a research conducted by Khatibian et al. (2012) in Hamedan, emergency technicians reported moderate level of emotional exhaustion (36). In Popa et al.'s study (2010), Although emergency technicians had lower levels of emotional exhaustion than the other professional groups (30) it was found that emotional exhaustion of the employees could be affected by the development of interpersonal relationships and control and changes in factors such as work hours and shifts (37). There was no significant difference between the two groups of nurses and emergency technicians in terms of depersonalization dimension of occupational burnout. Reduced self-esteem, reduced level of job satisfaction, not bearing organizational responsibilities, increased mobility and resigning are among the negative consequences of depersonalization (38). In Khatibian et al.'s study (2012) depersonalization dimensions was at a moderate level in emergency technicians (36). In Iglesias et al.'s study (2010) (35) and Mirjana et al.'s study (2006) (34), the nurses

working in intensive care units reported a moderate level of depersonalization. Some studies have reported low levels of depersonalization dimension of occupational burnout in nurses (25, 33, 38), however Kleber and Van Der Ploeg (2003) reported high levels of depersonalization in nurses (39) which, in general, might be attributed to different job conditions and their important effects on these dimensions.

In this study, there was no significant difference between the two groups of nurses and emergency technicians in terms of lack of personal accomplishments. The two groups reported moderate levels of lack of accomplishment. This dimension of occupational burnout may worsen as the result of negative attitudes towards the jobs and its own condition, lack of interest toward job, lack of satisfaction with the job, and lack of self confidence (40). The results of studies by Lopez et al. (2005) (38) and Khaghanizade et al (2008) (33) showed high levels of occupational burnout which were due to the lack of personal accomplishments. On the contrary, the results of Jamali Moghadam and Solaimani's study on nurses (2010) (25) and Khatibian et al.'s study on emergency technicians (2012) (36) showed low levels of this dimension. Rasolian's study on occupational burnout showed a moderate level of lack of personal accomplishment (41) that is consistent with the results of this study.

In this study, age had a significant positive correlation with the total score of occupational burnout in both groups of nurses and emergency technicians, as older employees reported higher levels of occupational burnout. According to the results of studies by Lin et al. (2009) (42) and Spooner-Lane (2004) (43), there was a negative correlation between age and the dimensions of occupational burnout as younger nurses reported higher levels of occupational burnout. It seems that with aging, employees find ways to cope with these problems on their own and over time they become more able to deal with bad conditions. Consistent with the results of our study, the results of Shahnaz doost et al. (2010) showed with increasing age, nurses suffered from higher levels of emotional exhaustion (44). Stress and psychological pressure could have damaging effects on medical staff in the long run. Given the higher pressure of tasks in the emergency ward, this damaging effect may become more significant.

In addition, there was also a positive and significant correlation between work experience and occupational burnout. According to the staffs in both groups, with increasing the work experience, staffs suffered from higher levels of occupational burnout. It is inconsistent with the results of some researches in this area which have reported a negative correlation between these

two variables. For instance, in two studies on nurses, with increasing work experience, the studies staffs have reported lower levels of occupational burnout (45, 46). In a study by Goldberg et al. no significant relationship was observed between the work experience and occupational burnout (47). Probably in our study the daily exposure to stressful situations over time led to higher levels of burnout in studied nurses and emergency technicians.

There was a positive significant relationship between working hours and occupational burnout in the nurses, but there was no significant relationship between these two variables in the emergency technicians. Ozyurt et al.'s study (2006) showed that reducing working hours, not working on consecutive shifts, and designing recreation programs for the staffs can prevent the occurrence of occupational burnout (48). In Park et al.'s study (2005), there was a significant relationship between average working hours per week and occupational burnout in nurses (49) that is consistent with the results of our study. When the working hours are too long, nurses or emergency technicians are forced to be in the stressful environment for longer periods of time; such a condition could increase the risk of occupational burnout.

The results of our study showed no significant difference between the two studied groups in terms of occupational burnout however occupational burnout was moderate in both reports. Occupational burnout is one of the main factors which reduce employees' efficiency and cause mental and physical complications for the staffs working in the field of health care (50). Moreover, shift work and rotating shifts disturb the normal pace of life (51) and ultimately lead to occupational burnout (52). In fact, inability to match or encounter emotional and occupational stresses for a long time, and frequent and extra use of energy and resources could result in a feeling of failure, emotional exhaustion, and fatigue (53). Delayed diagnosis of occupational burnout or lack of solutions to prevent or reduce it, not only decreases the work quality and performance of a person, but also jeopardize the physical and mental health of employees. Therefore, it is necessary to conduct more comprehensive studies to investigate this problem among the staffs working in different sectors, so that to design new strategies and help the authorities to make new policies. Our study had some limitations which prevented us to obtain more precise results, for instance the number of participants was low and the questionnaire was completed via self-reports.

Conclusion

In this study, both studied groups had moderate level of occupational burnout and there was no significant difference between the two groups of nurses and emergency technicians. Health service providers must be healthy both physically and mentally; hence it is of great importance to study the problems and challenges faced by employees in various sectors. The authorities must identify the factors and difficulties of this group of employees and design strategies and supportive plans to modify some of the factors influencing work conditions. They must design programs for different groups of employees to prevent or reduce the symptoms of occupational burnout. For instance they can design and implement applied and practical programs such as reducing the working hours, investigating the causes of discontent and tension in the workplace, and improving welfare facilities in order to increase the quality of work and increase employees' physical and mental power.

Limitations of the study

Among the limitations of the study was its small sample size which limits the generalizability of its findings

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Author contributions

All the authors have accepted responsibility for the entire content of this submitted manuscript and approved submission

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