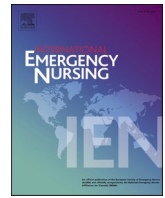




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Occupational stress and its relationship with spiritual coping among emergency department nurses and emergency medical services staff

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ABSTRACT

Introduction: Emergency Department (ED) nurses and Emergency Medical Services (EMS) Staff are faced with several stressors daily, such as the COVID 19 pandemic situation, which affects the health and the quality of services to patients. Spiritual coping with stress is an attempt to overcome the stress on the basis of what is transcendent. The use of spiritual coping strategies helps a person to overcome tensions caused by the work environment.

Objective: The current study aimed to investigate occupational stress and its relationship with spiritual coping among ED nurses and EMS staff.

Materials and methods: This study was descriptive-correlational research. Using convenience sampling methods, 516 ED nurses and EMS staff were enrolled in the study. The study instruments included demographic information, HSE Occupational Stress, and spiritual coping questionnaires. Data were analyzed using SPSSv.22 software and the descriptive statistics, Pearson correlation test, *t*-test, ANOVA, and multiple linear regression.

Results: The highest and lowest levels of occupational stress were the dimensions of “demand” (2.96 ± 0.65) and “role” (3.89 ± 0.81) respectively. Multiple linear regression analysis showed that positive spiritual coping, negative spiritual coping, workplace, service location, type of employment, and work position were important factors affecting the occupational stress of ED nurses and EMS staff, which accounted for 0.34% of the variance.

Conclusion: The findings showed the need to improve the work environment for ED nurses and EMS staff, including changes in physical working conditions, salaries, and better employment conditions. Training programs are recommended to reduce stress through the use of positive spiritual coping strategies.

1. Introduction

Occupation is an important part of life, as it can provide an income, self-esteem, an opportunity for personal growth, and social identity [1]. Nevertheless, work can also have a negative effect on one's health and expose one to stress [1]. Stress is the psychological result of an imbalance between perceptions of external desires and internal resources available to satisfy those desires [2]. Stress is the prevalent disease of the 21st century, affecting humans in different ways, and is responsible for 31% of diseases and absences of work among the personnel of health centers [3]. In addition to its adverse material effects, stress has a significant influence on personnel, their families, and patients [4]. One stressor that most people face is workplace stress, which is called occupational stress [4]. Occupational stress is defined as a psychophysical reaction that occurs when job demands exceed a person's

ability or resources to cope or over-meet their needs [5]. Occupational stress is both an emotional and a physical condition that can have devastating effects and is often caused by one's inability to provide the needs, resources, and abilities required by an employee [6].

In recent years, occupational stress and its outcomes have become a global health problem in occupational health, because stress is a fundamental challenge for health institutions [7]. Nurses experience more stress and pressure in their workplace, which can affect their mood, discourage them and lead to depression [8]. The reason for this can be related to the nature and quality of the nursing job, because a nurse in the workplace faces issues such as life and death, human health and recovery, which in themselves are quite stressful [9]. In our country, nurses comprise 80% of employees in the health system [10]. Moreover, 80% of the work is placed on the shoulders of nurses [11]. The occupational stress faced by nurses is likely to change due to massive changes

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in the environment, including the Coronavirus epidemic [12]. Health staff working in services such as the Emergency Department (ED) and Emergency Medical Services (EMS) are one of the vital assets of each country in case of critical cases such as the pandemic of COVID-19 [13].

Emergency departments are institutions that provide professional and emergency medical services to patients. These services have special features, and their quality is measured through different dimensions, including accessibility, safety, acceptability, efficiency, the effectiveness of performance, and continuity or durability of service [14]. Nurses in the ED confront excessive occupational stress, which can include factors such as the unpredictable number of patients at any time, rapid and unpredictable changes in patients, and injuries caused by accidents and conflicts [15]. Irregularity, unpredictable situations, high-atmospheric pressure, lack of control, and the limited amount of time available for evaluating the effectiveness of therapeutic interventions are stressors for nurses in the emergency department because patients referring to this section are usually in a critical state [16]. Emergency department nurses not only tolerate holistic psychological and physical pressures that dominate all parts of the hospital, but they also suffer some specific pressures, such as time urgency and exposure to the critical conditions of patients, which in turn create negative emotions in them [17].

Pre-hospital emergency care in Iran dates back to 1975 when the first emergency care unit was established in the capital Tehran [18]. After that, pre-hospital emergency care departments, including urban and road centers, were gradually established in other provinces of Iran [18]. EMS employees have an associate's or bachelor's degree in emergency care, and nurses have a bachelor's or master's degree [18]. Two staff members must be present in each shift [18]. EMS personnel are often the first individuals exposed to different emergencies ranging from heavy vehicles accidents and natural disasters to minor injuries and diseases [19]. As a result, these people usually face significant professional stress [19,20]. Time limitations for treatment, a patient's critical situation, the expectations of the patient's companions, the openness of the workplace, fear of being unable to save a dying patient, decision-making power in critical conditions, and factors related to human resources all lead to conditions that create tension in the medical emergency system [21]. One important strategy for reducing occupational stress is to identify stressors [10]. Having the right tools to measure occupational stress is the first and most important step in identifying the factors that affect it [1,8]. Different questionnaires have been introduced to evaluate mental stress [22]; the World Health Organization has introduced a tool provided by the Health and Safety Executive (HSE) as a credible tool for evaluating occupation stress [23]. Because of the inevitability of some stressors in the nursing profession and the need to prevent the psychological and behavioral effects of these factors on nurses, it is the duty of health managers to improve the quality of life of the employees, by providing training spiritual coping [24]. These strategies are effective in helping people deal with stress [25]. Spiritual coping is also an effective strategy for coping with stress and is used in different countries of the world to help people control their stress [25].

Charzyńska divides spiritual coping into positive and negative types. In her opinion, positive spiritual coping means cognitive and behavioral efforts aimed at resolving difficult situations [26]. Some samples of spiritual coping with occupational stress in nurses include prayers and worshipping, which are considered to be positive [27,28]. Spiritual coping is associated with a positive attitude and sacrifice towards a particular religion or action. Also, reading holy books or prayers is known as a successful practice in managing occupational stress [25].

Some positive samples of spiritual coping with job stress, such as meditation, which is widely practiced in India, can increase self-esteem, awareness and general health, and reduce stress and blood pressure. [29]. A positive spiritual coping with stress strategy used by Muslim nurses involves reciting the Qur'an, praying, and doing good deeds [25]. Chow et al. showed in their study that positive religious coping plays an effective role in reducing stress, anxiety, and depression among health workers engaged in treating COVID-19 patients [30].

As occupational stress in health workers, including ED and EMS nurses, reduces yield and results in psychological and physical injuries and dissatisfaction with services, Recognizing the factors affecting job stress and spiritual coping strategies reduces the severity of the destructive effects of stress on the health system [25]. Also, since the concept of spiritual coping is new and has recently entered the literature on coping with stress, the present study investigated job stress and its relationship with spiritual coping in emergency nurses and EMS personnel.

2. Materials and methods:

2.1. Methods

This was a descriptive correlation study, and its statistical population consisted of all ED nurses and EMS staff in Ardabil province. University of Medical Sciences consists of all EDs and EMS services, and it has 52 EMS centers and 10 hospital emergency departments. The EMS providers in Iran comprise a combination of nurses and EMS technicians. Inclusion criteria included: 1) ED nurses and EMS staff with at least 6 months of clinical work in ED and EMS centers; 2) Employed at the time of the study or having returned to work at least one week before completing the questionnaire; 3) Having no history of physical or mental illness or any cognitive impairment as self-reported. Incomplete questionnaires were excluded from the study. A convenience sampling method was adopted to select the sample. Eligible for inclusion were 364 emergency medical service staff members, comprising 221 intermediate and 143 paramedics, 27 emergency nurses of the dispatch center, and 430 emergency nurses. Initially, the researchers obtained a permit from the Ethics Committee of the University of Medical Sciences and received a letter of recommendation from the Vice Chancellor for Research. The letter was presented to the officials of EMS centers and educational hospitals in Ardabil province, and then the researchers referred to 10 teaching hospitals and all EMS centers in Ardabil province and were introduced to emergency nurses and EMS staff by the nursing offices of the mentioned centers and EMS officials. Before sampling, a short introduction of the study design and purpose was presented to prospective participants. The paper version of the questionnaire was then distributed among the participants by the researchers. Data was collected from January 5th to March 5th, 2021. Ultimately, 129 intermediate staff, 72 paramedic staff, 18 emergency nurses of the dispatch center, and 297 hospital emergency nurses for a total of 516 people were enrolled in the study.

The data collection tools were a demographic information form, occupational stress questionnaire of HSE, and Charzyńska Spiritual Coping Questionnaire (SCQ).

A demographic information form was included which consisted of questions relating to age, work experience, sex, marital status, educational level, Service location, workplace, Type of employment, income, work position, average overtime per month, and the number of nights shifts in the last month.

2.2. Occupational stress questionnaire of HSE

The HSE standard questionnaire is a tool that we used in our study to determine stress levels. The questionnaire was developed by the UK Health and Safety Executive in the late 1990s to assess workplace stress in workers and employees in the UK [22]. This questionnaire has 35 items and 7 areas that include: 1. Role (proper understanding of the role of personnel in their organization) with 5 questions, 2. Relationship (enhancing positive traits to increase social connections and reduce workplace conflicts) with 4 questions, 3. Managerial support (the amount of support a person receives from the management) with 5 questions, 4. Peer support ((the amount of support a person receives from their colleagues) with 4 questions, 5. Control (How much say the person has in the way they do their work) with 6 questions, 6. Demand

(which includes issues like workload, work patterns, and the work environment) with 8 questions, and 7. Changes (how to organize and change the forces of an organization) with 3 questions. The questions of this questionnaire include a five-point Likert scale (from never: 1 to always: 5). It should be noted that questions 3, 5, 6, 9, 12, 14, 16, 18, 20, 21, 22, and 34 are scored in reverse. A high score in this questionnaire indicates low and appropriate occupational stress, and a low score indicates a high level of stress [23]. The final stress score is divided into 4 categories below according to this questionnaire. A score lower than 1.5 as a high level of stress, 1.5 to 2.5 as a moderate level of stress, 2.5 to 3.5 as low stress, and score are higher than 3.5 as without stress [31]. Validity and reliability of the Persian version of the HSE occupational stress questionnaire were carried out in Iran and its Cronbach alpha has been 0.78 [32]. Cronbach's alpha of the Occupational Stress Questionnaire of HSE in this study was 0.76.

2.3. Spiritual coping questionnaire (SCQ)

One of the lasting tools used to deal with stressful situations in different countries of the world is spiritual coping [25]. For the first time, this questionnaire was made by Charzyńska to evaluate the spiritual coping strategies of religious and non-religious people in coping with stressful situations [26]. The SCQ tool has 32 questions and scores on a five-point Likert scale of 1 (completely incorrect) to 5 (completely correct). In the study of the standardization of the spiritual coping questionnaire Khodayarifard et al., in Iran, a six-point Likert scale (1 = completely incorrect, 6 = completely correct) was used for scoring [27]. In this study, a six-point Likert was used. The scores of each of the seven subscales are calculated with the average response to questions specific to each subgroup. The questionnaire includes positive spiritual coping total and negative spiritual coping total. The positive spiritual coping total consists of four subscales, including personal subscales (four items, for example, "I tried to find a reason for what happened."), social subscales (six items, for example, "I was compelled to the pain and suffering of others"), environmental subscales (five items, for example, "looking to go to the lap of nature"), and religious subscales (six items, for example, "In my relationship with God, I followed the power of living"). The negative spiritual coping consists of three subscales: personal (four items, for example, "I convinced myself that my life is meaningless"), social subscales (four items, for example, "I convinced myself that other people are full of evil") and religious subscales (three items, for example, "I blame God for what happened in my life"). Cronbach's alpha for positive and negative spiritual coping in the study of Charzyńska [26] was 0.92, 0.82, respectively, in the study of Khodayarifard et al. [27] was 0.84, 0.90 and in this study, it was obtained as 0.94 and 0.93.

This study is approved with an ethical code of by the Ethics Committee of University of Medical Sciences. This is a standard process of any study. Before the implementation of the study, written informed consent was obtained after providing necessary information verbally and information sheet that included, subject right to withdraw from the study at any stage, potential risks, and benefits, protect the vulnerability, privacy, and confidentiality. In this study, the standardized Persian language questionnaire was used with the author's authorization [27].

Data analysis was performed using descriptive and analytical statistics including independent *t*-test, Pearson correlation coefficient, one-way ANOVA, and multiple linear regression using SPSS v22 software.

3. Results

3.1. General specifications of ED nurses and EMS staff and their relationship with a total score of occupational stress

The overall response rate of this study was 62.8% (516/821). 60.3% ($n = 311$) of the samples were male, 58.9% ($n = 304$) were married and 83.9% ($n = 433$) had bachelor's degree. In addition, the mean and

standard deviation (SD) of age and work experience was 31.85 ± 6.437 (21–56 years) and 7.25 ± 5.697 years. 54.7% ($n = 282$) participants were working in Ardabil and 57.6% were working in ED. 61% (315) of the participant were nurses. The average annual income of 52.1% (269) of the samples was from \$ 2,200 to \$ 2,800 a year. 173 of the participants had overtime between 41 and 80 h and 221 persons had between 8 and 11-night shifts in their last month. The results showed that demographic variables, age, gender, work experience, marital status, level of education, workplace, type of employment, and work position had a statistically significant relationship with occupational stress of ED nurses and EMS staff ($P < 0.05$) (Table 1).

3.2. Descriptive statistics of occupational stress and its dimensions along with positive spiritual coping and negative spiritual coping

Up to 64.5% of employees experienced mild to moderate occupational stress. The mean and standard deviation of the total score of occupational stress was 3.33 ± 0.52 . The highest and lowest levels of occupational stress were the dimensions of demand (2.96 ± 0.65) and role (3.89 ± 0.81) respectively. The mean and standard deviation of positive and negative spiritual coping were 4.69 ± 0.77 and 2.80 ± 1.14 respectively, indicating that participants' coping strategies were mainly through positive spiritual coping and participants were less likely to use negative coping mechanisms (Table 2).

3.3. The relationship between occupational stress and positive spiritual coping and negative spiritual coping

Pearson correlation coefficient showed that the total score of Occupational stress and its subscales had a significant relationship with positive spiritual coping (excluding "relationship" subscale) and a significant inverse relationship with negative spiritual coping ($P < 0.05$). In other words, with increasing positive spiritual coping score, Occupational stress score decreases, and with increasing negative spiritual coping score, Occupational stress also increases (Table 3).

3.4. Predictors of occupational stress

Multiple regression analysis results indicating the predictors of occupational stress are shown in Table 4. A multivariate regression analysis was performed using occupational stress as the dependent variable, and general characteristics, positive spiritual coping and negative spiritual coping as independent variables. Of these 14 variables, sex accounted for 34% of the variance in the final model ($F = 17.810$, $p < 0.001$). Thus, the significant predictors of occupational stress were Positive spiritual coping ($\beta = 0.373$, $p < 0.001 = \beta$), workplace ($\beta = 0.163$, $p = 0.012$), negative spiritual coping ($\beta = -0.238$, $p < 0.001$), Work position ($\beta = -0.155$, $p = 0.011$), Service location ($\beta = -0.108$, $p = 0.005$) and type of employment ($\beta = -0.102$, $p = 0.045$).

4. Discussion

The current study purposed to investigate the level of occupational stress and its relationship with spiritual coping among ED nurses and EMS staff. The results showed that approximately two-thirds of the participants reported low-stress levels (3.33). This result was consistent with the results of previous reports [9,33,34]. However, Kakemam and Salehi [6,7], reported the stress level of nurses as moderate to high. The results of a study showed that 85% of emergency nurses experienced stress, and 75% reported at least one symptom of stress [35]. Another study showed that EMS staff experience a moderate level of job stress [36]. Also, another study found that 72% of EMS providers in the United States had a stressful job experience [37]. The differences are most likely due to the tools used and variations across the systems. Also, due to the fact that stress is completely dependent on the environment, working conditions and environments in previous studies can play a role in

Table 1

Descriptive statistics of participants and their relationship with the total score of occupational stress (n = 516).

variables	Mean-SD	n	(%)	Mean-SD	P-value
Age	31.85 ± 6.43			3.33 ± 0.52	r = -0.200p = 0.000
Work experience	7.25 ± 5.69			3.33 ± 0.52	r = -.180p = 0.000
Gender	male	311	60.3	3.40 ± 0.03	t = 3.506
	female	205	39.7	3.23 ± 0.03	p = 0.000
Marital Status	single	212	41.1	3.43 ± 0.03	t = 3.386
	married	304	58.9	3.27 ± 0.02	p = 0.001
Educational levels	Associate	83	16.1	3.51 ± 0.05	t = 3.402
	Bachelor's	433	83.9	3.30 ± 0.02	p = 0.001
Service location	Ardabil City	282	54.7	3.32 ± 0.03	t = -0.530
	Countryside	234	45.3	3.35 ± 0.03	p = 0.596
Workplace	ED	297	57.6	3.24 ± 0.02	t = -4.719
	EMS	219	42.4	3.46 ± 0.03	p = 0.000
Type of employment	Projective	164	31.8	3.49 ± 0.55	F = 8.837
	Contractual	70	13.6	3.35 ± 0.44	p = 0.000
	contract	106	20.5	3.28 ± 0.49	
	official	176	34.1	3.21 ± 0.52	
Annual income (US \$)	1600–2200	44	8.5	3.38 ± 0.49	F = 2.110
	2200–2800	269	52.1	3.38 ± 0.54	p = 0.098
	2800–3600	175	33.9	3.27 ± 0.50	
	>3600	28	5.4	3.23 ± 0.54	
Work position	Emergency Nurse	315	61.0	3.29 ± 0.49	F = 5.275
	EMT-Intermediate	129	25.0	3.46 ± 0.56	p = 0.005
	EMT-Paramedic	72	14.0	3.30 ± 0.54	
over time	<40	117	22.7	3.39 ± 0.49	F = 0.918
	41–80	171	33.1	3.35 ± 0.55	p = 0.432
	81–120	147	28.5	3.30 ± 0.49	
	> 120	81	15.7	3.29 ± 0.56	
Number of night shifts in the last month	3≥	61	11.8	3.36 ± 0.45	F = 1.167
	4–7	178	34.5	3.31 ± 0.52	p = 0.322
	8–11	221	42.8	3.37 ± 0.53	
	≥ 12	56	10.9	3.23 ± 0.56	

increasing stress.

ED nurses and EMS staff are at the forefront of the health system, especially in times of crises and epidemics, such as the COVID-19 virus, in workplaces with high job demand and low resources [38]. Studies have shown that job stress can have devastating physiological and psychological effects on nurses and negatively affect their health [1,2,39]. effective strategies to reduce stress among healthcare workers and the causes and effects of job stress should be applied in

Table 2

Descriptive statistics the study variables (n = 516).

Variable	Mean	SD	Min	Max	Range
Total occupational stress	3.33	0.52	1.80	4.96	1–5
demand	2.96	0.65	1.00	5.00	1–5
control	3.36	0.69	1.00	5.00	1–5
Managerial support	3.27	0.81	1.00	5.00	1–5
Peer support	3.43	0.82	1.00	5.00	1–5
relationship	3.19	0.85	1.00	5.00	1–5
role	3.89	0.81	1.00	5.00	1–5
change	3.23	0.89	1.00	5.00	1–5
Positive Spiritual Coping total	4.69	0.77	1.00	6.00	1–6
Negative Spiritual Coping total	2.80	1.14	1.00	5.61	1–6

organizations.

Our findings showed that the highest level of job stress is related to the demand area (2.96), which was consistent with the results of previous studies [6,7,8,9,33]. The findings of these studies show that increasing the workload of nurses leads to job stress in them. In contrast, the results of Hosseinzadeh et al. showed that the highest and lowest levels of occupational stress in EMS personnel were related to the domains of role and demand [40]. Also, the results of the study by Mahdizadeh et al. indicated that workload issues did not cause psychological stress in EMS personnel [41]. The domain of demand includes issues such as workload, work patterns, and the work environment. In the study by Ibrahim et al., the highest stressful factor was identified as workload [25]. The increasing number of patients and a lack of nursing personnel doubled the workload of nurses, and about three-quarters of nursing services remained incomplete due to the lack of nurses [42]. In this study, along with the results of other studies, the reason for the increase in job stress in the demand dimension may be due to the COVID-19 pandemic [43,44,45]. According to the results of Alizadeh et al., healthcare workers who were exposed to COVID-19 experienced certain conditions with different demands (nature of the disease, social and organizational demands) that caused them to be under a lot of stress [44]. The unknown nature of this disease, the lack of a definite treatment, the high risk of infection, and the fear of disease spread to others and its psychological demands caused severe discomfort among Iranian health care personnel [44].

The most desirable level of occupational stress was in the domain of role (3.89), which measured individuals' proper understanding from work in the organization. This result was consistent with the results of Jones et al. [9], but it was not consistent with the results of Hosseinzadeh et al. [40]. Therefore, it seems that emergency nurses understand their roles and responsibilities and recognize their duties, the goals and views of their organization, and their expectations of them at work. It can be said that nurses have tolerated many hardships since the start of the COVID-19 pandemic. They have overcome the fear of infection and provide nursing services because of their loyalty, mission, and professional commitment [46].

Our findings revealed a significant statistical relationship between age and work experience with occupational stress (p < 0.001). Results of the present study were consistent with previous studies [47,48] and it was not consistent with the results of other studies [6,7,9]. It can be said that as the age and experience of people increases, the ability to adapt and tolerate stressful conditions is reduced and occupational stress increases. Furthermore, increased stress may occur at the highest level in older nurses because of burnout due to age and lower physical ability to work [48]. In terms of the relationship between marital status and gender with occupational stress (p < 0.002), the findings of this study were consistent with previous studies [1,49,50]. This result was not consistent with the results of other studies [6,7,34]. The mean occupational stress score was higher in female and married nurses than others, possibly because of the simultaneous responsibilities of work and family, such as a spouse, childcare, and job pressure, which can further enhance the severity of women's occupational stress [49,50]. Our findings

Table 3

Pearson correlation coefficients of Total occupational stress and their domains with total score of Positive spiritual coping and total score of Negative spiritual coping.

Variables	1	2	3	4	5	6	7	8	9	10
Total occupational stress	1									
Demand	0.365**	1								
Control	0.702**	-0.018	1							
Managerial Support	0.765**	0.070	0.525**	1						
Peer Support	0.813**	0.117**	0.535**	0.665**	1					
Relationship	0.553**	0.550**	0.145**	0.213**	0.298**	1				
Role	0.635**	-0.034	0.517**	0.358**	0.530**	0.154**	1			
Change	0.764**	0.123**	0.553**	0.647**	0.559**	0.206**	0.368**	1		
Positive spiritual coping	0.462**	-0.088*	0.435**	0.344**	0.395**	0.084	0.603**	0.326**	1	
Negative spiritual coping	-0.371**	-0.315**	-0.104*	-0.137**	-0.242**	-0.434**	-0.378**	-0.112*	-0.309**	1

*P < 0.05, **P < 0.01 1- Total occupational stress, 2- demand, 3- control, 4- Managerial support, 5- Peer support, 6- relationship, 7- role, 8- change, 9- Positive spiritual coping, 10- Negative spiritual coping.

Table 4

Multiple Regression Analysis Predicting occupational stress.

Variables	B	S. E	Beta	t	Sig
(Constant)	3.509	0.295		11.884	0.000
Positive spiritual coping total	0.255	0.027	0.373	9.442	0.000
Negative spiritual coping total	-0.109	0.018	-0.238	-6.124	0.000
age	-0.013	0.007	-0.160	-1.881	0.061
gender	-0.080	0.053	-0.074	-1.514	0.131
Work experience	0.011	0.008	0.118	1.364	0.173
Service location	-0.115	0.040	-0.108	-2.844	0.005
Marital Status	-0.068	0.047	-0.064	-1.452	0.147
Educational levels	-0.099	0.059	-0.069	-1.673	0.095
Workplace	0.174	0.069	0.163	2.527	0.012
type of employment	-0.043	0.021	-0.102	-2.011	0.045
Annual income	0.019	0.030	0.025	0.626	0.532
Work position	-0.112	0.044	-0.155	-2.562	0.011
over time	-0.026	0.023	-0.049	-1.095	0.274
N night shifts in the last month	-0.041	0.027	-0.066	-1.542	0.124

R2 = 0.348, F (17,810), P < 0.001 A Dependent variable: Total occupational stress.

revealed that level of education had a significant relationship with level of occupational stress (p = 0.001). Individuals with a bachelor’s degree had more stress than those with an associate’s degree, which was consistent with previous studies [8,51]. However, it was not consistent with the results of Kakemam, Salehi, and Pishgooie [6,7,52]. Although increasing one’s education increases one’s knowledge and skills, it is expected to improve the quality-of-service provision with the growth of people’s expectations [8]. More educated people are often in more challenging situations and perform more specialized tasks, which can increase occupational stress [51].

Multiple linear regression analysis revealed a significant relationship between work position and participants’ workplace with their occupational stress (p < 0.013), which was consistent with the study by Salehi et al. [7]. Our findings demonstrated that ED nurses tolerate more stress (3.24) than EMS personnel (3.46). In the literature review, no study was found that compared the occupational stress of ED nurses with that of EMS personnel. Therefore, similar studies are needed in the aforementioned sectors so that suggestions can be made with more confidence. The study of Kakemam [6] showed that the mean score of occupational stress in nurses in emergency departments (3.50) was higher than that of nurses in other wards (3.41). The emergency department is an environment that is rapidly changing and critical, and patients there have variable and unpredictable illnesses [53]. Due to the dynamic environment, ED nurses usually perceive a higher level of work stress [54]. Emergency nurses experience a lot of stress [54]. The results of multiple linear regression analysis showed that employment status was a predictor of occupational stress. In this study, occupational stress was higher in participants with official and contract employment than in projective and contractual staff. These findings are consistent with the results of Habib [15], which indicated that the stressful nature of the

nursing profession, along with the passage through different stages of changes of employment status, leads to intensified stressful conditions. This result was not consistent with that of Salehi et al. [7]. The multiple regression results showed that service location was one of the predictors of occupational stress, and emergency nurses and EMS personnel in Ardabil city showed more stress than in other the cities of the country. In reviewing the literature, no study was found to confirm this result. It can be said that considering that ED nurses and EMS personnel of provinces are exposed to more patients, particularly more critical patients, this factor can increase their occupational stress.

Only one study was found to examine the relationship between occupational stress and spiritual coping [25]. For the first time in Iran, our findings showed that occupational stress had a significant negative correlation with positive spiritual coping and a significant positive correlation with negative spiritual coping. Also, Emergency nurses and EMS staff stated that positive spiritual behaviors (religious strategy, positive social, personal and environmental behaviors, respectively) were the main strategies for coping with occupational stress. But they did not obtain a high score on negative spiritual coping scales (2.80). These results were consistent with the results of Ibrahim et al. [25], which showed that positive religious behavior was the main spiritual coping strategy with occupational stress in participating nurses (4.3). Moreover, our findings showed that positive spiritual coping (β = 0.373) was associated with decreased occupational stress, and negative spiritual coping (β = -0.238) was associated with increased occupational stress. In explaining these results, it can be said that people who use positive spiritual coping after exposure to stressful, threatening, and difficult living factors seek sense and meaning, focus on their inner life, try to overcome their weaknesses, obtain more self-awareness and more moral values, behavior, and search for peace and internal harmony (personal dimension); they create and maintain deep and valuable relationships with other people, pay attention to moral values, behave fairly with people, care for others, have a tendency to help, show love, empathy, and compassion (social dimension); they focus on feeling attachment and belonging to nature, understanding the coordination and order in it, behave with nature as a friend of human beings, are open to observing the miracles in nature (environmental dimension); and they maintain a strong relationship with God/superior power based on the sense of attendance, love, and trust (religious dimension) [25,26,27]. These coping methods act like bumpers and reduce stress and negative emotions caused by experiences or stressful, threatening, and negative life events [26]. Moreover, they prevent people from developing symptoms of anxiety or reduce the severity of symptoms [24]. Negative spiritual coping, however, can lead to the negation of the purpose and meaning of a person’s life, emphasizing the weaknesses and limitations of the individual and focusing on individual mistakes or violations (personal dimension); understanding people as inherently selfish creatures and caring for their interests that lead to hatred, hostility, or jealousy of others, preventing the creation and preservation of deep and valuable interpersonal relationships (social dimension); and a

personal religious challenge that appears as a grudge against God/the superior strength, and blame and deny Him [27]. Occupational stress is one of the important factors in physical and psychological complications in personnel and reduced productivity of organizations [1]. An efficient method for reducing the stress experienced by emergency nurses is providing training and promoting spiritual coping strategies [25].

5. Limitations

The present study had strengths and restrictions. The occupational stress and spiritual coping of emergency nurses and EMS personnel were evaluated for the first time in this study. Another strength of this study was the size of the sample and its statistical scope. The limitations of this study include its cross-sectional method. Hence, in the generalization of research results to other groups, caution should be observed. Performing longitudinal studies and research on emergency nurses and EMS personnel can provide more information on this subject. Spiritual coping is one of the structures for which respondents may refuse to express their internal thoughts for different reasons, or they may try to show themselves as more spiritual or religious than what they are. Accordingly, in all research on spirituality, attention to this fact is helpful in drawing conclusions and making generalizations. The present study measured variables using only self-reported pencil questionnaires which, in turn, can expose the results to bias. It is suggested that in future research, other assessment tools and methods such as interviews be used to attain more accurate and credible results.

6. Conclusion

The COVID-19 pandemic has increased job demand, reduced resources, and caused stress in ED and EMS emergency nurses, which can lead to slight and qualitative drops in health services [45]. Therefore, it is necessary to prevent stress complications by creating effective coping strategies. Positive spiritual coping is one of the effective tools for reducing stress levels, which requires furthering nurses' awareness about spirituality and how to use it as a means of reducing stress and improving one's overall health status [25]. All emergency nurses must have an opportunity to discuss their beliefs and clarify their doubts about spirituality and its role in stress management. Education and promotion of positive spiritual coping in nurses should be a priority of health policy makers. Providing an appropriate curriculum and on-the-job training to equip health care workers with knowledge and spiritual coping, especially in a caring environment, will be very valuable. Based on the findings of this study, frontline employees have the highest level of job stress in the dimension of demand between employees. Therefore, hospital and pre-hospital emergency managers can reduce their staff's stress levels by reducing workplace demand, such as reducing workload and improving the work environment. By reducing stress, staff health is maintained and improved, and the quality of care provided to patients increases. Further studies are recommended to test the relationship between the variables in the current study and other related variables.

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Ethical standards disclosure

The ethical code of this study is IR. ARUMS was REC.1399.459. The authors would like to thank the School of Nursing and Midwifery of Ardabil University of Medical Sciences for their cooperation in this study.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Author's contributions

All authors have participated in the ideation and design of the study. Alireza Mirzaei: The concept of study / design, helping to collect data, analysis, interpreting data and preparing a manuscript. Nasser Mozaffari with a detailed review of the proposal and article design. Aghil Habibi Soola Study design, data analysis, important reviews for important intellectual content, monitoring, administrative / technical / material support, final review. All authors read and approved the final version.

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