Comparison of Death Anxiety, Death Obsession, and Humor in Nurses and Medical Emergency Personnel in COVID-19 Pandemic

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Contribution to Emergency Nursing Practice

- What is already known about [death anxiety, death obsession, and humor in nurses and medical emergency personnel]: Work place stress has been reported by emergency nurses and emergency medical personnel.
- What does this paper add to the currently published literature? This study specifically examined death anxiety and obsession among emergency nurses and emergency nursing personnel during the period of the COVID-19 pandemic. Contributes to show the current knowledge and application of the science on COVID-19.
- What is the most important implication for clinical practice? Given the report of death anxiety and death obsession by emergency caregivers, further strategies are needed to support coping with workplace stressors.

Abstract

Introduction: COVID-19 has created numerous challenges for the health system. Nurses and medical emergency personnel are at the forefront of fighting COVID-19 and exposed to psychological disorders such as death anxiety and death obsession. Humor is a defense and coping mechanism against the anxiety and obsession associated with death. This study aimed to compare death anxiety, death obsession, and humor among nurses and medical emergency personnel during the COVID-19 pandemic.

Methods: This descriptive cross-sectional study was conducted with 230 nurses and medical emergency personnel. To collect data, the Templer death anxiety scale, death obsession scale, and humor styles questionnaire were used. SPSS 19 was used for data analysis. The significance level was considered at $P < .05$.

Results: Mean and standard deviation of death anxiety in the nurses and medical emergency personnel were 6.86 (4.04) and 5.68 (3.57), respectively; these values for death obsession were 29.82 (12.30) and 25.30 (12.66) and for humor 116.75 (30.87) and 118.48 (24.66), respectively. The nurses had significantly higher death anxiety (t = 2.33, $P = .02$) and death obsession (t = −2.68, $P = .008$) than the medical emergency personnel; moreover, there was no significant relationship among humor, death anxiety (r = .11, $P = .10$), and death obsession (r = .07, $P = .31$) in nurses and emergency personnel.

Discussion: The results of this study showed that the levels of death anxiety and death obsession were higher in the nurses

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than the medical emergency personnel. There was no significant difference between the hospital nurses and medical emergency personnel in terms of humor.

Introduction

In December 2019, a novel infectious disease called COVID-19 emerged; scientists identified that it was caused by a new type of coronavirus called SARS-CoV-2. The virus was first identified in Wuhan, China, and then turned into a pandemic in February 2020.[1] COVID-19 is acutely contagious and its symptoms usually include fever, dry cough, fatigue, gastrointestinal symptoms, and, in severe cases, acute respiratory syndrome, multiple organ dysfunction, and high mortality.[2] By August 7, 2021, more than 200 million people were infected, and more than 4 million people have died of this disease worldwide. In addition, the numbers of the infected and the dead are still increasing in Iran, and 93,086 deaths have been recorded until this time.[3]

The COVID-19 pandemic has created challenges for people in various professions; however, the emotional stress the health care staff has been facing is remarkably higher and may remain with them permanently.[4] Nurses and medical emergency personnel play a key role in providing care for patients during the COVID-19 pandemic[5,6]; they are also exposed to various psychological disorders owing to several stressors such as increased workload, an increase in the number of patients in need of critical care, frequent encounters with patients' death, and fear of being infected and transmitting the disease to their friends, family, and relatives; these stressors may impose psychological effects on them.[7] A wide range of psychological disorders such as stress, depression, and anxiety have been reported in health care staff during COVID-19.[8,9]

One psychological disorder health care staff may face is death anxiety.[10] Death anxiety is a multidimensional concept with emotional, cognitive, and experimental features and is defined as the feeling of anxiety or fear regarding the thought of death.[10] Death anxiety is the most crucial concern of human life and the core of all anxiety disorders. It is considered to be one of the most important factors of mental health.[11] Health care staff may experience death anxiety owing to frequent encounters with patients' death during COVID-19.[12] Furthermore, nurses and medical emergency personnel are at the highest risk of contracting COVID-19. Since the beginning of the disease, a large number of them have contracted the disease or passed away, thereby creating and increasing death anxiety among health care staff.[13,14] Ignoring death anxiety in medical staff may lead to unexpected and undesirable complications such as disorders in their performance, anxiety, depression, and suicidal thoughts.[10] In a study conducted by Yusefzade et al[15] in Iran, a significant relationship was observed between death anxiety and occupational burnout in medical emergency personnel. Death anxiety, a negative affective state that is incited by mortality salience, may be experienced by nurses and other health care workers who are exposed to sickness, trauma, and violence.[16]

Death obsession can be a symptom of severe death anxiety and lead to excessive mental efforts to control death, and this attitude toward death can be problematic.[17] Death anxiety can have negative effects on health care staff's performance and disrupt their relationship with patients.[18]

Different types of coping models and defense mechanisms are used against different types of death; one of these coping models is humor. Humor is a critical skill for coping with difficulties and refers to the quality of actions, speech, and writing.[19] Humor has a positive relationship with positive emotional states such as hopefulness, self-esteem, optimism, happiness, and joy, and a negative relationship with negative emotional states such as stress, depression, worry, hopelessness, compulsive obsession, phobia, and anxiety.[20] Humor improves the relationship between nurses and patients by creating a feeling of happiness and well-being.[21] Canestrari et al,[22] in their study in Italy during the COVID-19 outbreak, referred to humor as a potential factor in reducing perceived stress. In this study, health care workers who used more coping strategies based on humor experienced lower levels of stress and anxiety.

During COVID-19, health care staff are at risk of death anxiety and obsession owing to their frequent encounters with patients' and their coworkers' death, which can affect the quality of services they provide. Moreover, different medical environments affect the levels of death anxiety and obsession in health care workers. The emergency department is a community-based health management system that is connected to all health care systems, and its personnel are the most important assets of the system; their spiritual and mental peace significantly affects patients' improvement and service quality. Moreover, nurses play a salient role in providing health care for patients with COVID-19 at the forefront of fighting this disease, so analyzing death anxiety and obsession in those working in these environments during COVID-19 and assessing

strategies for reducing this anxiety, such as humor, are subjects of great importance. No study has been done in this regard so far; accordingly, the present study aimed to analyze death anxiety, death obsession, and humor in nurses and medical emergency personnel during COVID-19 in Iran.

Methods

STUDY TYPE AND SETTING

This study was a descriptive cross-sectional study. The study population included the nurses working in Imam Reza Hospital and the medical emergency personnel working in the prehospital emergency ward of Sirjan University of Medical Sciences in 2020. Sirjan is the second most populated county of Kerman in the southeast of Iran. The aforementioned hospital has general and specialty wards, and the prehospital emergency ward provides emergency care to patients by ambulance and air emergency.

SAMPLE SIZE AND SAMPLING

The number of nurses in Imam Reza Hospital and the prehospital emergency ward was 242 and 139, respectively, and a total of 381 participants were enrolled in the study through a census with a response rate of 60%. Of 230 completed questionnaires, 91 questionnaires were from Imam Reza Hospital and 139 from the prehospital emergency ward. The inclusion criteria were having a minimum of 6 months of work experience and giving consent to participate in the study.

DATA GATHERING TOOLS

Data-gathering tools included demographic information, death anxiety, death obsession, and humorstyles questionnaires.

Templer Death Anxiety

The death-anxiety scale was designed by Templer in 1970. It includes 15 yes/no questions, of which 9 have a positive direction and the other 6 have a negative direction. Scores of 1 (presence of anxiety) and 0 (absence of anxiety) are attributed to "yes" and "no," respectively. The total score ranges from 0 to 15; 0 indicates the absence of death anxiety and 15 shows high death anxiety. A score from 1 to 6, 7 to 9, and 10 to 15 indicates none, moderate, and severe anxiety, respectively.[23] The questionnaire has acceptable validity and reliability. The reliability of this tool has been measured to be 0.83 and 0.76 based on test-retest (3 weeks interval) and internal consistency, respectively.[24] In Iran, Nia et al[25] confirmed the validity of this scale using convergent and divergent methods, and the reliability of the scale was 0.88 based on the Cronbach alpha.

Death Obsession Scale

The death obsession scale was introduced by Abdel Khalek in Egypt in 1998. This tool has 15 items and 3 subscales of death rumination (8 questions), death dominance (4 questions), and death idea repetition (worry) (3 questions). A total of 5 choices are attributed to each item ranging from 1 (never) to 5 (very high) in the form of a Likert scale; the lowest score is 15 and the highest 75.[26] This scale has high reliability based on test-retest (1-week interval) (0.91) and high internal consistency (Cronbach's α = 0.90).[16] In Iran, Mohammadzadeh and Najafi[27] confirmed this scale's validity using factor analysis and its reliability using test-retest, split-half, and internal consistency coefficient.

Humor Styles Questionnaire

To measure humor, the humor styles questionnaire was used. The sense of humor questionnaire was developed by Khoshooi et al.[28] This questionnaire has 25 questions based on a 7-point scale (totally agree, agree, agree to some extent, no comment, disagree to some extent, disagree, and totally disagree) and 5 subscales including enjoyment of humor, laughter, verbal humor, sense of humor in social relations, and sense of humor in stressful conditions; each response ranges from 1 (totally disagree) to 7 (totally agree). The reliability of the questionnaire, based on internal consistency (Cronbach's alpha), was 0.74, 0.80, 0.77, 0.74, and 0.79 for the subscales, respectively, and 0.92 for the questionnaire, which proves desirable reliability coefficients for the questionnaire and its subscales. The total score ranges from 25 to 175. A higher score in each subscale denotes a higher level of humor.[28]

DATA COLLECTION AND ANALYSIS

Data were collected from July 10 to September 10, 2020. Data collection was completed in person in Imam Reza Hospital and online in the emergency ward (contacting the medical emergency personnel in person was not feasible). After obtaining the ethical code from the ethics committee of Sirjan University of Medical Sciences and approval from the head of Imam Reza Hospital, the researcher visited the center; then the researcher invited the nurses to participate in the study after explaining the

TABLE 1
Demographic and contextual information of nurses

Variable	Hospital nurses (n = 91)		Medical emergency personnel (n = 139)	
	Frequency	%	Frequency	%
Age (y)				
20-30	40	44	62	44.6
30-40	38	41.8	51	36.7
> 40	13	14.2	26	18.7
Sex				
Female	51	56	17	12.2
Male	40	44	122	87.8
Marital status				
Single	25	27.5	49	35.5
Married	66	72.5	90	64.7
Education				
Associate degree	11	12.1	58	41.7
Bachelor's degree	77	84.6	70	50.4
Master's degree	3	3.3	11	7.9
Work experience, y				
1-5	48	52.7	66	47.5
6-10	7	7.7	35	25.2
>10	36	39.6	38	27.3
Neuropsychiatric disease				
Yes	9	9.9	17	12.2
No	82	90.1	122	87.8
Death of a close relative during the last 6 mo				
Yes	0	0	13	9.4
No	91	100	126	90.6
Workplace				
Urban base	-	-	74	53.2
Prehospital	-	-	47	33.8
Headquarters	-	-	18	12.9
Part				
Intensive care	35	38.5	-	-
Emergency	24	26.4	-	-
Medical surgical	13	14.3	-	-
Other	19	20.9	-	-

objectives, significance, and procedure of the study. The participants were informed of the confidentiality of the information and of the fact that participating in the study was optional. After receiving an informed consent from the participants, the questionnaires were given to them, and they were asked to complete them and return them to the researcher. To adhere to the ethics codes, name and last name were not requested in the questionnaires.

STATISTICAL ANALYSIS

Data were analyzed using SPSS 21 (SPSS Inc., Chicago, IL). To analyze the collected data, descriptive statistics (frequency, percentage, mean, and standard deviation), t-test, Pearson coefficient, ANOVA, Kruskal Wallis, and Mann Whitney tests were used; significance level was considered at $< .05$.

TABLE 2

Mean (SD) scores of death anxiety, death obsession, and humor of nurses

Variable group	Hospital nurses		Medical emergency personnel		Independent *t* test	*P* value
	Mean	SD	Mean	SD		
Death anxiety	6.86	4.04	5.68	3.57	−2.33	.02
Death obsession	29.82	12.30	25.30	12.66	−2.68	.008
Humor	116.75	30.87	118.48	24.66	0.47	.64

ETHICAL CONSIDERATIONS

This study was confirmed by the Ethics Committee of Sirjan School of Medicine with code IR.SIRUMS.-REC.1399.015. Permission to collect data was obtained from the Research Committee of Sirjan University of Medical Sciences and handed over to the management of Imam Reza Hospitals and the prehospital emergency center. Participants' consent was obtained from the participants in the study, and they were assured that the information was confidential.

Results

Most nurses were 20 to 30 years old (44%), female (56%), married (72.5%), had a bachelor's degree (84.6%), and 1 to 5 years of work experience (52.7%). Moreover, most of them had no history of neurological disorders or the death of relatives. Most medical emergency personnel were 20 to 30 years old, male, married, had a bachelor's degree, and 1 to 5 years of work experience. Additionally, most of them had no history of mental disease or the death of relatives. The differences in the proportion of females in both groups were 76% males (n = 174) in the study compared to 24% females (n = 56) (Table 1).

The mean of death anxiety, death obsession, and humor scores are presented in Table 2. The nurses had significantly higher levels of death anxiety and death obsession than medical emergency personnel; in terms of humor, there was no significant difference between the hospital nurses and medical emergency personnel.

In the hospital nurses, medical emergency personnel, and all participants in total, humor did not have a significant relationship with death anxiety and death obsession (Table 3).

The means of death anxiety in the nurses did not have any significant difference based on demographic information; however, in the medical emergency personnel, the mean of death anxiety was significantly higher in those older than 40 years. Moreover, in the medical emergency personnel, women had significantly higher levels of death anxiety. Death anxiety levels were not significantly different based on other demographic variables in this group (Table 4).

In the nurses, the mean of death obsession was significantly higher in women. In addition, the mean of death obsession was higher in the nurses with a bachelor's degree. In the medical emergency personnel, the mean of death obsession was higher in the personnel with a bachelor's degree. Death obsession levels were not significantly different based on the other demographic variables in the nurses and medical emergency personnel (Table 5).

TABLE 3

Relationship between death anxiety and death obsession with humor in nurses and emergency medical personnel

Variable	Humor					
	Hospital nurses		Medical emergency personnel		Total samples	
	r*	*P* value	*r**	*P* value	*r**	*P* value
Death anxiety	−0.20	.06	−0.02	.85	−0.11	.10
Death obsession	−0.05	.64	−0.08	.38	−0.07	.31

* Pearson's correlation coefficient.

TABLE 4
Comparison of death anxiety in nurses and emergency medical personnel in terms of demographic characteristics

Variable	Death anxiety							
	Hospital nurses				Medical emergency personnel			
	Mean	SD	Test statistics	P value	Mean	SD	Test statistics	P value
Age (y)								
20-30	6.82	4.12	F = 0.10*	.91	5.80	3.82	F = 3.40*	.04
30-40	7.02	4.21			4.84	3.0		
> 40	6.46	3.45			7.04	3.74		
Sex								
Female	7.29	4.0	$t = 1.17^{\dagger}$	.25	7.41	4.11	$t = 2.17^{\dagger}$	.03
Male	6.30	4.08			5.43	3.44		
Marital status								
Single	6.36	4.26	$t = -0.72^{\dagger}$	.47	5.14	3.23	$t = -1.30^{\dagger}$	.20
Married	7.04	3.97			5.97	3.73		
Education								
Associate degree	4.64	2.80	F = 2.76*	.07	5.64	3.16	F = 0.39*	.68
Bachelor's degree	7.27	4.13			5.84	3.96		
Master's degree	4.33	1.53			4.82	3.19		
Work experience								
1-5	6.67	4.08	F = 0.40*	.67	5.67	3.57	F = 0.21*	.81
6-10	6.0	3.56			5.4	3.45		
>10	7.28	4.12			5.95	3.77		
Neuropsychiatric disease								
Yes	4.44	4.67	$t = -1.92^{\dagger}$	.06	6.06	3.44	$t = 0.47^{\dagger}$	.64
No	7.12	3.91			5.62	3.60		
Death of a close relative during the last 6 mo								
Yes	-	-	-		6.69	3.90	$t = 1.08^{\dagger}$	.28
No	-	-	-		5.57	3.54		
Workplace								
Urban base	-	-	-		5.23	2.94	$H = 1.30^{\ddagger}$	.52
Road base	-	-	-		5.94	4.08		
Headquarters	-	-	-		6.83	4.36		
Part								
Intensive care	6.31	3.96	F = 1.05*	.38	-	-	-	
Emergency	7.71	4.79			-	-	-	
Medical surgical	7.85	3.60			-	-	-	
Other	6.10	3.35			-	-	-	

* Analysis of variance.
† Independent t test.
‡ Kruskal-Wallis test.

The means of humor did not show any significant difference based on demographic variables in the nurses; however, in the medical emergency personnel, the mean of humor was significantly higher in men, and it was higher in the urban center personnel. Humor did not show any significant difference based on the other demographic variables in this group (Table 6).

TABLE 5

Comparison of death obsession in nurses and emergency medical personnel based on demographic characteristics

Variable	Death obsession							
	Hospital nurses				Medical emergency personnel			
	Mean	SD	Test statistics	P value	Mean	SD	Test statistics	P value
Age (y)								
20-30	31.0	14.33	F = 0.34*	.72	27.47	14.13	H = 5.60†	.06
30-40	29.08	10.66			21.65	6.91		
> 40	28.38	10.44			27.31	16.36		
Sex								
Female	32.80	13.19	$t = 2.70$‡	.008	29.18	14.05	$t = 1.35$‡	.18
Male	26.02	9.98			24.75	12.42		
Marital status								
Single	30.0	14.21	$t = 0.08$‡	.93	22.16	7.36	Z = −1.22§	.22
Married	29.76	11.62			27.0	14.53		
Education								
Associate degree	19.73	5.14	F = 5.77*	.004	23.67	10.35	H = 8.44†	.02
Bachelor's degree	31.60	12.37			27.77	14.65		
Master's degree	21.33	8.39			18.09	2.66		
Work experience, y								
1-5	30.04	13.70	F = 0.56*	.58	25.50	13.38	F = 0.85*	.43
6-10	25.14	9.34			23.11	7.84		
>10	30.44	10.38			26.95	14.82		
Neuropsychiatric disease								
Yes	24.44	10.05	t = −1.39‡	.17	28.24	14.49	$t = 1.02$‡	.31
No	30.41	12.43			24.88	12.40		
Death of a close relative during the last 6 mo								
Yes	-	-	-		28.85	14.60	$t = 1.06$‡	.29
No	-	-	-		24.93	12.46		
Workplace								
Urban base	-	-	-		24.42	10.8	F = 0.39*	.68
Road base	-	-	-		26.15	13.30		
Headquarters	-	-	-		26.67	17.75		
Part								
Intensive care	29.48	12.18	F = 1.16*	.33	-	-	-	
Emergency	29.38	13.96			-	-	-	
Medical surgical	35.31	12.51			-	-	-	
Other	27.26	9.69			-	-	-	

* Analysis of variance.
† Kruskal-Wallis test.
‡ Independent *t* test.
§ Mann-Whitney test.

TABLE 6

Comparison of humor in nurses with emergency medical personnel based on demographic characteristics

Variable	Humor							
	Hospital nurses				Medical emergency personnel			
	Mean	SD	Test statistics	P value	Mean	SD	Test statistics	P value
Age (y)								
20-30	117.38	35.25	F = 0.08*	.92	118.21	21.36	F = 0.01*	.99
30-40	117.21	29.04			118.53	26.12		
> 40	113.46	22.27			119.04	29.64		
Sex								
Female	114.59	35.39	t = −0.75†	.45	104.24	16.10	t = −2.60†	.01
Male	119.50	24.08			120.47	25.04		
Marital status								
Single	113.92	27.71	t = −0.54†	.59	113.61	22.40	t = −1.73†	.09
Married	117.82	32.13			121.13	25.54		
Education								
Associate degree	124.82	32.85	F = 0.46*	.63	117.93	26.77	F = 0.88*	.42
Bachelor's degree	115.83	31.10			120.30	23.02		
Master's degree	110.67	17.62			109.82	23.37		
Work experience, y								
1-5	116.71	34.49	F = 0.02*	.98	116.05	23.71	F = 0.61*	.54
6-10	119.14	31.53			120.60	25.64		
> 10	116.33	26.12			120.76	25.64		
Neuropsychiatric disease								
Yes	114.33	15.04	t = −0.25†	.81	121.29	23.81	t = 0.50†	.62
No	117.01	32.19			118.09	24.85		
Death of a close relative during the last 6 mo								
Yes	-	-	-		117.31	25.34	t = −0.18†	.86
No	-	-	-		118.60	24.69		
Workplace								
Urban base	-	-	-		123.61	23.60	F = 3.56*	.03
Road base	-	-	-		112.96	25.17		
Headquarters	-	-	-		111.83	24.22		
Part								
Intensive care	116.51	27.73	F = 0.05*	.99	-	-	-	
Emergency	118.54	27.68			-	-	-	
Medical surgical	116.69	52.23			-	-	-	
Other	114.95	22.55			-	-	-	

* Analysis of variance.
† Independent t test.

Discussion

COVID-19 has created a myriad of challenges for health care personnel. This study aimed to compare death anxiety, death obsession, and humor in nurses and medical emergency personnel during COVID-19. According to the results, death anxiety and death obsession levels were higher in the nurses than the medical emergency personnel. The results also showed that there was no significant

difference between the nurses and medical emergency personnel in terms of humor.

Frequent encounters with patients' death in the hospital are probably one of the reasons for the high mean score of death anxiety in the nurses.[10,29] Sanadgol et al[30] state that nurses experience most of the various psychological symptoms, including death anxiety, owing to their daily interactions with patients with COVID-19, especially because of the lack of protective equipment. In the study conducted by Onchonga et al,[31] findings indicated that most health care workers had mild anxiety and depression because of the COVID-19 pandemic. Nurses are the first frontline health care workers to interact with patients testing positive, which makes them more vulnerable. This poses a danger not only to them but also to their peers, family members, and relatives with whom they interact and live.[31] Generally, nurses have more encounters with critically ill and near-to-death patients and their families owing to the nature of their job, and caring, comforting, and consoling these patients and their families are among the most demanding nursing cares exposing nurses to death anxiety.[32]

In this study, the mean score of death obsession was significantly higher in the nurses than medical emergency personnel. No similar study was found in this regard; however, death anxiety and obsession increases in nurses, especially special care nurses, who have numerous contacts with patients unable to effectively make contact with them for reasons such as having an artificial airway, a decreased level of consciousness, dependence on life support devices, and constant nursing care.[19,25] Furthermore, numerous studies have reported that nurses working in important wards, such as operating rooms, emergency rooms, and special care units such as the intensive care unit and cardiac care unit, experience more mental disorders and higher death anxiety levels owing to high mental pressures.[10,33] This might be the reason for higher death obsession levels in nurses than medical emergency personnel. As Galehdar et al[34] stated in their study, nurses experienced psychological distress, including death anxiety and obsessive thoughts, while caring for patients with COVID-19, so through proper planning by authorities, it is possible to manage the risk factors of mental health distress in nurses and improve their mental health status.

In this study, humor did not have any significant relationship with death anxiety and death obsession in the nurses and medical emergency personnel. Contrary to the present study, Arab et al[19] conducted a study in Iran and reported a significant relationship between humor and death anxiety among special care unit nurses. The authors of this study reported that because nurses play a central role in the health care system, they need to improve their knowledge of the death process and strategies for coping with it and recommended humor as a strategy for overcoming death anxiety.[19] Given that death is an inevitable phenomenon, increasing awareness and strengthening insights about it and extracting positive patterns of facing death can lead to reducing anxiety and to optimal exposure to death. As the author concluded in his study, it reduces negative attitudes toward death and death anxiety.[35]

Moreover, in contrast to the results of the present study, in the study conducted by Curşeu et al[9] on patients with COVID-19 in Romania during the pandemic and the study by Latipun et al[36] on patients with chronic disease, a significant relationship was reported between humor and death anxiety. The authors mentioned humor as a necessary defense mechanism against stressful and difficult situations to reduce perceived negative experiences and death anxiety. People who use humor experience less distress and anxiety and have fewer negative feelings owing to a decrease in fear of death.[37] Fang et al[38] stated that providing training courses for stress management, improving flexibility, and nurturing the sense of humor in nurses are among the crucial duties of hospital managers. Cheng et al[39] concluded that improving death education is essential to increasing the cognition of death and guiding nursing students to actively face death to reduce their level of death anxiety. The results of the study by Ghadampour et al[40] suggest that the mindfulness-based cognitive therapy is effective in reducing death anxiety.

In the present study, death anxiety had a significant relationship with age and gender in medical emergency personnel, and death anxiety was higher in those older than 40 years and women. In terms of age, the results of the present study were in line with those of the studies by Latha et al[41] and Thabet and Abdalla.[42] However, in contrast to the results of the present study, in the study by Roodbandi et al[43] conducted on medical emergency personnel in Iran, death anxiety decreased with age. Regarding gender, the results of the study conducted by Thabet and Abdalla[42] were in line with the results of the present study. Because in the medical emergency ward of Sirjan female personnel only work in the dispatch center, one reason for high death anxiety levels in them might be frequent stressors they face, such as answering to a large number of calls asking for emergency services and the sensitive matter of time in sending ambulances. In this regard, Kindermann et al[44] stated that stressful work conditions and encounters with traumatic experiences of the callers are the causes of spiritual and mental problems, depression, anxiety, and secondary traumatic stress in dispatch personnel. Moreover, Smith et al[45] reported that working in high-pressure environments, insufficient rest between

stressful calls, dealing with traumatic calls, inadequate training for coping with the stress resulting from emergency calls, dealing with verbal violence, and lack of support are the causes of stress in emergency call takers and dispatchers. As COVID-19 has progressed, there has been a global phenomenon of exponential increases in emergency medical services calls, which is expected to impose a great pressure on emergency medical services dispatch centers.[46]

Other results of this study included significant relationships between death obsession and gender in nurses and between death obsession and education level in nurses and medical emergency staff. Regarding gender, the mean of death obsession was significantly higher in female nurses, which was in line with the results of the studies conducted by Thabet and Abdalla[42] and AlAteeq et al[47] during COVID-19. However, these results were in contrast to those of the study by Shakil et al,[48] in which the authors stated that the gendered social norms that result in more men leaving home, and therefore, their frequent contacts with threatening factors, are the reasons for the higher death anxiety score in them. In contrast, Onchonga et al[31] claimed that the higher anxiety women experienced is due to their level of interaction and role in the society, like working in medical centers, as well as their mental characteristics such as fear of themselves and their families being infected. For example, they claimed that the higher anxiety women experience is associated with social caretaking norms linked to fear of their families being infected.[31] No similar study was found regarding the higher mean score of death obsession among those with a bachelor's degree, which could have been caused by the high number of participants with a bachelor's degree in this study.

The results of this study also indicated that the mean of humor is significantly higher in men among medical emergency personnel. Hofmann et al[49] in a systematic review found that men generally acquire higher humor scores, and this is caused by personality differences such as an ability to use and understand humor.

Limitations

One of the limitations of this study was the personality traits of the personnel, which were not evaluated. Another limitation was that the study was conducted on a small sample from the country in Sirjan; therefore, generalization of the data should be done with caution.

Implications for Emergency Nurses

This study was conducted during the COVID-19 pandemic. Both emergency nurses and medical emergency personnel reported experiencing mild-moderate death anxiety and obsession. Working in the pre-hospital and hospital emergency settings are often associated with anxiety. Opportunities to implement behavioral coping interventions are warranted to mitigate work related stress.

Conclusion

Death is a reality that health care staff frequently face. The results of this study revealed that the levels of death anxiety and death obsession were higher in the nurses than medical emergency personnel, and this can significantly affect their performance. Owing to the crucial role of nurses in the health system and medical care for patients with COVID-19, coping strategies for reducing death anxiety and obsession in nurses and providing mental support for nurses, who work at the forefront of providing health care for patients in pandemics, are recommended. Moreover, nurses should have a holistic outlook on life and know death as an inevitable reality.

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