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Stress, Anxiety and Depression among Nurses and Personnel of Pre-hospital Emergency Department during the Covid-19 Pandemic: A Comparative Study

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Abstract

The World Health Organization deemed the 2019 coronavirus pandemic a public health emergency in January 2020. For those working in healthcare, this worldwide crisis has presented a variety of challenges. The treatment teams have experienced mental health issues and anxiety due to an increase in workload, high-risk circumstances including ongoing interaction with contaminated environments, an increase in mortality as a result of the coronavirus, a loss of family contact, and exhaustion. In order to compare stress, anxiety, and depression among nurses and pre-hospital emergency staff during the COVID-19 pandemic, we decided to conduct the current study.

This descriptive-cross-sectional study was conducted between October 2020 and September 2021 with the participation of 125 nurses working in the inpatient wards of 19 patients with Covid-19 in the 9th of Dey Hospital of Torbet Heydariyeh City and the participation of 544 pre-hospital emergency personnel. The average level of depression, anxiety and stress in both groups of nurses and pre-hospital emergency workers was significant ($P<0.001$). According to the results, the severe level of depression, anxiety and stress of pre-hospital emergency personnel was 5.9, 8.6 and 2.8% respectively and it was found more as compared to nurses. Considering the time period of the current study and the fact that most nurses worked with Covid-19 patients, the frequency of depression, anxiety and moderate to severe stress was higher in them. Despite direct contact with patients, pre-hospital emergency personnel showed a lower prevalence of depression, anxiety and stress, which may be due to the home quarantine of many patients with covid-19 and the use of complementary medicine, the transfer rate of these patients performed less by pre-hospital emergency.

Keywords: Stress, Anxiety, Depression, Pre-hospital Emergency, Nurses

Introduvtion

An infectious disease known as Covid-19 is brought on by a family of viruses known as SARS-CoV-2 (1). The World Health Organization estimates that from December 2019 to June 2021, more than 220 countries reported roughly 178,207,851 new cases and 3,858,077 deaths. Around the same time, Iran had 3,070,426 cases and 82,619 deaths, respectively. United States of America, India, and Brazil had the most cases (2, 3).

The World Health Organization deemed the 2019 coronavirus pandemic a public health emergency in January 2020 (4, 5). In addition to raising worries about physical health, the rapid proliferation of Covid-19 among communities also resulted in a number of psychiatric diseases (6).

For those working in healthcare, this worldwide crisis has presented a variety of challenges. The treatment teams have experienced mental health issues and anxiety due to an increase in workload, high-risk circumstances including ongoing interaction with contaminated environments, an increase in mortality as a result of the coronavirus, a loss of family contact, and exhaustion (7). The immune system can be weakened by stress and anxiety, leaving one more susceptible to diseases like Covid-19 (8).

The pre-hospital emergency sector is one of the most demanding in the healthcare system. The primary component of the front line of treatment is pre-hospital emergency personnel, who offer a variety of services both under normal conditions and after accidents and disasters (9). Nonetheless, the multiple deployments, unsafe workplace, and lack of decision-making give rise to anxiety and stress in this group (10). As a result, pre-hospital emergency personnel who operate as front-line providers of pre-hospital services are subject to stressful conditions (11).

Nurses, who make up more than 75% of the treatment team and are the first group on the front lines of combating the COVID-19 pandemic, are the primary provider of care in the team. The work environment of nurses is followed by long-term stress (12). Nursing has been listed as one of the top 40 stressful jobs by the National Association of Safety Professionals, and it is likely the most stressful of the healthcare jobs (13). There is a risk of contamination, wearing a mask, and spreading the infection, which might result in psychological disorders (14).

Healthcare workers during the Covid-19 pandemic exhibit more signs of stress, anxiety, and depression than the general population, according to the findings of a study in China (15). Yet, the findings of a study by Ariapooran et al. revealed that nurses are more anxious than pre-hospital emergency staff during the COVID-19 pandemic (1). Also, in the study by Zhenyu Li et al., front-line nurses had more mental harm from covid-19 than other nursing groups did (16).

At different levels of the treatment staff, whose mental health may be in danger, the reasons for anxiety must be found and addressed in the current high-risk condition. It is necessary to measure the levels of stress, anxiety, and depression in this group in order to determine the best course of action for maintaining and improving their health, given the significance of preserving the healing force and keeping this group healthy as the protectors of the health and well-being of other members of the society.

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Methods

This descriptive-cross-sectional study was conducted between October 2020 and September 2021 with the participation of 125 nurses working in the inpatient wards of 19 patients with Covid-19 in the 9th of Dey Hospital of Torbet Heydarieh City and the participation of 544 pre-hospital emergency personnel.

The following criteria had to be met in order for nurses to be admitted to the study: they had to work in the inpatient wards during Covid-19, had

at least a year of work experience, give informed consent, and not be in critical situations like divorce or the loss of a loved one. Also, having an agreement to participate in the study and employment in pre-hospital emergency operational units were the requirements for entry into the study for pre-hospital emergency personnel.

The researchers spent many stages visiting the departments of the 9th of Dey hospital associated with patients with COVID-19 in order to collect samples from the nurses. After explaining the aim and obtaining their written informed consent, they acquired the nurses' participation in the study. The questionnaire's contents and how to complete it were then explained. Additionally, the researchers visited the desired pre-hospital emergency centers in Torbat Heydarieh City in order to sample pre-hospital emergency personnel. After explaining the purpose and obtaining the pre-hospital emergency personnel's consent, the researchers explained the contents of the questionnaire and the procedure for filling it out.

A standardized 21-DASS questionnaire that assesses depression, anxiety, and stress is one of two data collection tools that include demographic information surveys with 7 items (age, gender, education level, job history, medical history, marital status, and employment status). Lovibon introduced the standardized DASS-21 questionnaire for the first time in 1995 (17). This survey has 21 items and three subscales for depression, anxiety, and stress, each one with seven questions. The answers to the questions that are specific to each subscale of the DASS-21 are used to determine the final score for that subscale. Every question receives a score between 0 (does not pertain to me at all) and 3 (completely applies to me). The final score of each subscale should be doubled because this questionnaire only contains the first 42 questions of the main scale. The depression subscale has items that assess low mood, low self-esteem, hopelessness, the worthlessness of life, lack of interest in involvement in affairs, lack of enjoyment in life, and loss of strength and vitality. Attempts to measure physiological hyperarousal, worries, and situational anxiety are all addressed in the anxiety subscale. The terms nervous tension, difficulty relaxing, impatience, and restlessness are all part of the stress subscale.

A sample of the general population of Mashhad City in Iran has been used to assess the validity of this test, with results showing depression rates of 0.70, anxiety rates of 0.66, and stress levels of 0.76. (18). Mehdi Poor and Najafi have additionally researched and affirmed the validity and reliability of this tool (19, 20). The present study also employed the qualitative content validity approach to assess the reliability of the DASS-21 questionnaire. In this manner, this tool was made available to 10 faculty members of Torbat Heydarieh University of Medical Sciences for review. The final tool was then employed after taking into account the necessary suggestions and revisions. Reliability in this study was also confirmed by completing the DASS-21 questionnaire by 10 participants from the research units, with Cronbach's alpha coefficient using the internal consistency method with a coefficient of 0.81.

After receiving official consent from Torbat Heydarieh University of Medical Sciences, receiving approval from the local research ethics committee with the code IR.THUMS.REC.1398.060, and presenting it to the research environment's authorities, the current study was conducted. After receiving written informed consent and receiving a face-to-face oral description of the study, nurses and pre-hospital emergency personnel were included in the study. Using the SPSS 16 software, statistical analysis of the acquired data was performed. Descriptive statistics (frequency distribution and mean) were employed to describe and categorize the data. To determine how the variables related to one another, Chi-square, Mann-Whitney, Fisher, and Kolmogorov Smirnov tests were performed. The confidence level for each test utilized was 95%, and significance levels lower than 0.05 were taken into account.

Results

Among the 669 nurses surveyed, 544 working in pre-hospital emergency and 125 working in hospital emergency took part in the research. Males made up 100% of the pre-hospital emergency personnel, while females made up 53.6% of the hospital emergency personnel. Moreover, 64% of hospital emergency personnel and 31% to 40% of pre-hospital emergency personnel were between the ages of 20 and 30 years. In terms of job experience, 49.8% of pre-hospital emergency personnel had more than 10 years of experience compared to 78.4% of hospital emergency personnel with 1 to 5 years of experience. 56.8% of emergency personnel working in hospitals and 83.8% of those working in pre-hospital settings were married (Table 1).

This study showed the average scores of depression, anxiety and stress of pre-hospital emergency personnel were 4.6 ± 4.3, 3.9 ± 3.5 and 4.6 ± 5.8, respectively, while in hospital emergency personnel it was 7.3 ± 9.8, 3.9 ± 3.5 and 4.6 ± 5.8 respectively (Table 2). According to the findings, hospital emergency personnel exhibited moderate to severe depression, moderate to severe anxiety, and moderate to severe stress. Meanwhile, compared to hospital emergency professionals, pre-hospital emergency personnel had higher levels of severe depression, anxiety, and stress (Table 3).

Discussion and Conclusion

The current study sought to compare how stress, anxiety, and depression affected nurses and pre-hospital emergency workers during the COVID-19 pandemic. The average stress, anxiety, and depression among nurses were higher than that among pre-hospital emergency personnel, according to the findings of the current study. There was a significant difference between pre-hospital emergency personnel and nurses in terms of the total average score of anxiety, depression, and stress.

Healthcare workers are at significant risk of stress and anxiety, according to the findings of a study comparable to our own that assessed the level of anxiety in hospitals where the coronavirus had spread (21). Another study on doctors and nurses at a Chinese hospital revealed that during the Covid-19 pandemic, nurses exhibit severe symptoms of anxiety, stress, and depression (15). According to the findings of a different study carried out in Singapore, more than half of the nurses displayed signs of stress and anxiety during the Covid-19 pandemic (22). In this regard, the findings of a different Iranian study on nurses employed in departments with Covid-19 patients revealed that around half of the nurses had signs of stress, anxiety, and depression (14).

However, the findings from earlier studies conducted during the 2015 Sars and Ebola outbreaks revealed that psychological disorders like anxiety, stress, and depression were common among medical staff and pre-hospital emergency personnel in a particular area, and residents of that area have also reported experiencing an increase in mental burden as a result (23). According to the results of a study by Dadashzadeh et al. (2017) on pre-hospital emergency personnel in Iran, emergency medical personnel experience high levels of stress and anxiety (24). Moreover, the study of Lai et al (2020), which examined the treatment staff in Wuhan, China during the Covid-19 illness outbreak, revealed that medical professionals reported a significant prevalence of symptoms of anxiety (44.6%) and depression (50.4%) (15).

High levels of depression were observed in nurses according to the findings of a study by Shahan Waheed et al. conducted in Pakistan on the mental health of medical personnel during the Covid-19 pandemic (25). The findings of the current study are consistent with those of the

Table 1: Demographic variables

Variable		Group		P value
		Hospital (n=125)	Pre-Hospital (n=544)	
Sex n (%)	Male	58(46.4)	544(100.0)	*P<0.001
	Female	67(53.6)	0(0.0)	
Age n (%)	20- 30 years	80(64.0)	167(30.7)	*P<0.001
	31- 40 years	37(29.6)	250(46.0)	
	41- 55 years	8(6.4)	127(23.0)	
Level of Education n (%)	Technician	8(6.4)	294(54.0)	*P<0.001
	Expert	117(93.6)	250(46.0)	
Work experience n (%)	1- 5 years	98(78.4)	138(25.4)	*P<0.001
	6- 10 years	22(17.6)	135(24.8)	
	Over 10 years	5(4.0)	271(49.8)	
History of disease n (%)	Yes	15(12.0)	129(23.7)	*P=0.004
	No	110(88.0)	415(76.3)	
Marital status n (%)	Single	54(43.2)	88(16.2)	*P<0.001
	Married	71(56.8)	456(83.8)	
Employment Status n (%)	Commitment	37(29.6)	79(14.5)	*P<0.001
	Contract	32(25.6)	91(16.7)	
	Peyman	30(24.0)	132(24.3)	
	Ofcial	18(14.4)	140(25.7)	
	Remark	2(1.6)	20(3.7)	
	Company	6(4.8)	82(15.1)	

*Chi-square

Table 2: Mean scores of depression, anxiety and stress based on the studied variables

Variable	Group		P
	Hospital (n=125)	Pre-Hospital (n=544)	
	Mean ± SD	Mean ± SD.	
Depression	9.8 ± 7.3	4.3 ± 4.6	*P<0.001
Anxiety	3.5 ± 3.9	3.5 ± 3.9	*P<0.001
Stress	5.8 ± 4.6	5.8 ± 4.6	*P<0.001

*Independent t-test

Table3: Frequency distribution of depression, anxiety and stress in Study variables

Variable		Group	
		Hospital (n=125)	Pre-Hospital (n=544)
Depression n (%)	Normal	62(49.6)	347(63.8)
	Little	24(19.2)	67(12.3)
	Mediocre	28(22.4)	72(13.2)
	Severe	8(6.4)	26(4.8)
	Very severe	3(2.4)	32(5.9)
Anxiety n (%)	Normal	65(52.0)	344(63.2)
	Little	12(9.6)	45(8.3)
	Mediocre	33(26.4)	80(14.7)
	Severe	7(5.6)	28(5.1)
	Very severe	8(6.4)	47(8.6)
Stress n (%)	Normal	65(52.0)	375(68.9)
	Little	16(12.8)	62(11.4)
	Mediocre	34(27.2)	54(9.9)
	Severe	8(6.4)	38(7.0)
	Very severe	2(1.6)	15(2.8)

Ariapooran et al. study, which looked at depression, anxiety, and suicidal thoughts among nurses during outbreak. The level of depression and anxiety among nurses was observed to be significant (1).

In line with the findings of the study by Hüseyin Mutlu et al., which examined the levels of anxiety and the factors influencing it among emergency staff during Covid-19, the prevalence of moderate to severe anxiety in nurses was higher than that of pre-hospital emergency personnel (26). One explanation for this coincidence is that there were more patients visiting hospitals during the Covid-19 pandemic. The nurses working in these departments were in direct contact with patients who had the disease to varying degrees, which increased the risk of infection for them and their families (27).

Due to the time period of the current study and the fact that the majority of nurses work with covid-19 patients, there is a higher prevalence of moderate to severe depression, anxiety, and stress in them. Pre-hospital emergency personnel have demonstrated a lower prevalence of depression, anxiety, and stress despite having direct patient contact. This finding may be related to the home quarantine of many patients with COVID-19 and the use of complementary medicine, as well as the lower transfer rate of these patients handled by pre-hospital emergency.

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