

Evaluating the Degree of Stress, Anxiety, and Depression among the Emergency Personnel in Kerman University of Medical Sciences

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ABSTRACT

Emergency Medical Services (EMS) faces various tensions during a work day, psychological tensions which, undoubtedly, affect the quality of its services. The present study has been conducted to evaluate the degree of stress, anxiety, and depression among the emergency personnel in Kerman University of Medical Sciences. This descriptive-analytical study includes 150 members of medical emergency technicians. Sampling was done using census and data were collected through valid and reliable DASS depression, anxiety, and stress questionnaire. This 21-question questionnaire included three 7-question parts related to depression, anxiety, and stress. Data analysis was done with SPSS software, version 20, Pierson correlation test, Spearman, and regression. There is significant relationship between the rate of stress and anxiety among medical emergency staff and their depression. Among demographic characteristics, there was statistical relationship between age and depression, anxiety, and stress, and, also, marital status and depression. Place and years of service and age were most influential in personnel anxiety while marital status and place of service had the greatest impact on personnel depression. Since medical emergency personnel play an essential role in development and improvement of public health, removing predisposing, creating, and maintaining factors of extreme emotional reactions is considered a health priority for them.

Key words: Depression, Anxiety, Stress and Emergency Medical Services.

INTRODUCTION

According to World Health Organization, anxiety has spread to more than four hundred million people all over the world; therefore, anxiety disorders are known as the most common types of psychological disorders. Considering the unbridled spread of anxiety and that the failure of elementary prevention, early diagnosis, and due-time control of this disorder necessitate the application of prevention methods to diagnose anxiety at beginning stages and taking appropriate steps (Lesan et al., 1382). According to a survey conducted by National Organization of Work, stress and depression in the work place are debilitating disorders for employees second only to heart disorders (Mark, 2002). All over the world,

emergency system is one of the most important pillars of health care services the most important goal of which is providing satisfactory services in shortest possible time according to scientific standards of the world. Thus, the related personnel have to thoroughly train in Emergency Medical Services (EMS) with highest frequency of references and emergency ambulances must be fully equipped with necessary facilities (Naoki, 2005). An emergency medical service is a community-based health management system coordinated with the whole health care system (Zendehkar and Abdi, 2007). The personnel are the most precious capital of emergency medical system; they hold the key to success and

development of services. However, their responsibilities get increasingly more advanced and complicated through years, and this necessitates higher level of technique and knowledge. Also, due to an increase in the frequency and intensity of necessary emergency medical service, technicians suffer more physical and mental stress (Mehrabian et al., 2005). Emergency occasions, like internal and traumatic occasions, are dangerous situations which cause sudden physical and mental injury and necessitate quick and proper actions for those exposed to these occasions. The main treatment goals in emergency services are saving the lives of patients, preventing severe disorders prior to main treatment, and protecting the patient and supporting his family so that they react properly and accurately in acute situations (Rahimi, 1378).

In emergency cases, personnel have kernel performing roles in intervening and taking pre-hospital treatment steps based on their education which directly affects decision-making and prioritizing (Nasirpour et al., 2009). On the other hand, since emergency service is the first confrontation of the patient with necessary treatments and actions, an accurate understanding of the patient's problem is necessary to please them in a professional way (Dadgar and Taraghi, 2008). Anxiety is an unpleasant and vague feeling of discomfort and concern, often of unknown origin, which occurs to the person and includes uncertainty, helplessness, and physical arousal (Patti et al., 2007). The re-occurrence of stress-causing situations which have hurt the patient results in anxiety. Everybody struggles with anxiety; however, unusually severe and chronic anxiety is problematic and can cause depression in the person. But the main reason for the emergence of stress or, in extreme cases, anxiety, is, in addition to genetic and congenital factors, the environment of the individual and its social and occupational ups and downs (Lee and Wang, 2002). Stress and anxiety are terms frequently used to describe daily emotions and feelings.

In psychology, anxiety is known as an extreme case of chronic stress and it turns into a mental problem if it causes suffering to the individual or others, prevents achieving goals, and interferes with normal daily activities. Anxiety appears in a person when stressful situations either last too long or occur frequently. In this case, body gets worn-out and becomes vulnerable to physical and psychological disorders, such as anxiety (Patti et al., 2007). Depression is a collection of various psychological states of feeling in forms of mild tediousness and silence and separation from everyday activity, and is considered one of the numerous factors of chronic anxiety. Considering its quick spread and lack of primary prevention, early diagnosis, and due-time control, anxiety, as a disorder, appears in the individual and gets complicated through time (Fathi, 2004). Applying prevention methods in primary stages and taking

appropriate steps is of paramount importance. Employees in medical emergency services (paramedics, emergency technicians, and nurses) are under heavy pressure and prone to mental disorders. Their work place is often afflicted with such difficulties that if the involved person is not physically and mentally prepared, he will be extremely damaged. Causes of these injuries lie in the nature of their jobs which necessitate serious control or modifications. Factors such as insomnia, sleep disturbances or irregular breaks due to work shifts that cause weariness, separation from family, increasing stress in the person to provide the best service because of ongoing conflict with life and death of the patients, enduring stress and restlessness of people who accompany patient and dealing with their would be aggression and disrespect, and the severity of sudden shocks during physical activities because of their begin ill-prepared are the most common causes of these injuries (Meshkany, 1994).

These injuries appear in two physical and mental forms. Backache, disc, arthritis, joint and muscle pain causing from physical complications and depression after witnessing the event, aggression, impatience, lack of motion and, in extreme and catastrophic cases, suicide are psychological complications of these injuries (Mehrabian et al., 2005). According to research which have been done hitherto stress, excitement, and depression are possible threats for the staff in the treatment segment. Based on Angermayer's study, nurses are among occupational groups who are prone to stress and psychological issues, depression, anxiety, and exhaustion (Angermeyer et al., 2006). Smith believes that nurses, in their work place, are under heavy stress and pressure which affect their manner and give them away to depression (Mihashi et al., 2006). Malakouti's research showed that there is significant correlation between stress and depression and anxiety among hospital staff (Malekoti et al., 1994). Khajenasiri, in a study on Imam Khomeini Hospital nurses, concluded that the rate of depression for 73.1% is weak, for 21.5% average, and for 5.2% severe (Nasir, 2000)). Some occupations are essentially stressful and anxiety provoking.

In this study, EMS staff (paramedics, emergency technicians, and nurses) have been scrutinized to determine the quality and quantity of three factors in their performance: stress, anxiety, and depression. Anxiety, per se, is a normal factor among hospital staff and appropriate medical procedures are essential to handle it wisely. The important point is that the exhaustion of these personnel brings about high costs for their organization, a fact which usually remains unattended to. As a result, maintaining personnel is of paramount importance for organization and empowering them, who are the first link between a patient and pre-hospital system, in addition to creating a favorable and professional coverage, is an essential factor in keeping them motivated and prepared

Table 1. Frequency distribution of staff depression, anxiety, and stress.

Frequency percentage	Normal	Slight	Average	Intense
Emotional reactions				
Depression	44	29.3	26.7	-
Anxiety	30.7	29.3	28	12
Stress	72	17.3	10.7	-

for their job. This fact caused evaluating the degree of stress, anxiety, and depression among the emergency personnel in Kerman University of Medical Sciences.

MATERIALS AND METHODS

This research was a temporary descriptive-analytical study conducted to evaluate the degree of stress, anxiety, and depression among the emergency personnel in Kerman University of Medical Sciences. The statistical community included all management staff and emergency medical personnel in Kerman University of medical sciences, covering contractual, formally employed, offer employed pre hospital emergency personnel. Research sample, according to Morgan table, was a group of 150 pre-hospital emergency staff. Pre-requisite factors to be a part of the study included cases such as personnel inclination to cooperate, having experience in pre-hospital emergency, and not cooperating simultaneously in similar studies. After introducing himself, the researcher clarified the purposes of the study by stating that participation is optional, all included information will remain confidential, and the results will be available to related units. All volunteers entered the study. A two-part questionnaire was the means of data gathering. The first part included seven questions about population characteristics, such as place of services, educations, years of services, age, marital status, type of service, and sex, and the second part was a standardized DASS_21 questionnaire aimed at evaluating depression, anxiety, and stress (emotional reactions) of EMS personnel. Depression, anxiety, and stress scale value was provided by Lovibond and Lovibond in 1995 and included these categories: never, weak, average, severe. The least point for each question was 0 and the most 3.

This scale has two forms: the short form covers 21 phrases divided in three 7 question each assessing a separate psychological structure that is, depression, anxiety, and stress. Long form included 42 phrases divided in three 14 questions each measuring an action or psychological rhythm. Lovibond and Lovibond, in a big 717 university student sampling, showed Beck's depression questionnaire with a scale of $r=0.4$ to be of high correlation; short 21 phrase form was validated by Sahebi and his colleagues in

1384(Lovibond,1995).Crawford and Henry, in 2003, compared these tools with two other tools related to depression and anxiety for a big 1771 sample group in England; they reported the reliability of these tools, through Cronbach alpha, to be 0.95 for depression, 0.90 for anxiety and 0.93 stress, and 0.97 for general points (Crawford,2003). The validity of this study was authorized by Moradipanah, Aghebati, and Sahebi in Iran. In Moradipanah's study, Cronbach's alpha was reported 0.94 for depression, 0.92 for anxiety, and 0.82 for stress (Moradipanah,2005). The aggregate of the points was measured for individuals and the percentage was compared to possible maximum points. Data was analyzed with SPSS. V20. Pierson correlation tests, Spearman, and regression were used to examine the meaningfulness of the relationship between main and population characteristics.

RESULTS

The under study sample included 150 members of EMS personnel in Kerman University of medical sciences, the majority of whom (83.5%) were male. 68, 28, and 4% of them were in 20 to 30 and 31 to 40 age groups. 40% had BA in nursing and the rest were educated in medical emergency, anesthesia, surgery technicians, disaster relief workers, and diploma; also, 64% of them had 2 to 10 years of service. 65% were married. 55% were contractual employee, and 46% offer employed. 21.5% were occupied in the central station, 31.5% in urban stations, 30.5 in road stations, and 16.5% in message transference station.

The gathered data was assessed with K_S test and showed no normal distribution. So, linear regression model as used to determine the relationship between emotional variants and independent variants, such as place of services, educations, years of services, age, marital status, type of service, and sex. Frequency percentage of depression, anxiety, and stress (emotional reactions) is shown in Table 1.

Depression, anxiety, and stress value was higher in male personnel. To evaluate the neutralizing effect of dependent variants on various tension-provoking factors, multi-functional linear regression test was applied. There was statistical relationship between age and depression, anxiety and stress from the perspective of sub-scale

Table 2. Regression results for dependent variants of depression, anxiety, and stress among medical emergency staff with population variants.

Staff depression, anxiety, and stress	Depression		Anxiety		Stress		
	Demographics	β	P	β	P	B	P
Education		0.10	0.283	0.147	0.119	0.189	0.04
Age		-0.15	0.177	-0.229	0.038	-0.31	0.004
Years of service		0.39	0.001	0.241	0.019	0.474	0.001
Sex		0.09	0.35	0.13	0.19	0.052	0.591
Place of service		0.168	0.049	0.297	0.001	0.179	0.034
Type of service		0.155	0.14	0.037	0.72	0.033	0.739
Marital status		0.261	0.002	0.001	0.99	0.134	0.097

Table 3. Spearman correlation test about the relationship between stress and anxiety of medical emergency staff and depression.

Variant	Depression		
	Test	Pierson	Correlation coefficient
Staff stress			0.676
Staff anxiety			0.001

Variant	Test	Pierson	Meaningfulness	R²
			Correlation coefficient	
Staff stress			0.001	0.572
Staff anxiety			0.014	0.489

DASS 21 with demographic criteria. DASS-21 showed a significant relationship between marital status and depression; this relationship was not meaningful between marital status and anxiety and stress. Based on regression test, years of service, age, place of service, and education had greatest impact on staff stress; however, marital status, type of service, and sex did not influence the degree of stress. Place of service, years of service, and age were most influential on staff anxiety, but education, marital status, type of service, and sex showed no impact on anxiety. Years of service, marital status, and place of service had meaningful relationship with depression, but education, age, type of service, and sex failed to show such a relationship (Table 2).

Data analysis, through Spearman test, showed that there is meaningful relationship between emergency medical staff stress and their depression. Their direct relationship signifies that the more the stress, the more the depression. Also, there is meaningful relationship between emergency medical staff anxiety and their depression. Their direct relationship signifies that the more the anxiety, the more the depression (Table 3).

DISCUSSION AND CONCLUSION

Present study was conducted to evaluate the degree of stress, anxiety, and depression among the emergency personnel in Kerman University of Medical Sciences in 1392. Based on researches in Europe and USA, 9 to 26% of women and 2 to 5% of men experience some forms of intense depression during their lives (Sardar,2008). Also, based on Assad Zandi's study,

women nurses experience depression more than men nurses (Assad,2011). The results of the present study contradict afore-mentioned findings. One of the reasons may be that the majority of the participants were men and the stressful natures of their jobs which require intervening in risky situations. Based on the results of this study, 72% of under-study staff experience intense stress. Hashemizade, in his study entitle "Investigating time management behaviors and occupational stress among internal surgery matrons stated that 46.6% under-study cases suffer average stress (Hashemi, 1385); this degree was higher in Fathi (Fathi,1382) and Mehraei's (Mehraei,1384)study which was conducted to determine the rate of stress in special nurses. The similarity between nursing and medical emergency might be due to the stressful nature of their jobs. Danesh (1384) stated that higher daily stress results in more intense behavioral instabilities. Aghaee et al. (1380) showed the relationship between stress and anxiety. Wang et al.,(2008), in researches about mental health of the workers, introduced occupational stress as one of the debilitating factors which pave the way for the emergence of psychological disorders (Wang et al., 2008). Having management and leadership skills in emergency situations is a necessary quality for emergency staff; some of the most stressful issues for pre-hospital emergency personnel are: lack of management in the face of unexpected confrontations with the patients, stressful atmosphere, insufficient staff, lack of proper care, and treatment timetable. Since staff are not mentally prepared to cooperate in medical emergencies in Iran, a fact which causes desperation, stress, excitement, and finally depression among pre-hospital

personnel who deal with difficulties and complications, and lack of proper education and knowledge during university years due to occupational uncertainties, the quality of such services is, often, not standard. Lack of necessary attention to pre-hospital emergency (which is an obvious fact among emergency services graduates because of misunderstanding of such services or lack of education), uncertainties of supervision system on different level which is a stressful issue in emergency missions by itself, and confusion surrounding various levels of emergency care make modifications and improvements in Iran's pre-hospital emergency system impossible, a fact which causes desperation and depression among post-graduate students.

The results of the study showed statistical relationship between age and depression, anxiety, and stress. This further proves Goodarzi's finding which stated that this disorder is more common in lower ages (Goodarzi, 2003). Nariman's research revealed a reversed relationship between age and stress. This might be because of the role of experience in performing job responsibilities and developing necessary defense mechanisms. Discrepancy of performance levels in various shifts during 24 h might be due personnel's being young and their lack of experiment. The results of the present study showed that marital status has relationship with depression; this further confirmed Smith's study which stated that women who work are more exposed to stress than housekeepers. Assad Zandi's study showed significant relationship between depression frequency and marital status (Jennifer et al., 2001). It can be said that married people, because of supports they get from family, experience depression much less than single ones.

There was meaningful relationship between years of service and stress and anxiety; this was in line with other findings (Lee and Wang, 2002), like Richi's research, which showed that nurses are people who experience intense stress in daily life (Fathi, 2004). Smith's research about the stress of nurses introduces some stressful factors of nursing job, factors such as facing patients' death, dealing with other staff, lack of preparation for facing emotional issues of patients, lack of organizational support, heavy work, complicated instruction, and no occupational progress. This study showed that the extent of stress and anxiety is directly related to depression. Xianyu and Lambert, 2006 stated that heavy work is a stressful factor. Ruggiero, 2005 in his study concluded that going on holidays reduces stress and depression among nurses. EMS plays a key role in health system and its personnel are constantly under stressful pressures like taking care of patients, job difficulty, and management limitations; some influential factors are controllable, while others are affected by the nature of the job. Pre-hospital emergency staffs are not sufficiently supported in stressful situations; this is while social support reduces job stress; giving random bonus to the

staff and increasing organizational commitment cause higher performance efficiency and lower job stress. Increasing the number and frequency of medical emergencies had heightened physical and mental stress for emergency technicians (Mehrabian et al., 2005). Though stress changes base on the occasion, it is an inseparable part of the job. So, a practical solution is one which immunes emergency personnel against stressful elements. It is clear that regular distribution of emergency staff in urban and road centers can save many lives. No pre-hospital emergency is capable of function without qualified, active, healthy personnel and lack of such a force is a great loss (Vesico and Donahoe, 1999). What guarantees health and reduces stress and anxiety of the staff is scientific management of the workplace to restore the lost spirit and release tension at work; continuation of these problems and failure to attend them, which bother almost all emergency staff, results in depression, as shown in this study.

Exhaustion of emergency staff in a hospital brings about serious loss and high costs; therefore, keeping these personnel motivated and empowering them, who act as the first contact of a patient with pre-hospital system, result in professional and pleasant work environment and keep them capable of any unexpected situation. According to the findings of the study, increasing the number of specialized emergency medical staff, combining work hours with the number of missions to improve work shifts, and establishing two emergency centers in urban areas can, noticeably, reduce the intensity of the work and exhaustion of emergency personnel. Finally, this study specifies following factors for reducing anxiety and depression among personnel: locating a psychotherapist committee in emergency centers, coordinating salary payment system, changing shifts in urban and road centers, considering better welfare facilities and non-financial requirements such as encouraging success from organization, acquainting people with services of emergency system through media, motivating personnel and reminding them the significance of their job so that they apply talent, creativity, experience, specialty, and precision, and, finally, implementing constructive suggestions to develop Kerman EMS system.

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