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Research Article

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Impact of Stress Management Training on the Quality of Life and Occupational Burnout of the Emergency Services Personnel

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Abstract

Background and Objectives: This research aimed to investigate the extent to which stress management training may improve the quality of life (QOL) and occupational burnout (OB) of the operational personnel at emergency services.

Methods: A semi-experimental pretest-posttest study was conducted. The study population includes the operational personnel of Tehran's 115 emergency services. SF-36 questionnaire Maslach Burnout Inventory (MBI) was administered to a sample of 200 personnel followed by selecting 40 individuals with lowest scores. The participants were randomly assigned to intervention and control groups. The intervention group participated in eight sessions of stress management training. Data were analyzed using multivariate analysis of covariance. The changes in scores of SF-36 questionnaire and MBI after the implementation of the training program was evaluated and compared with the those of the control group.

Findings: Stress management training led to a significant improvement in the QoL and a significant reduction in the OB of the personnel in the intervention group as compared with the control group ($P < 0.001$).

Conclusions: Our results recommend the implementation of in-service stress management training programs by the organization followed by regular relevant evaluations to monitor the results in work and personal life, in order to improve the emergency services human resources performance.

Keywords: Stress management, Quality of life, Occupational burnout, Operational personnel, Emergency service.

Background and objectives

Quality of life (QOL) has long been at the center of academic attention and a major concern of health experts and professionals. Researchers believe that QOL evaluations and consequent QOL improvement efforts can have significant positive impacts on both individual and social health.[1]

QOL can be described as a complex set of individual's responses to psychological, physical and social factors that affect their natural life. QOL also refers to one's ability to perform life activities with enjoyment and encompasses a wide range of physical and mental functions. Researchers believe that QOL evaluations that are aimed at improving this factor can make a significant contribution to the health of individuals in their personal and social life.[2] The World Health Organization (WHO) defines QOL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns".[3]

Pre-hospital emergency medicine (PHEM) includes all medical services that are provided, directly or indirectly, to a seriously ill or injured patient before reaching a hospital. Emergency medical technicians are often exposed to chronic stressors such as exposure to patients' injury, unconsciousness, or even death, which in most cases, put the personnel of emergency services under constant psychological pressure. Research has shown that work in stressful environments is often associated with an increased risk of occupational injury, cardiovascular diseases, mental health disorders and occupational burnout (OB).[4] OB refers to the cumulative impact of

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workplace stress that gradually exhausts people and force them into psychological retreat.[4,5] The fact that operational personnel of emergency services need to be present at the scene of incident generates additional negative environmental stress for these people. Also, when the area of service is particularly remote, this remoteness also becomes a source of agitation leading to extra physical and emotional pressure. Occupational burnout is believed to be one of the most important factors undermining the human resources performance. The most prominent definition of OB is the one provided by Jackson and Maslach, who define it as a psychological syndrome consisting of three dimensions of emotional exhaustion, depersonalization, and reduced personal accomplishment.[6,7] The central symptom of burnout is emotional exhaustion, which is a general reaction to stress and manifests in the individual as a feeling of pressure and exhaustion of mental and emotional resources. Depersonalization manifests as a negative or apathetic response to the recipients of service and care and refers to one's negative attitude toward these people. This dimension of OB is specific to the jobs related to human services. The reduced personal accomplishment refers to a feeling a loss of personal merits and capabilities to perform occupational tasks and a negative evaluation of one self's job performance.[7,8]

Given the importance of job performance of emergency service and PHEM personnel as one the most critical components of healthcare system, and the known impacts of chronic stress on the emergence and exacerbation of OB, the existence of a well-planned managerial measure to mitigate the risks of occupational stress and counter the consequent burnout is of significant importance.[4] Considering the nature of pre-hospital medicine jobs and their inherent impacts on the personnel's QOL and OB, it may be impossible to eliminate the stress of these people, but they can be trained to manage this stress and its impacts on their life. The related literature suggests that the interventions to improve the individual's sense of well-being and coping mechanisms are effective in reducing the stress and the risk of OB.[9]

Since occupational stress is known to undermine the individual's health and QOL and increase the probability of occupational injuries.[4] In the present study, however, we investigated, for the first time, the impact of stress management training on QOL and OB of the operational personnel of 115 emergency services in Tehran.

Methods

The present study was a quasi-experimental pretest-posttest research with a control group. Subjects were selected by purposive sampling. The study population was the operational personnel working in Tehran's 115 emergency service in 2016. Using the Cochran's formula, the sample size was calculated to 200. In the first stage of the study, the SF-36 (QOL) questionnaire and the Maslach Burnout Inventory (MBI) were administered to 200 personnel. Then, 40 people with the lowest SF-36 and MBI scores were selected and randomly assigned to two groups of 20 people. In one group, subjects participated in eighth 90-minute group sessions of stress management skills training held by the researcher. The control group did not receive any training or intervention. At the end, both groups were asked to fill out the MBI and SF-36 questionnaire for the second time. The effectiveness of stress management skills training on the SF-36 and MBI scores was investigated. Data analysis to investigate the research hypotheses was carried out using the multivariate analysis of covariance (MANCOVA).

Research instruments

A. SF-36 Questionnaire

The SF-36 questionnaire designed by Ware et al[16] is the most common and comprehensive standard instrument for the evaluation of the QOL. Montazeri et al[17] has translated this questionnaire into Persian and has proven its validity and reliability in Iran.

B. Maslach Burnout Inventory

The MBI is a 22-item questionnaire assessing the 3 dimensions of OB (emotional exhaustion, depersonalization, and reduced personal accomplishment). The reliability of this inventory has been confirmed with Cronbach alpha of 0.78.[18] Table 1 shows a summary of activities undertaken in each session of stress management skills training held for the intervention group.

Results

The inclusion criterion was having a work experience of more than one year. It should also be noted that all operational personnel of the studied emergency service were male. The results presented in Table 2 show the mean and standard deviation of pre-test and post-test SF-36 and MBI scores in each of their dimensions in the intervention and control groups. As shown in this table, the mean pre-test and post-test SF-36 scores were 49.12 and 69.25 in the intervention group and 51.33 and 55.78 in the control group. The mean pre-test and post-test MBI scores were 76.42 and 95.12 in the intervention group and 87.29 and 92.33 in the control group.

The results of the multivariate analysis of QOL dimensions of the operational personnel of Tehran's 115 emergency service are presented in Table 3. The results

Table 1. Summary of Stress Management Skills Training Sessions

Session No.	Summary of Activities Undertaken in the Session
1	Presenting an introduction to the importance and necessity of stress management skills training Providing a definition for stress and explaining how and why people respond differently to stress
2	Explaining how stress affects different organs, the physical, psychological and behavioral manifestations of stress, the consequences of indifference to stress, and mental methods of reducing stress levels
3	Explaining the rational strategies to handle stress, the problem-focused and emotion-focused methods of addressing stress, and the coping methods of individuals in stressful situations
4	Presenting an introduction to the steps of stress management skill, practicing the first step of this skill, and explaining how to gain awareness of one self's feelings
5	Explaining the methods of strengthening self-esteem, self-confidence, and dealing with depression and anxiety Teaching the personal and social communication skills
6	Explaining the methods of adaptation to life and how to physically deal with stress Practicing the second step of stress management skill, and reviewing the long-term and short-term methods of neutralizing stress Presenting an introduction to relaxation methods as a therapeutic approach and behavioral therapy technique (in this research, this stage of training was focused on progressive relaxation of 16 muscle groups)
7	Explaining the physical methods of coping with stress and the ways to have a healthier lifestyle. Emphasizing the importance of healthy diet, and regular sleep and exercise in maintaining and strengthening the immune system and increasing the energy levels
8	Practicing progressive relaxation and answering participants' questions in this regard to make sure that all participants develop satisfactory proficiency in using this method collecting the participants' comments and feedbacks

Table 2. Pre-test and Post-test SF-36 and MBI Scores in Each of Their Dimensions in the Intervention and Control Groups

Variables	Intervention Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Quality of Life	49.12	12.41	69.25	11.14	51.33	16.25	55.78	14.22
General health	7.50	1.23	12.65	1.30	7.65	1.26	6.85	1.75
Physical functioning	13	1.58	17.55	1.73	12.30	1.65	12	1.33
Role limitations due to physical health	5.12	0.56	7.75	0.71	4.65	0.67	4.80	0.69
Role limitations due to emotional problems	5	0.79	7.50	0.88	5.15	0.87	5.20	0.52
Pain	4.65	0.98	4.70	1.03	4.20	0.83	4.30	1.08
Social functioning	5.35	0.67	7.45	0.75	4.45	0.99	4.45	0.88
Energy/fatigue	7.10	1.07	12.20	1.39	6.90	1.29	7.25	1.37
Emotional well-being	7.95	0.94	13.15	1.26	6.80	1.43	7.05	1.57
Occupational Burnout	95.12	13.16	76.42	11.12	92.33	16.44	87.29	9.9
Emotional exhaustion	38.12	4.12	22.54	3.97	36.52	5.23	31.42	4.52
Depersonalization	21.50	2.82	16.5	2.32	21.10	2.32	19.99	2.46
Reduced personal accomplishment	22.17	6.69	34.55	4.4	21.12	5.58	23.11	3.2

presented in this table show the statistical significance of the impact on all dimensions.

As shown in Table 4, the results of MANCOVA revealed a significant difference between the intervention and control groups in terms of QOL ($F=108.30$, $P<0.01$) and all of its dimensions except pain. After comparing the mean pre-test and post-test scores of these dimensions in the intervention group (Table 2), it was found that stress management skills training led to increased mean scores in these dimensions in the post-test.

As shown in Table 5, there is a significant difference between the intervention and control groups in at least one of the dependent variables.

As shown in the above table, the multivariate covariance analysis revealed a significant difference between the intervention and control groups in terms of MBI score ($F=0.073$, $P<0.01$) and its dimensions. Comparison of the mean pre-test and post-test scores of these dimensions in the intervention group (Table 2) showed that stress management skills training resulted in reduced mean scores in these dimensions in the post-test. When compared to emotional exhaustion and depersonalization, the reduced personal accomplishment was found to have a low impact on MBI score. This difference can be further

Table 3. Evaluation of Differences Between the Control and Intervention Groups in Terms of QOL Dimensions

Source	Variable	Value	F	df_1	df_2	*P* Value	η_p^2
Group	Pillai's Trace	0.967	85.032	8	23	0.001	0.967
	Wilks's lambda	0.033	85.032	8	23	0.001	0.967
	Hotelling's Trace	29.576	85.032	8	23	0.001	0.967
	Roy's greatest root	29.576	85.032	8	23	0.001	0.967

Table 4. Multivariate Analysis of Covariance of the Impact of Group Membership on the QOL Score and the Scores of its Dimensions

Source	Variable	SS	*df*	MS	*F*	*P* Value	η_p^2
Group	**Quality of Life**	187.289	1	187.289	108.305	0.001	0.776
Group	Physical functioning	164.377	1	164.377	108.305	0.001	0.783
Group	Role limitations due to physical health	53.797	1	53.797	114.703	0.001	0.793
Group	Role limitations due to emotional problems	43.569	1	43.569	105.737	0.001	0.779
Group	Energy/fatigue	141.753	1	337.497	141.753	0.001	0.918
Group	Emotional well-being	161.735	1	161.735	165.139	0.001	0.846
Group	Social functioning	35.541	1	35.541	98.988	0.001	0.767
Group	Pain	0.031	1	0.031	0.036	0.851	0.001
Group	General health	277.962	1	277.962	125.137	0.001	0.807

Table 5. Multivariate Covariance Analysis of Differences Between the Control and Intervention Groups in Terms of Occupational Burnout Dimensions

Source	Variable	Value	F	df_1	df_2	*P* Value	η_p^2
Group	Pillai's Trace	0.989	219.116	9	23	0.001	0.989
	Wilks's lambda	0.011	219.116	9	21	0.001	0.989
	Hotelling's Trace	93.907	219.116	9	21	0.001	0.989
	Roy's greatest root	93.907	219.116	9	21	0.001	0.989

examined in Table 6.

Discussion

This study investigated the impact of stress management skills training on QOL and OB of the operational personnel of Tehran's 115 emergency services. The results showed a significant difference between the mean QOL scores of the intervention and control groups at the post-test stage, indicating that the stress management training sessions held for the intervention group resulted in improvement in their QOL. The results also demonstrated the effectiveness of stress management skills training on the dimensions of QOL, namely physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, and general health of the personnel in the intervention group. This result is consistent with the finding of the study conducted by Chang et al[14] on the effectiveness of such programs and training on the QOL of nurses in South Korea. A research carried out by Ratanasiripong et al[19] also reports mental health improvement following the implementation of a stress management training program. Many studies conducted on the effects of stress management training have emphasized the impact of stress management strategies on the QOL.[12-15] In this regard, Kravits et al[22] report that a combination of self-care programs, such as relaxation training, social support, cognitive techniques, sports, and music in the format of a planned stress management program reduces the stress of nurses and improves their ability to utilize stress coping strategies. Our finding is also consistent with the results of the research carried out by Shirbim et al[23] on nursing and midwifery students of Gachsaran University, which showed that stress management skills training reduced physical syndrome and anxiety of these students.

This finding can be explained according to the view of Lazarus and Folkman, who believe that when coping with stress, people with access to support resources exhibit less vulnerability to pressure. In the present study, stress management skills training acted as a support resource

Table 6. Multivariate Covariance Analysis of The Impact of Group Membership on The MBI Score and the Scores of its Dimensions

Source	Variable	SS	*df*	MS	F	*P* Value	η_p^2
Group	Occupational burnout	1707.071	1	1707.071	330.073	0.001	0.919
Group	Emotional exhaustion	1302.855	1	1302.855	405.487	0.001	0.933
Group	Depersonalization	1069.801	1	1069.801	332.034	0.001	0.920
Group	Reduced personal accomplishment	735.791	1	735.791	220.680	0.001	0.844

enabling the participants to adopt effective stress coping strategies. Likewise, Andersen et al[24] believe that stress progression can be controlled by learning the right skills, and the persons' perceived stress level can be reduced by adjusting their assessment system.

The results of this study also showed a significant difference between the MBI scores of the intervention and control groups at the post-test stage, which points to the effectiveness of stress management skills training on the OB of 115 emergency service personnel in the intervention group. The results also demonstrated the positive impact of stress management skills training on the dimensions of OB, namely emotional exhaustion, loss of personal accomplishment, and depersonalization of the personnel in the intervention group. This finding is consistent with the results of the research conducted by Hersch et al,[25] which reports that stress management training programs reduce the burnout of nurses.

This part of our findings is also in agreement with the results of Hamid et al,[11] Pashib et al[13] and Essex and Scott,[26] who report that stress management training reduces the burnout of nurses and improves their job satisfaction. In view of the observed effectiveness of stress management skills training on the QOL and OB of the operational personnel of Tehran's 115 emergency service, and considering the role of stress management in personal and organizational productivity,[27] the high occupational stress among pre-hospital emergency staff,[26] and the direct relationship of job stress with OB (due to stress being an important cause of emergence and exacerbation of burnout), the existence of a focused program to mitigate the risks resulting from occupational stresses and prevent their consequences is of significant importance. The results of this study indicate that the implementation of a stress management skills training program for the operational personnel of 115 emergency services will improve their QOL and reduce their OB. In view of the results observed in this study, the authors strongly recommend further attention to stress management skills training in stressful work environments, particularly for the people like emergency medical technicians, whose performance at their inherently stressful job involve high-stakes outcomes. Preferably, such training should be provided in the form of in-service training strictly planned and supervised by the organization in charge and should be followed by regular evaluations to monitor the results in work and personal life.

Conclusion

Like most researches in behavioral science, the present study faced a number of limitations in various stages of work. One important limitation of this study was the restriction of the statistical population to the operational personnel of 115 emergency services in Tehran. Thus, one should exercise caution in generalizing the results to other groups and populations. Another limitation of the study was the use of questionnaires, which can expose the results to error due to inaccuracy in the responses of subjects. The last limitation of the study was the absence of any follow-up. Future researches are, therefore, suggested to utilize other QOL evaluation instruments and to examine the effectiveness of stress management skills training on job satisfaction, job motivation and job performance of operational personnel of 115 emergency services. Also, since the present work was focused only on the operational personnel of Tehran's emergency service, future researches are suggested to include the personnel working at other positions and other parts of the country as well.

Abbreviation

(QOL): quality of life; (OB): occupational burnout; (PHEM): Pre-hospital emergency medicine.

Competing Interests

The authors declared no competing interests.

Authors' Contributions

xxx.

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