

The Effect of Stress Management Training through Cognitive Behavioral Therapy on the Quality of Work Life and job Satisfaction of Pre-Hospital Emergency Workers

Marjan Vahdati¹, Tahereh Baloochi Beydokhti², Abbas Ghodrati Torbati³, Javad Bazeli^{4,*}

1. Master's student in emergency nursing, School of Nursing, Gonabad University of Medical Sciences, Gonabad, Iran
2. Assistant Professor of Nursing, Department of Medical Emergencies, School of Nursing, Social Development and Health Promotion Research Center, Gonabad University of Medical Sciences, Gonabad, Iran
3. Assistant professor in Psychology, school of Nursing, Torbat Heydariyeh Medical University of Sciences, Torbat Heydariyeh, Iran
4. Assistant Professor of Health in Disasters and Emergencies, Department of Medical Emergencies, School of Nursing, Nursing Research Center, Gonabad University of Medical Sciences, Gonabad, Iran

* **Corresponding author:** Bazeli, Javad. Assistant Professor in Health in Disasters and Emergencies, School of Nursing, Gonabad University of Medical Sciences, Gonabad, Iran. Email: javad_bazeli@yahoo.com

Received 2024 April 24; **Accepted** 2024 September 11.

Abstract

Background: High levels of occupational stress and medical emergencies lead to a reduction in the quality of work life and job satisfaction and ultimately lead to a reduction in the quality of patient care, so measures should be taken in this regard.

Objectives: Stress management training effectively reduces occupational stress and increases the quality of work-life and job satisfaction of employees. Therefore, the present study aims to investigate the effect of stress management training using cognitive behavioral therapy on the quality of work life and job satisfaction of pre-hospital employees working in the management center. Accidents and medical emergencies were done.

Methods: The current research is a clinical trial conducted on 60 pre-hospital emergency personnel. The participants were randomly divided into two intervention and control groups, and for the intervention group, ten sessions of stress management training were held using the cognitive-behavioral method. The questionnaires were completed before and after the intervention, and the results were analyzed using SPSS software.

Results: There was a significant difference in the average quality of work life and job satisfaction after the intervention in the two groups ($p < 0.05$) and comparing the average job satisfaction scores in the intervention group compared to the control group

Conclusion: Considering that the profession of emergency medicine is one of the most stressful jobs in the world, and pre-hospital workers are constantly facing critical conditions and physical and mental stressors, continuous experience of stressful conditions can threaten physical health.

Keywords: Stress management training, Cognitive behavioral therapy, quality of work life, Job satisfaction, Pre-hospital emergency workers

1. Background

Stress is a situation that most of us face in

our daily lives, both in the family and in the community and the surrounding environment,

and it is considered one of the most critical problems of our time and affects the quality of work life (1, 2). Today, stress is an inseparable and undeniable part of jobs and modern life (3, 4), so the World Health Organization has listed it as a health epidemic of the 21st century, and the American Psychological Association has also considered chronic stress as one of the six leading causes of death (5).

The quality of work life is the mentality, understanding, or perception of employees about the physical and psychological desirability of the work environment(6). It refers to the level of satisfaction with the work and life process, which includes work or personal experience, financial income, happiness, social interaction, and physical health. (7). It has become one of the requirements of organizations to attract and maintain talented and efficient human resources. It is necessary for the progress and productivity of the organization, and it is the main factor related to employees' occupational and organizational commitment (8). Most empirical research on quality of work life implicitly accepted a new approach to job stress and job-related concepts (9). Today, the quality of work life is a fundamental social issue worldwide. Promoting this quality affects job satisfaction, organizational identity, work participation, job performance, leaving service, organizational change, and transformation (10, 11). Numerous studies have shown that employees with a higher quality of work life have more job satisfaction and a more coherent organizational identity, are interested in work, and are more committed to their organization (12).

Job satisfaction, which is the main priority in the policy of all organizations, is a favorable or pleasant emotional state that results from a person's evaluation of his job or work experiences and is the essential component for motivating and encouraging better performance in employees (13), on the other hand, one of the challenges It is the most exciting organizational concept that forms the

basis of many policies and management policies to increase the productivity and efficiency of the organization and is a valuable criterion for determining performance (14).

Applying approaches to reduce occupational stress helps to improve the mental health of pre-hospital workers and improves the quality of patient care (15). There are many ways to reduce the occupational stress of pre-hospital workers. In this regard, identifying factors of dissatisfaction and occupational stress, providing continuous training in stress management skills, using strategies such as massage therapy, improving comfort facilities gratitude and management measures such as reducing shifts and Working hours effectively reduce occupational stress of pre-hospital workers (16).

Another effective way to deal with occupational stress is stress management training, one of the cognitive-behavioral therapies Ellis first proposed. According to this approach, cognitive behavioral therapy helps people solve problems by removing interactive patterns that perpetuate the problem and strengthening positive behaviors instead of negative ones (17). The cognitive-behavioral approach has introduced itself as flexible and subject to scientific data in psychotherapy (18). Stress management training leads to identifying internal and external psychological pressures and pathologies, and its purpose is to empower people to deal with stress(19).

Pre-hospital emergency workers, who play an essential role in saving human lives in the health system, experience high job stress regarding the nature of their jobs, which negatively affects the quality of work, personal life, and job satisfaction. Identifying the factors that cause and aggravate occupational stress and ways to manage it will effectively improve the quality of work life and job satisfaction of pre-hospital emergency workers. Many studies about different groups have discussed stress management training in the way of cognitive behavioral therapy (20). However, so far in Iran, no research has investigated the effect of stress

management training through cognitive behavioral therapy on the quality of work life and job satisfaction of pre-hospital emergency workers, so we decided to conduct this research to improve and improve satisfaction.

2. Objectives

Stress management training effectively reduces occupational stress and increases the quality of work-life and job satisfaction of employees. Therefore, the present study aims to investigate the effect of stress management training using cognitive behavioral therapy on the quality of work life and job satisfaction of pre-hospital employees working in the management center. Accidents and medical emergencies were done.

3. Methods

The current research is a before-after clinical trial with a control group conducted on the operational staff of the pre-hospital emergency department of Gonabad University of Medical Sciences in 2023. After obtaining permission to conduct the research from the vice president of research and the ethics committee of Gonabad University of Medical Sciences and the approval of the vice president of research of Gonabad University of Medical Sciences after receiving the permission of the ethics committee before the intervention, the necessary explanations were first given to the subjects about the objectives of the research, and after Obtaining the informed consent of the people included in the plan.

The sample size was calculated based on the results of the Emerald study and by using the statistical formula of comparing the averages with a confidence level of 99% and a test power of 90, and the number of 28 people in each group was obtained, with the 15% chance of dropping samples, the number of people in each group was 32. (32 people in the experimental and 32 in the control group). The samples were randomly divided into

intervention and control groups using the permutation block method. All 64 people completed the questionnaires on demographic information, job satisfaction in Minnesota, and Walton's quality of work life (Figure 1). Inclusion criteria include: operatives working in the accident and emergency management center, consent to participate in the study, having at least 2 years of work experience, no history of participating in any type of stress management program, not suffering from any mental disorder, not using any Sedative and anti-anxiety drug and exit criteria included: simultaneous participation in other stress management programs, receiving individual counseling or drug therapy, absents more than two sessions in training sessions, refusing to continue participating in the research and not doing the tasks specified in the training process. Cognitive behavioral therapy intervention (CBT) was implemented in the experimental group during 90-minute sessions (two sessions per week) as face-to-face sessions (Table 1). The intervention lasted one month. One week after the end of the last session, the intervention group was tested again for perceived stress, Minnesota job satisfaction, and Walton's Quality of Work Life questionnaires. Also, after the end of the study, cognitive behavioral therapy (CBT) was held as face-to-face sessions for the control group. The study data were analyzed with SPSS version 22 statistical software. Descriptive statistics were used to determine central tendency and dispersion indices for quantitative variables and frequency determination for qualitative variables. The Kolmogorov-Smirnov test checked the normality of the variables. A paired t-test was used to compare the average stress, quality of work life, and job satisfaction before and after the intervention, and an independent t-test was used to compare the average of these variables in two groups. Due to the non-observance of quantitative data from normal distribution, equivalent non-parametric tests, namely Will-Coxon, were analyzed by

independent chi-square and t-test using SPSS No. 21 software.

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 (S_1^2 + S_2^2)}{(X_1 - X_2)^2}$$

Walton's Quality of Work Life Questionnaire (QWL)

In order to collect information related to the quality of work life variable, Walton's Quality of Work Life Questionnaire was used, which includes 32 questions with a five-point Likert scale (very low = 1, low = 2, medium = 3, high = 4, very high = 5) and the minimum score of this questionnaire is 32 and the maximum score is 160. This questionnaire has been used in numerous research studies abroad and inside the country, which shows its high validity and reliability. Walton reported that

the reliability coefficient of the questionnaire was 0.88 (21). Cronbach's alpha coefficient of this questionnaire was reported as 0.83 by Rahimi et al. (22) and 0.91 by Mehdad et al. (23).

Minnesota Job Satisfaction Questionnaire

The Minnesota Questionnaire (MSQ) was used to collect information about job satisfaction, which consists of 19 items and six subscales. The scoring of the Minnesota Job Satisfaction Questionnaire is in the form of a Likert scale, which was considered as 1, 2, 3, 4, and 5 for the options of completely disagree, disagree, have no opinion, agree, and completely agree (24). In Nasrabadi et al.'s research, the reliability of the Minnesota Job Satisfaction Questionnaire has been confirmed with Cronbach's alpha coefficient of 0.92(25).

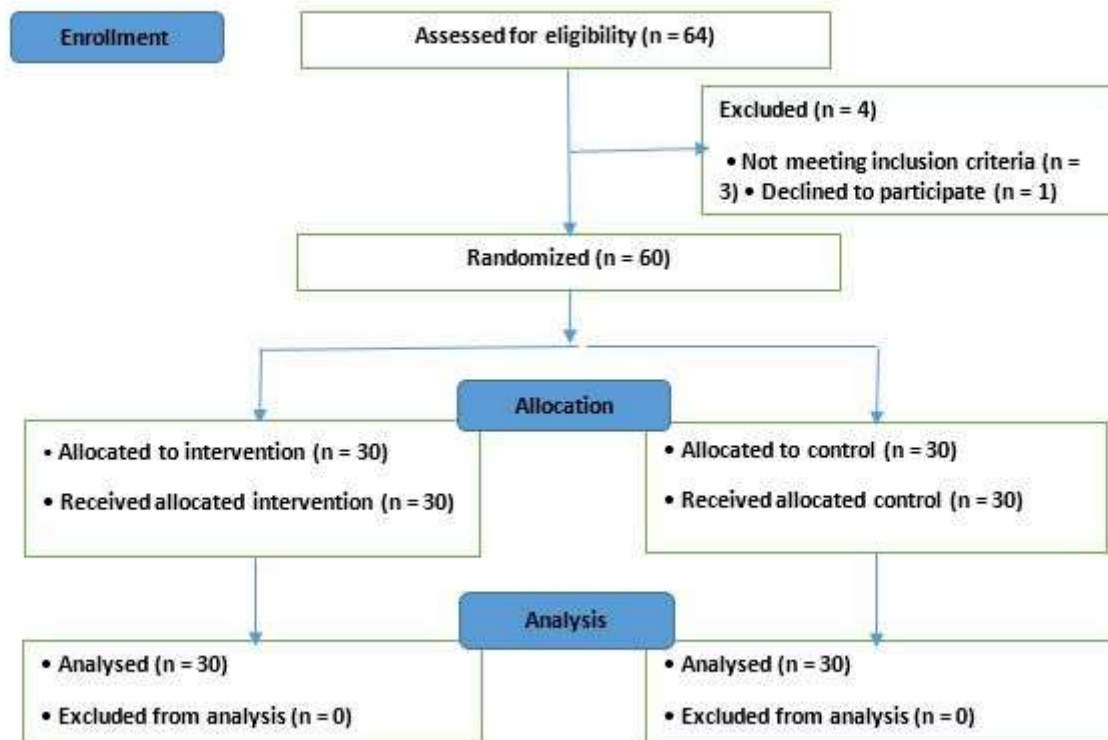


Figure 1. Consort Diagram

Table 1. Titles of cognitive-behavioral stress management sessions according to the protocol of Anthony et al. (2007)

Number of sessions	The purpose of the meeting
1	Familiarization with the patient and explanations about the generalities of the intervention, conducting the clinical interview, conducting the pre-test
2	Definition of stress, identification of stressful situations and factors, psychological, social, and physiological effects of stress
3	Preparing for training, choosing techniques to reduce stress, implementing mental imagery and other effective techniques
4	Relaxation technique training and mental imaging technique evaluation
5	Cognitive recovery, assessment of relaxation technique and homework review, and identification of negative thoughts and feelings
6	Guided self-command training or guided dialogue cognitive reconstruction
7	Behavioral practice of coping or role-playing, predicting stressful interactions, and conducting behavioral practice of coping
8	Gradual exposure to reality and paying close attention to the client's assessment of their probability of success
9	Summarizing the contents and resolving the doubts of the clients during the treatment sessions about nutrition and beneficial activities such as exercise and walking
10	Post-test implementation

4. Result

According to Table 2 and the Chi-square test results, the demographic variables between the studied groups regarding age, years of service, marital status, employment status, education level, and base type did not differ significantly and were homogeneous

($P > 0.05$).). Also, according to Table No. 3, the results of the Kolmogorov-Smirnov test showed that years of service, job satisfaction, and perceived stress before and after the intervention in the two groups had a normal distribution.

Table 2. Comparison of average demographic characteristics of research units in two intervention and control groups.

Group / Variable	Case	Control	Chi-squared	sig
	Mean \pm SD	Mean \pm SD		
Age	36.17 \pm 7.32	34.27 \pm 7.21	0.326	0.099
work experience	8.5 \pm 6.29	6.43 \pm 5.97	0.197	0.304
Single	(10) 3	(30) 9	0.153	0.715
Married	(90) 27	(70) 21		
Official	(66.7) 20	(63.3) 19	0.781	0.073
unofficial	(33.3) 10	(36.7) 11		
Associate degree	(50) 15	(60) 18	0.431	0.606
Undergraduate	(50) 15	(40) 12		
Urban base	(26.7) 8	(30) 9	0.772	0.082
Road base	(73.3) 22	(70) 21		

Table 3. Checking the normality of data distribution by Kolmogorov Smirnov test

Group / Variable	p-value(Case)	p-value(Control)
Age	0.38	0.53
work experience	0.43	0.26
Job satisfaction before the intervention	0.72	0.82
Job satisfaction after the intervention	0.16	0.33
Quality of work life before the intervention	0.24	0.73
Quality of work life after intervention	0.68	0.58

According to Table No. 3, the results of the Kolmogorov-Smirnov test showed that the distribution of the variables of years of service,

later job satisfaction, and perceived stress before the intervention showed no statistical differences in the two groups ($p>0.05$).

Table 4. Comparison of the average scores of quality of life and job satisfaction in two groups before and after the intervention					
Group / Variable		Case	Control	t-test value	P-Value
		Mean \pm SD	Mean \pm SD		
Quality of work life	Before intervention	94.86 \pm 9.4	96.4 \pm 8.2	7.539	0.714
	After the intervention	98.16 \pm 8.78	83.4 \pm 12.5	6.481	0.002
Job satisfaction	Before intervention	56.96 \pm 10.43	55.94 \pm 6.69	4.162	0.648
	After the intervention	64.9 \pm 9.55	56.43 \pm 6.68	5.238	0.004

According to Table 4, the two groups' average scores regarding quality of work life and job satisfaction before the intervention were not significantly different ($P>0.05$). However, the average scores of the quality of work life in the intervention group compared to the control group increased after the intervention ($P= 0.002$). Also, the two groups' job satisfaction scores after the intervention show a significant difference ($P = 0.001$), and the job satisfaction mean scores in the intervention group have increased compared to the control group.

5. Discussion

This study examined the effect of stress management training through cognitive behavioral therapy on the quality of work life and job satisfaction of pre-hospital emergency workers. The results of the research showed that the perceived stress scores of the pre-hospital workers before and after the intervention of the two groups were not significantly different in terms of perceived stress, which is similar to the results of similar studies, including the studies of Shadfar (26), Nadi et al. (27), Safai et al. (28) were in agreement.

The subsequent finding of the research showed the impact of stress management training in the way of cognitive behavioral therapy on the quality of work life of pre-hospital emergency workers, which is in line

with the results of similar studies such as Dakar et al. (28), Hossein Abadi et al. (29), Kohsari et al. (30), Karimi et al. (31), Abed et al. (32) were consistent.

The research findings can be explained in the cases considered in stress management training based on cognitive behavioral therapy. According to the types of skills taught in the cognitive-behavioral stress management intervention group, including relaxation skills, learning effective and efficient coping skills in dealing with stressful situations, anger management, and correction of cognitive errors and distortions that occur in many The leading causes are negative thoughts and catastrophizing, it seems that the cognitive-behavioral stress management intervention increases the patient's personal control and sense of self-sufficiency in facing anxiety-provoking and stressful situations, and in this sense improves the patient's quality of life. It helps (33). Also, the situation that stress management training provides for expressing excitement and expressing problems and concerns caused by work stress in the company of similar people is not ineffective in improving the quality of work life and increasing the happiness of these people. According to the nature of their job, pre-hospital emergency workers usually bear more stress, so stress management training in a cognitive-behavioral way helps these people to feel more in control of their conditions by calming and controlling their stress. This issue

will effectively increase their happiness (34). It can also be said that cognitive-behavioral treatment methods are based on the concept that cognitive evaluation of stressful events and coping measures related to these evaluations play an important role in determining the stress response. Cognitive-behavioral therapy aims to change maladaptive ways of thinking, emotions, and behavior to benefit from cognitive-behavioral techniques (35). Stress management helps people identify the situations that cause stress and seek help from coping strategies to face these situations. Improving cognitive evaluations and coping skills is used to face stressful life situations.

Another finding of the research showed the effect of stress management training in the way of cognitive behavioral therapy on the job satisfaction of pre-hospital emergency workers, which is in line with the results of similar studies such as Tillman (36), Demora et al. (37), Farahani and Ebadi (38).), Rabiei et al. (39), Mohammadiou et al. (40), Basbrou et al. Stress in pre-hospital emergency workers affects the quality of their work and, ultimately, their job satisfaction, so stress management training is necessary. Managers of pre-hospital emergencies should provide a healthy work environment for employees, and mental health screening can be suitable for resource management and intervention programs (42). Also, teaching stress control skills helps promote healthy behaviors. In the first years of employment, many of the employees who work in the clinic experience burnout and change their jobs due to depression caused by the high-stress work environment (43).

In general, psychological interventions, including stress management training in the form of cognitive behavioral therapy, focusing on the crucial and influential dimensions of cognition and changes in the behavioral expression of people, leave positive and stable effects on their lives (44). The results of this research present a valuable view of the complexity of studies related to the effects of environmental stressors on the job satisfaction

of hospital emergency room workers and indicate the fact that the provision of psychological intervention treatments, in terms of efforts to improve Job satisfaction of pre-hospital emergency workers is valuable and practical and its continuation is necessary and necessary.

The current research also had limitations, including the small number of participants. Therefore, the generalizability of the findings requires more research with larger samples. It is also suggested that this research be repeated in other organizations Because comparing the findings of this research with other results in other organizations leads to a better understanding of the studied phenomena and leads to more coherent conclusions in the field of stress management. Also, in future research, more attention should be paid to the role of personality traits. It is better to investigate the effect of stress management training on other structures of organizational behavior in future research and to emphasize the role of variables such as the amount of income and different workloads of people.

6. Conclusion

Considering that the profession of emergency medicine is one of the most stressful jobs in the world, and pre-hospital workers are constantly facing critical conditions and physical and mental stressors, continuous experience of stressful conditions can threaten physical health.

Acknowledgments: This article is the result of the master's degree thesis in emergency nursing with the ethics committee code IR.GMU.REC.1402.071. Therefore, we would like to thank all the officials and staff of the pre-hospital emergency department of the Medical Emergency and Accident Management Center of Gonabad University of Medical Sciences for their participation in the implementation of this research project.

Availability of data and materials: No

restrictions.

Conflicts of interest : The authors declare no conflict of interest in this study.

Consent for publication: Not Applicable.

Ethics approval and consent to participate: This study has a code of ethics with the code IR.GMU.REC.1402.071 and informed consent was obtained to participate in this research. The study was conducted in accordance with the principles of the Helsinki Declaration.

Financial disclosure: No financial support was received for this study.

Authors' contribution: 1. Conceptualization and design of the study (Ghodrat Torbati, A.), data collection (Vahdati, M.), analysis and interpretation of data (Bazeli, J.);

2. Drafting the article or revising it in order to compile thoughtful content (Baloochi Beydokhti, T.);

3. Final approval of the manuscript before sending it to the journal (Bazeli, J.);

References

- Altindag O. Relationship between stress management and job performance in organizations. *International Journal of Research in Business and Social Science* (2147-4478). 2020;9(2):43-9. <https://doi.org/10.20525/ijrbs.v9i2.636>
- Singh MM, Amiri M, Sabbarwal S. Role of job stress on job satisfaction. *International Journal of Management Studies*. 2019;6(4):57-60. <https://doi.org/10.18843/ijms/v6i4/08>
- Pandey DL. Work stress and employee performance: an assessment of impact of work stress. *International Research Journal of Human Resource and Social Sciences*. 2020;7(05):124-35.
- Torbati AG, Abbaspour S, Zandi A. Efficacy of psychoeducational intervention on depression and anxiety after discharge in patients with COVID-19. *Journal of Public Health and Development*. 2022:209-20. <https://doi.org/10.55131/jphd/2022/200317>
- Lukić JM, Lazarević SL. Sources of workplace stress in service sector organisations. *Facta Universitatis, Series: Economics and Organization*. 2018:217-29. <https://doi.org/10.22190/FUEO1803217L>
- The survey of quality of work life and determination of its related factors in Shiraz University of Medical Sciences staff
- Tian X, Swatdikun T, Chalomklang C. The Impact of Quality of Work Life and Organization Commitment on Turnover Intention: Empirical Evidence from Dunhuang Academy, China. *Science, Technology, and Social Sciences Procedia*. 2023;2023(2):CiM03-CiM.
- Abebe A, Assemie A. Quality of work life and organizational commitment of the academic staff in Ethiopian universities. *Heliyon*. 2023;9(4). <https://doi.org/10.1016/j.heliyon.2023.e15139> PMID:37089320 PMCID:PMC10113870
- Imani B, Karamporian A, Hamidi Y. The relationship between quality of work life and job stress in employees the foundation of martyrs and veterans affairs of Hamadan. *Journal of Military Medicine*. 2014;15(4):253-7.
- Hamidi Y, Vakilian M, Roshanaei G, Makvandi Z, Atogara M, Bayat F. Correlation of nurses' Quality of working life and job satisfaction in Hamadan University of Medical Sciences teaching hospitals. *Avicenna Journal of Nursing and Midwifery Care*. 2019;27(1):64-72. <https://doi.org/10.30699/ajnm.27.1.64>
- Abadi F, Abadi F. Survey factors affecting the quality of work life in the clinical nurses. *Nursing And Midwifery Journal*. 2019;16(11):832-40.
- Kelbiso L, Belay A, Woldie M. Determinants of Quality of work life among nurses working in Hawassa town public health facilities, South Ethiopia: a cross-sectional study. *Nursing research and practice*. 2017;2017. <https://doi.org/10.1155/2017/5181676> PMID:29379654 PMCID:PMC5742902
- Seyyedmoharrami I, Dehaghi BF, Abbaspour S, Zandi A, Tatari M, Teimori G, Torbati AG. The relationship between organizational climate, organizational commitment and job burnout: Case study among employees of the university of medical sciences. *The Open Public Health Journal*. 2019 Mar 19;12(1).

- <https://doi.org/10.2174/1874944501912010094>
14. Iman S, Khaula A, Maryam T, Sedigheh A, Anahita Z, Gholamheidar TB, Abbas GT. Accomplices of job burnout among employees of a medical university. *Russian Open Medical Journal*. 2019;8(1):105. <https://doi.org/10.15275/rusomj.2019.0105>
 15. Bahadori M, Ravangard R, Raadabadi M, Hosseini-Shokouh SM, Behzadnia MJ. Job stress and job burnout based on personality traits among emergency medical technicians. *Trauma Monthly*. 2019;24(6):24-31.
 16. Dobson D, Dobson KS. Evidence-based practice of cognitive-behavioral therapy: Guilford publications; 2018.
 17. Ghaderi F, Akrami N, Namdari K, Abedi A. Comparing the effects of integrated cognitive-behavioral therapy and transdiagnostic treatment on symptoms of patients with generalized anxiety disorder comorbid with depression. *Iranian journal of psychiatry and clinical psychology*. 2022;27(4):440-57. <https://doi.org/10.32598/ijpcp.27.4.3067.3>
 18. Babaie E, Golestani T, Nazoktabar H, Entezari R. The Effect of Stress Management Training on Self-efficacy and Quality of Life in Nurses of Government Hospitals in Tehran City. *Journal of Health and Care*. 2020;22(2):157-67. <https://doi.org/10.52547/jhc.22.2.157>
 19. Abbaspour S, Tajik R, Atif K, Eshghi H, Teimori G, Ghodrati-Torbati A, Zandi A. Prevalence and correlates of mental health status among pre-hospital healthcare staff. *Clinical practice and epidemiology in mental health: CP & EMH*. 2020;16:17. <https://doi.org/10.2174/1745017902016010017> PMID:32508966 PMCID:PMC7254819
 20. Karimi Rad R. The mediating role of professional ethics in the relationship between sport exercise and quality of work life and job performance (Case Study of Education Departments of Sistan and Balochistan). *New Trends in Sport Management*. 2022;9(35):65-82.
 21. Rahimi R. Surveying the Quality of work life of faculty members of Isfahan University. End of Master's Degree in Management Education, Isfahan University. 2006.
 22. Mahdad A, Mahdavi Rad N, Golparvar M. The relationship between quality of work life (QWL) and its components with organizational commitment and its components. *New findings in psychology*. 2011;5(20):53-41.
 23. Moafimadani SK, Khalatbari J. The relationship between quality of work life and job satisfaction and burnout, with the mediation of emotional intelligence. *Journal of Process Engineering*. 2019;5(11):46-66.
 24. Nasrabadi HB, Rajaipour S, Salimi Q, Taherpour F, Partovi M. Examine the relationship between job content and job satisfaction. *Res. Administration*. 2009:57-76.
 25. Shadfard Z, Taghizadeganazadeh M, Pournouroz N, Maarefi F, Badiyepymaiejahromi Z. Investigating the role of self-esteem, happiness and hospital's ethical climate in predicting perceived stress of paramedical students. *Research in Medical Education*. 2020;12(3):44-54.
 26. NadiRavandi M, SedighArfaei F, Barbari M. The Relationship Between Personality Traits and the Strategies of Coping with Levels of Perceived Stress in Nurses. 2015. <https://doi.org/10.29252/ijn.28.97.11>
 27. Ducar DM, Penberthy JK, Schorling JB, Leavell VA, Calland JF. Mindfulness for healthcare providers fosters professional quality of life and mindful attention among emergency medical technicians. *Explore*. 2020;16(1):61-8. <https://doi.org/10.1016/j.explore.2019.07.015> PMID:31471216
 28. Hosseinabadi R, Karampourian A, Beiranvand S, Pournia Y. The effect of quality circles on job satisfaction and quality of work-life of staff in emergency medical services. *International emergency nursing*. 2014;21(4):264-70. <https://doi.org/10.1016/j.ienj.2012.10.002> PMID:23266112
 29. Koohsari E, Darban F, Safarzai E, Kordi M. Understanding the effect of post-traumatic stress on the professional quality of life of pre-hospital emergency staff. *Emergency Nurse*. 2023;31(6).
 30. Karimi Z, Darban F, Karimi S, Safarzai E. The effectiveness of communication skills training on professional performance and quality of work life of pre-hospital emergency medical staff: An experimental study in Iran. *International Emergency Nursing*. 2024;74:101426.

- <https://doi.org/10.1016/j.ienj.2024.101426>
PMid:38484686
31. Abed MM, Azadi M, Dehghan M. Efficiency of Group Mindfulness-based Stress Reduction Program on the Quality of Life and Job Stress Among Emergency Medical Technicians. 2021.
 32. Najafi F, Kermansaravi F, Gangoozchi E. The relationship between general health and quality of work life of nurses working in Zahedan teaching hospitals. *Iranian Journal of Rehabilitation Research in Nursing*. 2018 Feb 10;4(2):53-9.
 33. Jafari H, Rahimi M K, Loeloe M S, Jalaei Z. Investigating the Relationship between Organizational Happiness and Quality of Work Life in Teaching Hospitals of Yazd in 2023. *Manage Strat Health Syst* 2024; 8 (4):388-396
<https://doi.org/10.18502/mshsj.v8i4.15167>
 34. T Walker C, Papadopoulos L. *Psychodermatology: The Psychological Impact of Skin Disorders*. New York: Cambridge University Press; 2005.
<https://doi.org/10.1017/CBO9780511544170>
 35. Thielmann B, Schwarze R, Böckelmann I. A systematic review of associations and predictors for job satisfaction and work engagement in pre-hospital emergency medical services-challenges for the future. *International Journal of Environmental Research and Public Health*. 2023;20(5):4578.
<https://doi.org/10.3390/ijerph20054578>
PMid:36901586 PMCID:PMC10002026
 36. De Moura AA, Bernardes A, Dessotte CAM, Balsanelli AP, Zanetti ACB. Job satisfaction of nursing technicians in pre-hospital care: an analytical observational study/Satisfacao no trabalho de tecnicos de enfermagem do atendimento pre-hospitalar: um estudo observacional analitico/Satisfaccion laboral de los tecnicos de enfermeria en la atencion prehospitalaria: un estudio analitico observacional. *Enfermagem Uerj*. 2021;29:NA-NA.
<https://doi.org/10.12957/reuerj.2021.59322>
 37. Farahani M, Zare SE. Effectiveness of cognitive-behavioral anger management training on aggression and job satisfaction on nurses working in psychiatric hospital. *Zahedan Journal of Research in Medical Sciences*. 2018;20(2).
<https://doi.org/10.5812/zjrms.55348>
 38. Rabiei M, Shirani S, Sharifi T. Study the effectiveness of cognitive-behavioral intervention on the quality of life, job satisfaction, and nurses' organizational performance. 2018; 7(1):42-54.
 39. Mohammadi AA, Farahani MN, Hasani J, Mirdarikvand F. Relationship between job stress and work locus of control with job satisfaction. *Journal of Sabzevar University of Medical Sciences*. 2017;24(4):249-55.
 40. Basabr M, Khankeh H, Dalvandi A, Ghaedamini Harouni G. Comparing job satisfaction of pre-hospital and hospital emergency nurses in Mashhad, Iran. *Health in emergencies and disasters quarterly*. 2018;4(1):15-22.
<https://doi.org/10.32598/hdq.4.1.15>
 41. Huberty JL, Espel-Huynh HM, Neher TL, Puzia ME. Testing the pragmatic effectiveness of a consumer-based mindfulness mobile app in the workplace: randomized controlled trial. *JMIR mHealth and uHealth*. 2022;10(9):e38903.
<https://doi.org/10.2196/38903> PMid:36169991 PMCID:PMC9557765
 42. Melnyk BM, Hsieh AP, Tan A, Gawlik KS, Hacker ED, Ferrell D, Simpson V, Burda C, Hagerty B, Scott LD, Holt JM. The state of mental health and healthy lifestyle behaviors in nursing, medicine and health sciences faculty and students at Big 10 Universities with implications for action. *Journal of Professional Nursing*. 2021;37(6):1167-74.
<https://doi.org/10.1016/j.profnurs.2021.10.007>
PMid:34887036
 43. Martin SD, Urban RW, Johnson AH, Magner D, Wilson JE, Zhang Y. Health-related behaviors, self-rated health, and predictors of stress and well-being in nursing students. *Journal of Professional Nursing*. 2022;38:45-53.
<https://doi.org/10.1016/j.profnurs.2021.11.008>
PMid:3504258