

***Evaluation of Factors Affecting Job Satisfaction in Emergency  
Medical Services Staff of Zanjan Province, Iran***

Rashtchi V<sup>1</sup>, Ahmadi S<sup>2\*</sup>, Hanifi N<sup>3</sup>, Fallah R<sup>4</sup>

<sup>1</sup>Anesthesiologist, Assistant professor, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran

<sup>2</sup>Master's Student, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran

<sup>3</sup>Ph.D Associate Professor, Zanjan Social Departeman of Health Research Center, Zanjan University of Medical Sciences, Zanjan, Iran

<sup>4</sup> Ph.D Assistant Professor, Departeman of Biostatistics, School of Medicine, Zanjan University of Medical Sciences, Zanjan, Iran

**\*Corresponding Author:** Master's Student, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran

**Tell:** 0098- 9120304205

**Email:** saeedahmadi115@gmail.com

**Received:** 30 Sep 2020

**Accepted:** 10 Nov 2020

### Abstract

**Background:** The challenges of health systems emphasize the need for more motivated employees to perform better and more effectively. Therefore, pervasive attention to job satisfaction of these employees is a matter of course.

**Objectives:** The present study aimed at investigating factors affecting job satisfaction in emergency medical services (EMS) staff of Zanjan Province, Iran, in 2019.

**Methods:** The present descriptive-correlational study was performed on 170 EMS personnel working in the Disaster and Emergency Medical Management Center (DEMMC) of Zanjan Province. The stratified random sampling method was utilized to select the subjects. Job description index and GHQ-12 were administered as data collection instruments. Data were analyzed by SPSS version 16 using descriptive statistics, ANOVA, and Pearson correlation coefficient.

**Results:** In the present study, the work experience of 46.5% and 26% of the subjects was less than five and more than 10 years, respectively. The highest and lowest scores of job satisfaction belonged to coworkers and pay subscales, respectively (24.4±17 vs. 11.5±18.4). The overall job satisfaction score of the subjects was 19.7±18.2 out of 100. Also, a significant relationship was found between the level of education and overall satisfaction.

**Conclusion:** Considering the low level of job satisfaction in EMS staff, it seems that modifying the reward mechanisms in the prehospital emergency department and using performance improvement levers can enhance the motivation and improve the performance of staff. Besides, strive to promote social relations among coworkers as an effective element may help to enhance job satisfaction and the overall satisfaction of personnel.

**Keywords:** *job satisfaction, medical emergencies, prehospital*

### Introduction

Emergency medical services (EMS) are a notable setting of the health system playing a pivotal role in providing prehospital emergency services and transferring patients to medical centers. The EMS activities include responding to requests for medical assistance, dispatching EMS technicians to the scene, providing treatment by trained personnel on the scene, delivering paramedic

services in ambulance or helicopter, and transporting the patient to the centers determined by the Emergency Operations Center [1,2]. Considering rapid changes in health and treatment needs, investigation of the responsiveness of the health system, including prehospital emergency services, as a key element is felt more than ever [3].

However, due to the relationship with human lives, healthcare professions are of great importance, and dissatisfaction of employees may lead to a disruption in care delivery, and qualitatively demoralize both the personnel and patients and, consequently, overshadow the quality of health care [4]. Evidently, paying attention to human resources is twice important in healthcare organizations, especially prehospital emergencies, and therefore, improving the human resources satisfaction leads to satisfaction in the whole organization, which ultimately facilitates achieving the main goals and, in turn, leads to the promotion of public health [5].

Lu KY believes that job satisfaction is an emotional pleasure, resulting from the assessment or experience of the employee in his job. Job satisfaction definitions indicate that this concept includes three separate but related structures of job assessment, job belief, and emotional experiences of the job [6]. A supportive environment that improves personnel capabilities is likely to promote job satisfaction. However, job satisfaction is not the only factor, but actually the product of factors, such as conditions and relationships governing the workplace, health system, and job, as well as personal, social, cultural, and economic factors [7]. Various theories are proposed for job satisfaction, but all of them rely on the three axes of expectations in real situations, the extent to which physical and mental needs are met, and the level of maintaining important values [8]. Smith et al., outlined five core job characteristics representing job satisfaction as work itself, supervision, coworkers, promotion opportunities, and pay [9].

Job satisfaction is a factor playing a pivotal role in the performance and quality of services provided by healthcare staff [10]. The results of research in the United States showed that job satisfaction in healthcare staff is associated with improving the quality of care and increasing productivity [11].

Yoon, in a long seven-year study, also showed that job satisfaction motivates employees up to 15 times for effective activity and is associated with organizational success [12]. The importance of job satisfaction is due to the role that this structure plays in the development of the organization, as well as the health of the workforce. However, in addition to numerous and sometimes complex definitions and conceptualizations, it is a

crossroad of participation and structure of many scientific arenas, such as psychology, sociology, management, and even economics [13].

Nevertheless, identifying the job satisfaction of EMS staff plays a pivotal role in the quality of prehospital care services. The cultural, economic, and social conditions of the country, as well as encountered clinical conditions, can affect the job satisfaction of employees. Therefore, the present study aimed at determining the level of job satisfaction and its relationship with demographic characteristics in prehospital EMS staff.

### Methods

The present descriptive-correlation study was conducted in 2019 on prehospital EMS staff working as operational technicians and executive experts in the Disaster and Emergency Medical Management Center (DEMMC) as the statistical population. The stratified random sampling was utilized in the present study, and each city was considered as a stratum. The participants included the executive and operational staff of DEMMC in Abhar, Tarom, Khodabandeh, Khorramdareh, Ijroud, and Mahnesan cities. To the best of authors' knowledge, since no similar study was conducted in Iran, the sample size was calculated, considering the confidence interval of 95 and the test power of 80, following a pilot study on 30 EMS personnel, using the below-mentioned formula:

$$n = \left( \frac{z_{\alpha/2} \cdot \delta}{d} \right)^2$$

$$n = \frac{(1.96)^2 \times s^2}{(0.15)^2 s^2} \cong 170$$

The inclusion criteria were: being an EMS staff in one of the paramedic, junior, middle, and senior technician levels in the operational departments or communication center, having a personal experience in prehospital emergency operations, willingness to participate in the study, and having at least one year of work experience.

The questionnaire administered in the research consists of two parts, demographic characteristics (12 items) and job description index (JDI) (70 items).

Demographic questionnaire included age, marital status, number of children, total income, employment status, work experience, number of working hours per week, position, work

environment, level of education, the field of study, number of missions during a 24-hour shift. JDI has 72 items in six subscales of the work itself (items 1-22), supervision (23-36), coworkers (37-47), promotional opportunities (48-54), pay (55-64), and working environment (65-72).

Items in JDI are scored from 1 to 5, with 1 as the minimum and 5 the maximum. The minimum overall score of the instrument is 72 and the maximum 350. According to the cutoff score, the median average of the JDI score was considered. Studies by Smith et al., reported the reliability coefficient of JDI as 0.62-0.89 [14]. The overall reliability and validity coefficients were respectively reported as 0.85 and 0.46 in a study by Ghani on teachers and 0.75 in a study by Attar on the employees of an industrial complex[14, 15].

The study protocol was approved by the Ethics Committee of Zanjan University of Medical Sciences (code No. IR.ZUMS.REC.1398.324). After obtaining the necessary permissions, the researcher referred to DEMMC in order to select eligible subjects. The study objectives were explained to the participants, and written informed consent was obtained from them.

Data were analyzed using SPSS version 16 software. To assess the normality of the data, the Kolmogorov-Smirnov test and drawing of the plot

were used, and according to the results, the normality of the data was confirmed. The Pearson correlation coefficient was used to evaluate the relationship between job satisfaction and demographic variables. P<0.05 was considered as the level of significance.

**Results**

A total of 170 complete questionnaires were collected in the present study. Evaluation of the results obtained from the demographic questionnaire and JDI showed that the highest frequency percentage of participants' age was 36.12%, 62% were married, and 44.1% received a total salary of 120-\$160. Totally, 28.2% had the contract and 23.5% the agency employment status. In addition, 46.5% of the respondents had less than five years and 26% over 10 years of work experience. Most of the subjects worked 72 hours per week in the prehospital emergency department, and the majority had the position of a technician. Also, 43% of the participants worked in urban stations; half of the respondents had a bachelor's degree or higher and 47.2% a postgraduate degree. About 56.5% of the subjects were emergency medicine graduates, and the number of missions during a 24-hour shift was less than three in 43% of the participants (Table 1).

*Table 1: The Frequency distribution of demographic characteristics in the study subjects*

Variable	Category	Number	Percentage
Age, yr	<30	78	46
	30-35	39	23
	>35	53	31.2
Marital status	Single	65	38.2
	Married	105	62
Total income, Tomans	<3,000,000	73	43
	3,000,000-4,000,000	75	44.1
	4,000,000-5,000,000	22	13
Employment status	Fixed-term	37	22
	Contractor	48	28.2
	contract employment	24	14.1
	apprentices or trainees	21	12.4
	Agency	40	23.5
Work experience, yr	<5	79	46.5
	5-10	47	27.6
	>10	44	26
Working hours per week	48	40	23.5
	72	107	63
	96	14	8.2
	Other	9	5.3

<b>Work environment</b>	City	29	17.1
	Out of city	73	43
	City and out of the city	53	31.2
	Station	15	9
<b>Level of education</b>	High school diploma	4	2.4
	Associate degree	81	48
	Bachelor's degree and higher	85	50
<b>Field of study</b>	Emergency medicine	96	56.5
	Anesthesiology	15	9
	Operating room	5	3
	Nursing	42	24.7
	Other	12	7.1
<b>Number of missions during a 24-hour shift</b>	<3	73	43
	3-5	48	28.2
	>5	49	28.8

According to the obtained results, the job satisfaction score of the respondents was 19.7±18.2. Among the six subscales of job

satisfaction, the highest and lowest scores belonged to coworkers and pay, respectively (24.4±17 vs. 11.5±18.4) (Table 2).

*Table 2: Mean and standard deviation of job satisfaction and its subscales*

The subscale of job satisfaction	Mean	SD	Min	Max
Work itself	23	12.4	0	100
Supervisor	24	19.1	0	100
Coworker	24.4	17	0	100
Promotional opportunities	13	23.5	0	103
Pay	11.5	18.4	0	100
Work environment	22.6	19	0	100
Total score	19.7	18.2	0	100

According to the study findings, the highest and lowest job satisfaction scores belonged to anesthesiology and operating room graduates, respectively (69.62±10.50 vs. 52.04±7.24). There

was a significant relationship between the level of education and overall satisfaction (P-value=0.005) (Table 3).

*Table 3: Mean score and standard deviation of the study subjects in job satisfaction, based on the field of study*

Factor	EMS		Anesthesiology		Operating room		Nursing		Other		ANOVA P value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Job satisfaction	65.68	11.00	69.62	10.50	52.04	7.24	59.95	15.28	65.53	10.40	0.005
Number	96		15		5		42		12		
Total score	56.61	11.83	65.56	7.35	64.2	12.44	53.96	15.77	63.64	12.36	0.51

Based on multivariate regression analysis, the field of study was a predictor of job satisfaction. In other words, job satisfaction was 1 unit lower

in technicians with a higher level of education than their counterparts with a lower level of education ( $\beta = -0.066$ ) (P-value= 0.001) (Table 4).

*Table 4: Simple linear regression for the prediction of job satisfaction*

Predictor variable	$\beta$ coefficient	SE	$\beta$	t	Type of the test	
					Linear regression	P value
Constant value	67	4		15		0.001
Field of study	-1	1	-0.066	0.001		0.001

### Discussion

The results of the study showed that satisfaction with coworkers was the main factor affecting job satisfaction; however, it was social factors and relationships with coworkers in prehospital settings. According to the obtained results, the mean score of job satisfaction of EMS staff was 19.7%, so the study site should strive to improve the job satisfaction of its personnel and benefit from its positive consequences.

In the study by Chen, H.C [16], a significant relationship was found between age and monthly salary, and job satisfaction ( $P < 0.01$ ), while no significant relationship was observed with the demographic variables of marital status and level of education; differences can be attributed to the environment of the study site, as well as cultural differences, etc.

In the study by Mogharrab et al., [17] among nurses of educational and medical centers of Birjand City, Iran, younger subjects reported a higher level of job satisfaction, which was in line with the present study results. Findings of the present study indicated that the highest and lowest scores of job satisfaction belonged to the subscales of coworkers and pay, respectively (24/4%). It seems that making proper decisions in the distribution of financial resources and rewards among prehospital emergency personnel can play a pivotal role in promoting their job satisfaction and motivation, and thus enhancing their performance.

Jahani et al. [18], in a study on the staff of Arak hospitals, showed that the highest level of job satisfaction was with coworkers and the lowest with bonuses for hard work, justice, and welfare facilities. However, the results of the study by Wang [19] indicated that payments and salary raise are among the most important factors affecting job satisfaction, which is itself part of extrinsic rewards to motivate employees. Likewise, the study by Shafiabadi and Khalaj-Asadi [20] on Islamic Azad University staff showed a significant relationship between job

satisfaction and age; however, they found no relationship between job satisfaction and gender, marital status, and level of education.

Long, in a study in the Research Development Department of the University of Mississippi Medical Center, concluded that the employee age is the best predictor of job satisfaction, and regardless of gender, position, race, and geographical region of the workplace, job satisfaction can only be predicted by age [21]. The reason for this may be that with age increase, work interest and motivation decreases, which itself as a defective cycle of motivation reduce job satisfaction.

All in all, it seems that extrinsic motivation factors, such as salary and welfare facilities, in the current system for prehospital emergency personnel are considered as the most important factors in improving job satisfaction. Improvement of reward mechanisms and the use of performance improvement levers can enhance personnel motivation and performance. In addition, changes in personnel selection and assignment and recruitment of forces with higher levels of education, while respecting senior and qualified ones, can influence maintaining and even promoting their satisfaction; the points suggested to be considered in the organizational assignment. Evaluating the study limitations, the impact of the work environment on the mental and emotional states of the participants is noteworthy. Nevertheless, to reduce the limitation, the participants were given enough time to complete the questionnaire.

### Conclusion

Considering the situation of job satisfaction in prehospital EMS staff of Zanzan Province, more supports based on JDI subscales should be provided for them to prevent job dissatisfaction consequences, which may affect the appropriate care delivery, and give them the chance to experience a higher quality work-life, because job satisfaction can enhance the employees'

capabilities and improve the quality of their care delivery. Managers should also be assured that the consideration of these items can bring desired outcomes, while the consequences of job dissatisfaction in a medical team are sometimes irreparable.

### Acknowledgements

The article was the result of a research project confirmed by the Zanzan University of Medical Sciences (Ethical code: IR.ZUMS.REC.1398.324). The authors wish to thank the Vice-Chancellor for Research of Zanzan University of Medical Sciences for supporting the project, as well as the staff of EMS 115 for their cooperation with the study.

### Conflict of interest

The author declared no conflict of interest.

### References

- Zeraatchi A, Rostami B, Rostami A. Time Indices of Emergency Medical Services; a Cross-Sectional Study. *Iran J Emergency Med.* 2018; 5(1): 1- 8. [In Persian]
- Aghababaeian HR, Moosavi SA, Dastorpoor M, et al. Occupational Exposure to Sharp Tools in Emergency Medical Service Staff; an Epidemiologic Study. *Iran J Emergency Med.* 2017; 4(4): 146- 52. [In Persian]
- Hashemi B, Baratloo AR, Forouzafar MM, Motamed M, Tarkhorani MR. Patient satisfaction before and after executing health sector evolution plan. *Iran J Emergency Med.* 2015; 2(3): 127- 33. [In Persian]
- Bakhsipour B, Dousti Y, Mohammadirad A, Khosravi A. The relationship between personality characteristics and mental health with job satisfaction. *J Knowledge & Health.* 2014; 9(2): 27- 32. [In Persian]
- Purgaz A, Nastiezaie N, Hezare Mogadam M. Job satisfaction of nurses working in hospitals in Zahedan. *Nurs Midwifery J.* 2010; 8(3): 138- 43. [In Persian]
- Weiss HM. Deconstructing job satisfaction separating evaluations, beliefs and affective experiences. *Hum Resource Manag Rev.* 2002; 12(2): 173- 94.
- Nehrir B, Ebadi A, Tofighi Sh, Karimi Zarchi A, Honarvar H. Relationship of job satisfaction and organizational commitment in hospital nurses. *Iran J Mil Med.* 2010; 12(1): 23- 26.
- Newton T, Keenan T. Further analyses of the dispositional argument in organizational behavior. *J applied psychol.* 1991; 76(6): 781- 87.
- Sotodeh Asl N, Ghorbani R, Aghajani SH, Rashidy ppour A. Job satisfaction and its contributing factors among faculty members of Semnan University of Medical Sciences. *Koomesh.* 2013; 14(2): 232- 39. [In Persian]
- Ma CC, Samuels ME, Alexander JW. Factors that influence nurses' job satisfaction. *J Nurs Adm.* 2003; 33(5):293- 99.
- Laschinger HK, Almost J, Tuer-Hodes D. Workplace empowerment and magnet hospital characteristics: making the link. *J Nurs Adm.* 2003; 33(7-8): 410- 22.
- Yoon MH, Seo JH, Yoon TS. Effects of contact employee supports on critical employee responses and customer service evaluation. *J Serv Mark.* 2004; 18(5): 395- 412.
- Lawson R, Shen Z. *Organizational Psychology: Foundations and Application.* 1<sup>st</sup> ed. oxford univ press. 1997.
- Smith PC, Kendall LM, Hulin CL. *The measurement of satisfaction in work and retirement; a strategy for the study of attitudes.* Chicago: Rand McNally, 1969.
- Maraee M. *A Survey of job satisfaction of cultural sector employees in Isfahan.* 2000.
- Chen HC, Beck SL, Amos LK. Leadership styles and nursing faculty job satisfaction in Taiwan. *J Nurs Scholarsh.* 2005; 37(4): 374- 80.
- Mogharab M, Madarshahian F, Ali Abadi N, Rezaei N, Mohammadi AR. Investigating job satisfaction among nurses in teaching hospitals of Birjand in 2004. *J Birjand Univ Med Sci.* 2006; 12(3-4): 92- 99. [In Persian]
- Jahani F, Farazi A, Rafeei M, Jadidi R, Anbari Z. Job satisfaction and its related factors among hospital staff in Arak in 2009. *Arak Med Univ J.* 2010; 13(1): 32- 39. [In Persian]
- Wang Y. Job satisfaction of nurses in hospital. *Chinese Journal of Nursing,* 2002. 37(8): p. 4- 593.
- Shafi Abadi A, Khlaj Asadi Sh. Examined the relationship between job satisfaction and mental health Garmsar Azad University staff. *Quarterly News Industrial Psychology Organizational.* 2010. 1(2): 27-33. [In Persian]
- Lyndon JL. Relationships between personality type, Job satisfaction, and Job performance in the Mississippi State University Extension Service.

Relationships between personality type, Job satisfaction, and Job performance in the

Mississippi State University Extension Service. 2006: 3211242.