

Research Paper

Relationship Between Psychological Well-being and Resilience of Emergency Medical Technicians in Yazd, Iran



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ABSTRACT

Background: Paying attention to the psychological well-being of emergency medical technicians (EMTs) is necessary, since they are prone to physical and mental problems caused by emergency work. Resilience plays an important role in reducing stress. The present study aimed to find the relationship between psychological well-being and resilience of EMTs in Yazd, Iran.

Materials and Methods: This descriptive-correlational study was conducted in 2023 on 137 EMTs working in the emergency departments and accident management centers in Yazd province, who were selected by a simple random sampling method. Ryff's psychological well-being scale (PWBS) and the Connor-Davidson resilience scale (CD-RISC) were used to measure psychological well-being and resilience. Data were analyzed in SPSS software, version 16 using descriptive statistics, the Wilcoxon test, and the Pearson correlation test.

Results: A positive and significant correlation was found between the variable of resilience and psychological well-being. A significant difference was found in the mean score of PWBS based on gender ($P < 0.05$). The mean total scores of CD-RISC and PWBS were 94.43 ± 13.9 and 74 ± 9.77 , respectively. Among the domains of CD-RISC, the highest score was related to personal competence (30.71 ± 5.29). Among the domains of PWBS, the highest score was related to positive relationships with others (13.62 ± 2.71).

Conclusion: There is a positive relationship between the psychological well-being and resilience of EMTs in Iran. It is necessary for planners and policymakers in Iran to develop stress reduction programs to promote the psychological well-being and resilience of EMTs by considering the importance of communication with others, personal competence, and spirituality.

Keywords:

Resilience, Psychological well-being, Emergency medical service, Emergency medical technicians (EMTs)

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Introduction

The nature and conditions of different jobs have caused stress in employees. Those working in emergency departments face more workplace stressors, including unsafe environments and dealing with critically injured people who need immediate care [1]. These stressors can cause physical and mental problems in these health workers and subsequently cause a decrease in the quality of work and the desire to continue the service provision, leading to changing the job [2]. It is necessary to improve their psychological well-being [3]. Psychological well-being refers to optimal psychological functioning that includes self-acceptance, autonomy, environmental mastery, purpose in life, personal growth, and positive relationships with others [3, 4]. Lack of a disease is not enough to feel healthy; there is also a need for life satisfaction, efficient interaction with others, and positive progress in life. Psychological well-being refers to how people evaluate their lives [5, 6]. People with higher psychological well-being often have positive feelings and a pleasant outlook on dealing with problems and adverse events, while people with low psychological well-being often express negative emotions such as depression and anxiety [7]. Resilience is among the protective factors that can play an important role in reducing stress and increasing psychological well-being [8, 9]. Resilience is related to personality traits and external factors [10, 11]. People with low resilience are more anxious when facing adverse events [12]. The work-related anxiety and stress in emergency medical technicians (EMTs) can disturb their emotional, cognitive, and physical balance, which can lead to job burnout, cognitive, emotional, and physical exhaustion, emotional discharge, listlessness, lack of motivation, and helplessness. As a result, the person does not have the opportunity to experience positive emotions and have satisfaction with life and health, which reduce psychological well-being. Considering the importance of the protective role of resilience and psychological well-being in reducing stress, the present study aims to investigate the resilience and psychological well-being of EMTs in Yazd province, Iran.

Materials and Methods

This descriptive-correlational study was conducted in 2023. The study population included all EMTs working in the emergency medical services and accident management center in Yazd province. Inclusion criteria were at least one year of work experience in providing emergency medical services and working as an EMT. The unwillingness to participate in the study was the exit criterion.

The Equation 1 was used to determine the sample size:

$$1. n = 4 + [(Z_{\alpha/2} + Z_{\beta}) / 0.05 - \ln(1 + r/1 - r)]^2$$

Based on the study by Sadeghifar et al. [13], who showed a correlation value of 0.25 between psychological well-being and resilience, and considering the significance level of 0.05 and a test power of 80%, the initial sample size was determined to be 123. By considering a sample dropout rate of 10%, the final sample size increased to 137. The samples were selected using a simple random sampling method using the table of random numbers.

Ryff's psychological well-being scale (PWBS) was used to measure psychological well-being. This questionnaire has 18 items and six subscales of self-acceptance, environmental mastery, positive relationship with others, purpose in life, personal growth, and autonomy. The items are rated on a 6-point Likert scale from 1 (completely disagree) to 6 (completely agree). The scoring for items 1, 3, 4, 5, 9, 10, 13, and 17 is reversed. Based on the total score, higher scores indicated higher psychological well-being. Kalantarkousheh and Navarbafi measured the validity, reliability, and factor structure of the Persian PWBS and reported a Cronbach's α value of 0.60 [14].

The Connor-Davidson resilience scale (CD-RISC) was used to measure resilience. This questionnaire has 25 items rated on a Likert scale from 0 (never) to 4 (almost always). The total score ranges from 0 to 100. The cutoff point for this questionnaire is 50. The validity and reliability of the Persian version of this questionnaire have been confirmed. Cronbach's α for the reliability of the Persian CD-RISC is 0.89 [15].

Data were analyzed in SPSS software, version 16 using descriptive statistics and analytical tests, including the Pearson correlation test, independent t-test, the Wilcoxon test and one-way ANOVA.

Results

In this study, 125 EMTs participated. The majority of them were in the age group of 30-40 years (39.2%), male (87.2%), and married (67.2%) with a work experience of <5 years (33.6%) and a bachelor's degree (52.8%) (Table 1).

According to the results in Table 2, the mean total scores of resilience and PWBS were 94.43 ± 13.9 and 74 ± 9.77 , respectively. Among the domains of resilience,

Table 1. Demographic characteristics of participants

Variables		No. (%)
Sex	Male	109(87.2)
	Female	16(12.8)
Age (y)	<30	42(33.6)
	30-40	49(39.2)
	>40	34(27.2)
Work experience (y)	<5	42(33.6)
	6-10	22(17.6)
	11-15	26(20.8)
	16-20	13(10.4)
	>20	22(17.6)
Educational level	High school diploma	5(4)
	Associate degree	44(35.2)
	Bachelor's degree	66(52.8)
	Master's degree	10(8)
Marital status	Single	38(30.4)
	Married	84(67.2)
	Divorced	3(2.4)

the highest mean score was related to personal competence (30.71 ± 5.29), and the lowest score was related to trust in one's instincts and tolerance of negative affect (8.01 ± 1.67). Among the domains of PWBS, the highest score was related to the dimension of positive relations with others (13.62 ± 2.71), and the lowest score was related to environmental mastery (10.34 ± 2.08).

Based on the results in Table 3, a significant difference was found in the PWBS mean score based on sex ($P=0.015$); the mean score was higher in female technicians (83.63 ± 17.71) than in males (59.97 ± 13.9). No significant difference was observed based on other demographic variables such as age, educational level, work experience, and marital status ($P>0.05$). No significant difference was observed in the resilience score based on demographic variables ($P>0.05$).

Based on the results in Table 4, there was A positive and significant correlation was found between the variable of resilience and psychological well-being. The total score

of PWBS had a significant correlation with all domains of resilience ($P<0.05$) except for "trust in one's instincts and tolerance of negative affect". The total score of resilience had a significant and direct relationship with the psychological well-being domains of personal growth, purpose in life, and self-acceptance ($P<0.05$).

Discussion

The purpose of the present study was to investigate the resilience and psychological well-being of EMTs in Yazd city. There was a positive and significant correlation was found between the variable of resilience and psychological well-being. By increasing resilience, psychological well-being can increase in EMTs. Smith and Young, in 2017, also showed that developing resilience through a positive learning experience reduces stress and increases psychological well-being. Based on their findings, adopting coping strategies instead of focusing on eliminating stressors can increase resilience and psychological well-being [16]. De Caroli and Sagone also suggested that,

Table 2. Mean scores of psychological well-being, resilience, and their domains

Variables	Dimensions	Mean±SD
Psychological well-being	Autonomy	11.85±2.34
	Environmental mastery	10.34±2.08
	Personal growth	12.7±2.41
	Positive relations with others	13.62±2.71
	Purpose in life	12.24±2.87
	Self-acceptance	13.24±2.82
	Total	74±9.77
Resilience	Personal competence	30.71±5.29
	Spiritual influences	28±4.27
	Positive acceptance of change and secure relationships	19.18±3.34
	Self-control	11.32±2.21
	Trust in one's instincts and tolerance of negative affect	8.01±1.67
	Total	94.43±13.9

SD: Standard deviation.

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with more resilience against stressful situations, more psychological well-being can be obtained. People who are resilient have more progress, personal growth, and self-acceptance. Highly resilient people are generally better at maintaining their physical and mental health and can recover from stressful events more quickly than people with low resilience [17]. In other words, with more ability to cope with life problems and stressful situations, the person is less exposed to mental and emotional disturbances and has higher mental health and quality of life [18, 19]. This can also be applied to EMTs. According to Wut et al. [20], people with high resilience maintain their psychological health and have psychological adaptability during stressful conditions and adverse events.

Hasanvand et al., in a study on nurses from public hospitals in Khorramabad, Iran, stated that the environmental mastery domain of psychological well-being was higher in nurses, which is not consistent with our results. Environmental mastery refers to a person's capacity to manage daily affairs in life efficiently. The EMTs should learn how to manage their lives and surrounding world by considering time management and proper planning [21]. In our study, positive relations with others as a domain of psychological well-being had the highest score. In a study in Egypt, Ahmad and Ibrahim found that more than two-thirds of ambulance personnel had psycholog-

ical well-being. Positive family relationships had a significant relationship with psychological well-being. More than half of ambulance personnel could cope with stress by talking to their colleagues, spending the weekend with their families, and meeting their friends [22]. In other studies, communication with others also was reported to have an important role in health care workers and therapists and led to physical, mental and behavioral outcomes [23, 24]. In our study, relationship with friends and family and having a purpose in life were also the mechanisms of coping with the negative impact of stress in EMTs. This finding also agrees with the findings of Lawn et al. [25].

In our study, among the resilience components, personal competence had the highest score. It refers to high standards, potential, and competency to achieve the goal despite the obstacles in life. Fallon Goodman et al. also showed that personal competence can increase resilience more than compared to other components [26]. In Parizad et al.'s study on the resilience of nurses working in COVID-19 wards, the dimension of spiritual influences had the highest score [27]. In our study, the dimension of spiritual influences had the highest score after the dimension of personal competence. Kim et al. and Zhang et al., in their studies on nurses during the COVID-19 pandemic, stated that resilience and spirituality are important for the mental health of nurses [28, 29].

Table 3. Mean scores of psychological well-being and resilience based on demographic variables

Variables		Mean±SD	P	Mean±SD	P
		PWBS		CD-RISC	
Sex	Male	59.97±13.9	0.015*	62.91±12.03	0.944
	Female	83.63±17.71		63.59±14.06	
Age	<30	63.75±12.25	0.877	60.06±13.92	0.488
	30-40	64.22±15.08		67.83±13.09	
	>40	60.31±13.03		59.68±12.08	
Work experience	<5	66.7±16.04	0.279	62.23±14.08	0.749
	6-10	49.36±12.09		59.05±13.74	
	11-15	64.44±15.07		59.46±12.05	
	16-20	57.23±11.56		74.23±14.21	
	>20	71.27±14.95		65.98±13.78	
Marital status	Single	73.44±14.68	0.897	94.57±14	0.906
	Married	74.23±13.06		94.4±14.03	
	Divorced	74.66±13		93.33±13.09	
Educational level	High school diploma	65.6±12.07	0.068	86.8±12.08	0.491
	Associate degree	72.79±12.96		96.09±13.54	
	Bachelor's degree	75.18±13.78		94.43±12.04	
	Master's degree	75.8±12.74		90.9±13.58	

SD: Standard deviation.

*Independent sample t-test and one-way ANOVA.

In our study, the resilience dimension of trust in one's instincts and tolerance of negative affect had the lowest score, which is consistent with the results of Sadeghi et al. in Hamedan, Iran [30].

Froutan et al. reported the effect of various factors on the increase of resilience in emergency medical staff in burn missions, which can affect the quality of prehospital burn care [31]. In our study, a significant difference was found in the psychological well-being of EMTs based on gender; female technicians had higher psychological well-being than male technicians. Gómez-Baya et al., in their study, stated that female health professionals had lower psychological well-being than males [32]. Madhuchandra and Srimathi showed that gender difference in psychological well-being of nurses and doctors was not significant [33].

One of the limitations of this study was the lack of cooperation of some technicians in completing the questionnaire. Moreover, this research was done cross-sectionally. For this reason, it makes it difficult to draw conclusions about the cause.

Conclusion

There is a positive correlation between the psychological well-being and resilience of EMTs in Iran. Officials and policymakers should develop educational programs to strengthen EMTs' ability to communicate with others, personal competence, and spirituality. Also, organizational planning is needed to improve welfare facilities for EMTs. Also, measures such as reducing work shifts can help reduce stress and increase the well-being of EMTs.

Table 4. Pearson correlation test results for the study variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Autonomy	R Sig.	1											
2. Environmental mastery	R Sig.	0.045 0.62	1										
3. Personal growth	R Sig.	0.183 0.041	0.258 0.004	1									
4. Positive relations with others	R Sig.	0.228 0.011	0.225 0.012	0.283 0.001	1								
5. Purpose in life	R Sig.	0.386 0	0.341 0	0.379 0	0.266 0.003	1							
6. Self-acceptance	R Sig.	0.266 0.003	0.169 0.059	0.531 0	0.281 0.002	0.351 0	1						
7. PWBS (total)	R Sig.	0.547 0	0.501 0	0.711 0	0.587 0	0.732 0	0.708 0	1					
8. Personal competence	R Sig.	0.212 0.018	0.151 0.092	0.365 0	0.139 0.123	0.28 0.002	0.481 0	0.44 0	1				
9. Spiritual influences	R Sig.	0.096 0.289	-0.007 0.939	0.146 0.105	0.026 0.772	0.166 0.065	0.301 0.001	0.204 0.023	0.719 0	1			
10. Positive acceptance	R Sig.	0.136 0.131	0.069 0.442	0.253 0.004	0.138 0.126	0.1 0.267	0.423 0	0.303 0.001	0.647 0	0.301 0.001	1		
11. Self-control	R Sig.	0.06 0.504	0.137 0.129	0.284 0.001	0.136 0.131	0.269 0.002	0.339 0	0.333 0	0.716 0	0.603 0	0.559 0	1	
12. Trust in one's instincts	R Sig.	-0.053 0.559	0.033 0.715	0.060 0.508	0.037 0.681	0.056 0.534	0.160 0.075	0.083 0.359	0.083 0.359	0.368 0	0.397 0	0.397 0	1
13. Resilience (total)	R Sig.	0.146 0.104	0.098 0.277	0.297 0.001	0.120 0.183	0.231 0.009	0.45 0	0.366 0	0.366 0	0.864 0	0.805 0	0.799 0	0.535 0

Ethical Considerations

Compliance with ethical guidelines

This study has been approved by the Research Council of Meybod School of Nursing, [Shahid Sadoughi University of Medical Sciences](#), Yazd, Iran (Code: IR.SSU.REC.1401.107).

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Authors' contributions

Data collection: Mohammad Javad Mirjalili and Atena Dadgari; Study design and data analysis: Adel Eftekhari, Najmeh baghian and Farzan Madadzadeh; Conceptualization, supervision, review and editing: Adel Eftekhari and Najmeh Baghian; Writing the original draft: All authors.

Conflict of interest

The authors declared no conflict of interest.

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