International Journal of Scientific Research in Engineering & Technology
Volume6, Issue2 (March-April 2026), PP: 50-57.
https://www.doi.org/10.59256/ijsreat.20260602007
www.ijsreat.com
ISSN No: 2583-1240

Occupational Wellbeing among EMS Personnel

Şeyda Çakır[1], Yusuf Arif Kutlu[2]
[1] *Çanakkale Onsekiz Mart University, School of Graduate Studies, Risk Management of Natural Disasters, Turkey.*
[2] *Çanakkale Onsekiz Mart University, Faculty of Engineering, Department of Geophysical Engineering, Turkey.*

***To Cite this Article**: Şeyda Çakır[1], Yusuf Arif Kutlu[2], " Occupational Wellbeing among EMS Personnel", International Journal of Scientific Research in Engineering & Technology, Volume 06, Issue 02, March-April 2026, PP: 50-57.*

Abstract: *The present work provides an analysis of the adaptation process of Emergency Medical Services (EMS) personnel who engage in extended field duties following a disaster in their daily lives and/or working conditions. In this instance, Pro-QOL was utilized. It was developed in the form of a single questionnaire that would be given out one month before, one month after, and three months after the field study. The online survey was given to employees of Bursa Emergency Health Services who had been involved in destructive disasters in the past years. We were able to reach 404 volunteers. The SPSS program was used to look at this data. The psychometric integrity of the subdimensions, as reflected by Cronbach's Alpha scores varied from 0.68 to 0.92, whereas normality indices (Skewness and Kurtosis) were identified within the interval of -1.12 to +1.28. The analysis showed that Burnout (BU) was negatively correlated with Compassion Satisfaction (CS), while Compassion Fatigue (CF) exhibited a significant positive correlation with these dimensions. The results vary based on certain demographic indicators. After field work, female workers have more BU and CF than male workers. Single employees have higher CS levels than married employees. On the other hand, married people have higher levels of BU and CF than single people. Lastly, the levels of BU and CF go up as people get more education and work experience. After doing field work in all sub-dimensions, it is clear that participants get used to normal working conditions over time. In conclusion, it takes EMS workers at least three months to get used to their daily lives and jobs.*

Key Words: *Emergency Medical Services, Compassion Satisfaction, Burnout, Compassion Fatigue.*

I. INTRODUCTION

Stress, compassion fatigue, and burnout are prevalent among Emergency Medical Services (EMS) personnel. Some people might say that people who come to help others are taught not to react to the pain of the victims or disaster victims. But studies and experiences with emergency workers show that this is not the case. Along with these experiences, the very difficult working conditions in disaster zones, where there are complete chaos, security threats, poor organization, injuries, and losses, make it very hard for employees to get back to normal life after their duties.

In a real emergency or disaster, EMS workers are some of the first people to respond. Even though they are trained not to react to strange situations, they still have to deal with the same bad mental and physical effects as disaster victims[1]. Healthcare professionals frequently experience stress, job dissatisfaction, and burnout, which are often neglected[2]. The emotional bond between EMS personnel and disaster victims/survivors exacerbates symptoms of traumatic stress[3]. Ambulance service workers experience markedly elevated rates of occupational injuries and distinct injury patterns in their daily work compared to other healthcare professionals[4]. After a disaster, a lot of health problems can happen and last for years[5]. These problems can include musculoskeletal disorders, work accidents, and mental health issues. First response teams are very important in disasters because they help save lives and property. Consequently, it is imperative to optimize the capabilities of first responders by reducing the health and well-being expenditures[6]. Among the three occupational groups with a high level of potential exposure to traumatic experiences are paramedics, police, and emergency services personnel. The literature highlights that both chronic and acute stress experiences serve as major risk factors for PTSD among emergency medical service professionals[7]. Working in dangerous and unregulated environments, EMS professionals face heightened risks, as fatigue has been associated with injury reports[8]. There is a significant correlation between the pre-deployment stress levels of EMS personnel assigned to disasters like earthquakes and their subsequent levels of burnout[9]. Within EMS, the presence of burnout among doctors and nurses has profound implications for overall well-being, although it is commonly disregarded[10]. Employees who are socially isolated are highly susceptible to burnout. EMS are very likely to cause post-traumatic stress syndrome because they are very stressful[11]. Employees who are socially isolated are more likely to experience burnout[12]. Also, extraordinary events, such as disasters, exert considerable adverse effects on psychological well-being of healthcare professionals[13]. Cases analogous to PTSD, articulated through the notion of secondary traumatic stress, are also commonly observed[14]. Disaster workers are very likely to have mental health problems because of the traumatic events they see while working[15]. Employees in EMS have difficult working conditions that are often stressful and lead to mistakes. Work stress is apparent and is believed to frequently result in adverse safety outcomes or potential mistakes[16].

Evidence from systematic reviews demonstrates that emergency medical technicians and paramedics frequently experience occupational stress and burnout[17]. EMS workers work in dangerous places where they have to make quick decisions, be mentally strong, and be able to change. Long-term exposure to work-related stressors like heavy workloads, unpredictable shifts, and poor organizational support has been linked to heightened psychological morbidity, burnout, and employee turnover.

Burnout is regarded as a prevalent syndrome among individuals employed in highly stressful settings, particularly healthcare professionals. Maslach and Jackson created the Maslach Burnout Inventory in 1981 to measure burnout[18]. This made it possible for other studies to use it around the world. Many people talk about professional satisfaction in different ways, and they usually use words like job satisfaction, job fulfillment, or job contentment[19]. It usually means how happy and fulfilled a person feels with the work they do. The phrase "empathy fatigue" was first used to explain how nurses can become emotionally drained by their interactions with patients[20]. This idea can also be described as a state of mental and physical exhaustion that comes from constantly taking in and empathizing with other people's feelings and experiences.

Assessing EMS employees' prior work experience, physical and mental resilience, job satisfaction, burnout, and empathy fatigue will enhance their adaptation to daily life post-disaster, thereby elevating their quality of life.

This research is designed to explore the nuances of the adaptation process regarding EMS personnel in Bursa Province, Turkey, to daily life and standard working conditions following a disaster field mission, across the CS, BU, and CF sub-dimensions. This study made use of Pro-QOL, originally created by Stamm, which has been adapted into 28 languages internationally[21]. The scale was translated and validated for use in Turkish[22]. This is a widely used scale, but it is especially important in the healthcare field.

II.MATERIAL AND METHODS

Data Collection and Analysis: The survey method is also common in academic research on social issues[23]. Survey research is changing to keep up with the times and work with technology. Taking the survey online makes it easier for people to take part and gives them more freedom to use their time. Today, OST (Online Survey Technique) is a common way to collect data that makes the process easier[24]. Consequently, the OST method was selected as the data collection technique for this study. The survey was created using Google Forms, the results were gathered using Google Forms, organized using Microsoft Excel, and then moved to the SPSS program for analysis. The most recent version of the licensed SPSS program was used to look at the survey data.

Scale: This study utilized the Pro-QOL scale developed by Stamm[21] and adapted into Turkish by Yeşil[22]. The scale has 30 questions and three sub-dimensions: Compassion Satisfaction (CS), Burnout (BU), and Compassion Fatigue (CF).

Sampling: This research population comprises employees of EMS in Turkey. The sample comprises employees engaged in the Emergency Health Services of the Bursa Provincial Health Directorate.

Limitation: The findings of this study are confined to employees associated with the Emergency Health Services of the Bursa Provincial Health Directorate. As this is a cross-sectional study, causality cannot be inferred, thus limiting the generalizability of the findings.

Fieldwork: EMS workers who were deployed in the field during disasters in the past year evaluated the statements on the Pro-QOL scale based on their status one month before fieldwork (1MB), one month later (1ML), and three months after (3ML). The scale was created to show how the quality of life among EMS professionals applied throughout the fieldwork (for at least one week) changed during a major disaster and how well they were able to adjust to daily living and working conditions. Data was collected one month before, one month after, and three months after field study. The Ethics Committee of Çanakkale Onsekiz Mart University - Institute of Graduate Studies granted permission to conduct research on the pertinent sample. Later, COMU wrote a letter to the Bursa Provincial Health Directorate asking for permission. The survey study was done online because it got official permission after a review. We found 404 volunteers online through social media.

Scale Test: The scale was given to EMS workers who had done field work in the past year, with 1MB, 1ML, and 3ML coming from that work. First, we did separate validity and reliability tests for 1MB, 1ML, and 3ML. The values for validity and reliability for each time period were found to be very close to each other. Next, we did scale tests by averaging all the time periods because we had to use the same scale for each one. This study exclusively presents tests conducted on average across all time periods, namely the Reliability Analysis (RA), Exploratory Factor (EFA) and Confirmatory Factor (CFA) Analyses, and Pearson Correlation (Pearson's *r*).

RA: Prior findings showed that the scale demonstrated Cronbach's Alpha of 0.87 for CS, 0.72 for BU, and 0.80 for CF[21]. People usually think that scales are very reliable if the Cronbach's Alpha coefficient falls within the range of 0.80 to 1.00, somewhat reliable if it is between 0.60 and 0.80, not reliable if it is between 0.40 and 0.60, and not reliable at all if it is between 0 and 0.40[25]. The BU subdimension seems to have lower internal reliability than the other sub dimensions, but it is still within acceptable limits. We looked at whether the factor loading distributions of the statements grouped under three variables in exploratory and confirmatory factor analyzes. We got rid of any expressions that broke the harmony and did the analysis again. Following the removal of non-conforming items, the refined scale yielded Cronbach's Alpha values between 0.68 and 0.92 (Table no 1).

No	Subscale	Cronbach's Alpha	
		Original Scale (30 items)	Post-Elimination Scale (20 items)
1	JS	0.919	0.904
2	BU	0.678	0.796
3	CF	0.863	0.877

Table no1: *Cronbach's Alpha for original and post-elimination scales*

No	Factor Loadings of the Original Scale		
	1	2	3
A 3		0.802	
A 6		0.758	
A 12		0.701	
A 16		0.789	
A 18	-0.399	0.606	0.328
A 20		0.821	
A 22		0.630	
A 24		0.851	
A 27		0.784	
A 30	-0.323	0.665	
B 1	0.383	-0.484	
B 4		-0.645	
B 8	0.512		0.515
B 10	0.602		0.418
B 15		-0.661	
B 17		-0.604	
B 19	0.813		
B 21	0.844		
B 26	0.763		
B 29	-0.501		
C 2	0.409		0.401
C 5	0.589		
C 7	0.430		0.397
C 9	0.559		0.479
C 11	0.602		
C 13	0.672		
C 14	0.472		0.413
C 23	0.562		
C 25	0.608		0.301
C 28			
Kaiser-Meyer-Olkin (KMO)			0.933
Approx. Chi-Square			6641.42
df			435
P			0.000

No	Factor Loadings of the Post-Elimination Scale		
	1	2	3
A 3		0.800	
A 6		0.748	
A 12		0.652	-0.380
A 16		0.824	
A 20		0.834	
A 22		0.594	-0.346
A 24		0.893	
A 27		0.797	
B 19			0.740
B 21			0.740
B 26			0.700
C 2	0.742		
C 5	0.422		0.308
C 7	0.699		
C 9	0.815		
C 11	0.625		
C 13	0.486		0.400
C 14	0.735		
C 23	0.567		
C 25	0.658		
Kaiser-Meyer-Olkin (KMO)			0.919
Approx. Chi-Square			4076.474
df			190
P			0.000

Table no 2*: Original scale (30 items) and (20 items) factor loading*

EFA: Factor Analysis is a statistical method that was first used in psychological research to figure out how different variables are related to each other[26]. The analysis was initially performed on the 30 items of the scale across three sub-dimensions (Table no 2a). These three subdimensions accounted for 54% of the variance. It was noted that the statements did not group into three sub-dimensions but rather were spread out across other dimensions. The analyses were repeated by sequentially eliminating expressions to enhance cumulative variance and categorize the expressions into three subdimensions[27]. Because data was not collected in three sub-dimensions, especially the distribution of relevant statements in the BU sub-dimension, some statements (1, 4, 8, 10, 15, 17, 18, 28, 29, and 30) were removed. To sum up, articles 3, 6, 12, 16, 20, 22, 24, and 27 are for CS (A), and articles 19, 21, and 26 are for BU (B). Factor analysis was repeated for items 2, 5, 7, 9, 11, 13, 14, 23, and 25 for substances and CF (C) (Table no 2b). In the last attempt, it was found that the expressions were divided into three subdimensions. A total of twenty expressions contributed to 59% of the variance observed in the three subdimensions.

CFA: A statistical technique employed to validate and assess measurement model[26]. In this approach, researchers impose constraints based on established assumptions and adjust the model to align with the fundamental theory by implementing these constraints. Common fit indices for DFA include GFI, AGFI, RMSEA, RMR, and SRMR. This study assessed the primary parameters of GFI, NFI, CFI, CMIN/df, and RMSEA. We found that the Standardized Regression Coefficients were 0.569 or higher in this study. The RMSEA value (0.053), CFI value (0.953), NFI value (0.916), GFI value (0.921), and CMIN/df value (2.146) were also found. The RMSEA and CMIN/df values are in the right range, as shown[27]. The CFI, NFI, and GFI values are also in the normal range that is suggested. CFA (Figure 1) also showed that the new model with 20 items worked as planned.

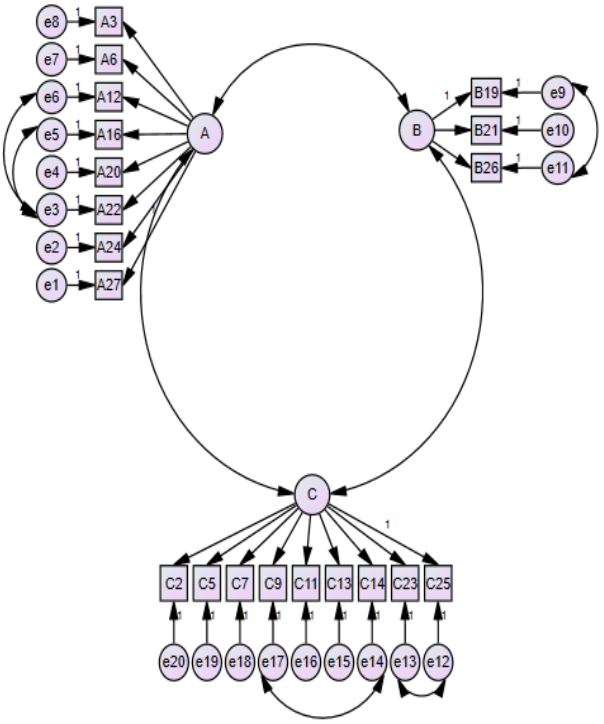

Figure no 1: Confirmatory Factor Analysis.

Pearson's *r*: Pearson correlation is a way to find out if two things are related in a straight line. Derived from the analysis, the coefficient serves to evaluate the magnitude and orientation of the linear relationship among the variables, taking values between -1 and +1. It is said that the relationship gets weaker as the value gets closer to zero and stronger as it gets closer to 1[28]. This study demonstrates a statistically significant positive correlation at the 0.01 level among the items across all subdimensions of the scale. Conversely, burnout shows a negative association with job satisfaction (r = -0.139, $p < 0.01$) and a strong positive association with empathy fatigue (r = 0.687, $p < 0.01$) in Table no 3.

		CS	BU	CF
CS	P. Cor.	1	-0.139**	0.052
	Sig.	-	0.005	0.296
BU	P. Cor.	-0.139**	1	0.687**
	Sig.	0.005	-	0.000
CF	P. Cor.	0.052	0.687**	1
	Sig.	0.296	0.005	-

Table no 3: *Pearson correlation of sub-scales*

III.RESULT

The results were analyzed utilizing descriptive statistics, means of subscales, the independent samples t-test (ISTT), and the dependent samples t-test (DSTT).

Demographic Statistics: The demographic characteristics in this study can be briefly presented in the following sentences. From the total sample of 404 participants, 48.5% (n = 196) were female, while 51.5% (n = 208) were male. Most of the people who conducted the survey are married 57.2% (n = 231) and between the ages of 26 and 41 73.5% (n = 297). Most of them work as EMT/Paramedic 77% (n = 311). The people who took part have worked in the field for anywhere from 0 to 17 years 88% (n = 356). Most of the people who took part have either an associate degree or a bachelor's degree 82% (n = 330). The majority of participants serve within the National Medical Rescue Team (NMRT).

Means of Subscales: The interpretation of the scale and its sub dimensions was based on the intervals proposed by Pimentel[29]. According to these intervals, the analysis of the scale showed that participants' CS levels were 1MB (4.05 - High) from field study, 1ML (4.15 - High) from field study, and 3ML (4.13 - High) from field study (Table no 4a). As a result, the CS levels of the employees who took the survey before and after the field study are generally high. Table no 4b shows that the average scores for the BU sub dimension of employees were 1MB (2.43 - Low), 1ML (2.66 - Medium), and 3ML (2.58 - Low) from the field study. So, the employees' BU levels went up a month after field study and then went down three months later. The average scores for the CF sub dimension for employees were determined as 1MB from field study (2.10 - Low), 1ML from field study (2.44 - Low), and 3ML from field study (2.27 - Low) in Table no 4c. So, one month after the field study, employees' CF went up, but after three months, it started to go down. Consequently, the assessments performed on the task reveal no significant disparity in life quality of the employees involved in the present study concerning their adaptation processes to daily life prior to and following the fieldwork.

CS	1MB	1ML	3ML
Mean	4.05	4.15	4.13
Standard Dev.	0.73	0.72	0.71
Skewness	-0.912	-1.120	-1.013
Kurtosis	0.763	1.281	1.079

Table no 4a: *CS sub-scale analysis*

BU	1MB	1ML	3ML
Mean	2.43	2.66	2.58
Standard Dev.	0.96	1.08	1.05
Skewness	0.394	0.388	0.367
Kurtosis	-0.447	-0.639	-0.513

Table no 4b: *BU sub-scale analysis*

CF	1MB	1ML	3ML
Mean	2.10	2.44	2.27
Standard Dev.	0.71	0.89	0.80
Skewness	0.681	0.492	0.515
Kurtosis	0.346	-0.356	-0.288

Table no 4c: *CF sub-scale analysis*

T-Tests: For this variance analysis to work, the groups must have the same distribution. If there are big differences between the groups, it is not a good idea to do an ANOVA test because it won't give you accurate results. This test was not suitable for this study sample due to the heterogeneous distribution of demographic variables. The t-test is a way to use statistics to compare dependent and independent samples[30]. ISTT is applied to compare the mean scores of two distinct groups within a single subdimension, whereas DSTT is employed to examine whether the means of two related groups from the same sample differ significantly. A significance value ($p < 0.05$) is deemed adequate in the literature to indicate a significant difference between groups. We also calculated the Skewness and Kurtosis to see if the data distribution in the scale sub dimensions was normal before the t-test (Table no 4a, 4b, 4c). These values, which range from -1.12 to +1.28, show that the data is normally distributed[27]. We used an independent group's t-test on demographic characteristics (gender, marital status, level of education, and work experience). The outcomes for age, title, and service in the NMRT unit were excluded from the test due to their heterogeneous distribution. The t-test for dependent groups compared the 1MB-1AS and 1MB-3AS conditions from the field study to assess the relationship between the sub-dimensions of the data collected on the same sample.

ISTT: These tests were carried out in relation to demographic characteristics (gender, marital status, education level, and years of professional experience). This study exclusively presents the outcomes of the gender-sensitive independent group's t-test in Table no 5.

The ISTT was applied to examine differences between female and male participants across the gender-sensitive sub dimensions of the scale. The field study indicates that the CS sub dimension for 1MB, 1ML, and 3ML is not gender-sensitive ($p > 0.05$). The results revealed a statistically significant gender-related distinction in both the BU and CF subscales ($p < 0.05$). Also, female workers have higher average scores on the CS, BU, and CF scales than male workers. In particular, female employees are much more affected by BU and CF. CS, BU, and CF were noted to rise one month after employees engaged in fieldwork and subsequently returned to their regular work routines, subsequently returning to normal levels three months later.

We used an ISTT to compare subscales that were sensitive to marital status (Single/Married). Consequently, the field study indicates that civil status does not significantly affect the BU and CF sub dimensions for 1MB, 1ML, and 3ML ($p > 0.05$). Within the CS subscale, no statistically significant difference was observed between 1MB and 3ML in the field study ($p > 0.05$). However, a significant difference emerged in 1ML, which was influenced by marital status ($p < 0.05$). CS, BU, and CF rose one month after employees actively engaged in fieldwork and resumed their regular work routines, subsequently returning to normal levels three months later.

Sub-Scale		Gender	Frequency	Mean	Standard Dev.	t-test	
						t	sig (*p*)
CS	1MB	Female	196	4.11	0.58	1.490	0.137
		Male	208	4.00	0.85		
	1ML	Female	196	4.17	0.60	0.591	0.555
		Male	208	4.13	0.59		
	3ML	Female	196	4.13	0.59	0.125	0.901
		Male	208	4.12	0.82		
BU	1MB	Female	196	2.68	0.95	5.361	0.000
		Male	208	2.19	0.90		
	1ML	Female	196	2.98	1.04	5.919	0.000
		Male	208	2.37	1.03		
	3ML	Female	196	2.86	1.02	0.737	0.000
		Male	208	2.32	1.02		
CF	1MB	Female	196	2.33	0.70	6.762	0.000
		Male	208	1.88	0.64		
	1ML	Female	196	2.76	0.84	7.353	0.000
		Male	208	2.14	0.83		
	3ML	Female	196	2.50	0.75	5.944	0.000
		Male	208	2.04	0.79		

***Table no 5**: Gender-sensitive independent samples t-test*

To assess the impact of education level (Associate's/Bachelor's), the ISTT was conducted on the scale's sub dimensions. As a result, the field study found that the CS sub dimension for 1MB, 1ML, and 3ML do not change based on education level ($p > 0.05$). Educational level demonstrated a statistically significant impact ($p < 0.05$) on participants' responses to the BU and CF subscales. After employees actively participated in field work and returned to their normal work lives, it was noted that CS, BU, and CF increased one month later and then returned to normal levels three months later.

The ISTT was used to compare the scale's sub dimensions that were sensitive to years of professional experience (0–5 years/12–17 years). Consequently, there exists a non-significant difference ($p > 0.05$) in the CS, BU, and CF sub dimensions for 1MB, 1ML, and 3ML, contingent upon the year of study derived from the fieldwork. Additionally, employees with 0–5 years of service have a higher average CS and a lower BU and CF than employees with 12–17 years of service. After employees actively participated in field work and returned to their normal work lives, it was noted that CS, BU, and CF increased one month later and then returned to normal levels three months later. It can be said that employees who had worked for 0–5 years adapted to normal working conditions faster than those who had worked for 12–17 years after field work.

DSTT: Before and after the field study, we looked at the CS, BU, and CF sub dimensions of the employees who took part. Consequently, statistically significant differences ($p < 0.05$) exist between 1MB-1AS and 1MB-3AS across all sub dimensions from the field study. After conducting fieldwork across all sub dimensions, it is noted that participants acclimatize to standard working conditions over a period ranging from one to three months (Table no 6). The t-test results for the dependent and independent groups indicate that EMS employees require at least three months post-field study to acclimate to daily life and standard working conditions.

		1MB-1ML	1MB-3ML
CS	Mean	-0,099	-0,074
	Sd.	0,294	0,288
	t	-6,739	-5,132
	p	0,000	0,000
BU	Mean	-0,237	-0,156
	Sd.	0,561	0,470
	t	-8,486	-6,663
	p	0,000	0,000
CF	Mean	-0,341	-0,168
	Sd.	0,510	0,431
	t	-13,454	-7,849
	p	0,000	0,000

***Table no 6.** Dependent samples t-test*

IV.DISCUSSION

Previous research indicates that ambulance service personnel encounter a higher rate of health concerns in comparison to the general workforce[31]. Stress, fatigue, and burnout are prevalent issues among EMS professionals that are frequently neglected[17]. Poor working conditions, excessive workloads, a lack of meritocracy, bullying, low job satisfaction, and burnout are some of the reasons why people experience post-traumatic physical stress symptoms[8, 14, 16, and 32]. Individuals subjected to traumatic events, such as disasters, often endure physical and/or psychological issues in both the short and long term, contingent upon their work experience[6, 13, and 15]. This study revealed a negative correlation between the BU/CF and CS subscales, alongside a robust positive correlation between BU and CF. the levels of BU and CF, which were relatively low prior to the field study, increased by 1ML during the study, although they exhibited a declining trend of 3ML. These findings suggest that employees experience a transient reduction in job satisfaction following active engagement in fieldwork, which subsequently normalizes over time. Professionals engaged in clinical and/or crisis intervention services demonstrate a low risk of burnout, a moderate risk of compassion fatigue, and considerable potential for compassion satisfaction[33]. Even four years after the earthquake, emergency rescue workers who were tested for PTSD and burnout still had high scores[9]. Burnout was linked to not having social networks outside of work, blaming oneself, eating too much, or using drugs or alcohol to cope. On the other hand, using religion and instrumental support to deal with stress and social integration was linked to less burnout[12]. Healthcare professionals experienced minimal burnout, relatively high compassion satisfaction, and mild to moderate compassion fatigue[34]. In this study, CS is not influenced by gender for 1MB, 1ML, and 3ML based on the field study. Nevertheless, female employees exhibit elevated levels of Burnout and Empathy Fatigue in comparison to their male counterparts. Men's depersonalization scores surpass those of women, and physician's exhibit greater emotional exhaustion and depersonalization scores compared to other employees[35]. The higher levels of CS, BU, and CF among female employees compared to their male counterparts substantiate this study[36]. The higher average job satisfaction for men compared to women suggests a trend contrary to the findings of this study[37]. In this study, BU and CF do not exhibit sensitivity to marital status. Single people have higher CS than married people. People who are married, on the other hand, have higher levels of BU and CF. CS doesn't care about how educated someone is. On the other hand, BU and CF are higher for people who have a bachelor's degree than for people who have an associate degree. The study investigating the sub dimensions of the scale in relation to the education level of nurses indicated no significant difference[38]. The years of service for the CS, BU, and CF subscales are statistically different from each other. BU and CF are much higher, especially for people who have worked in the field before. Emotional exhaustion among healthcare workers escalates with advancing age and prolonged work duration[35]. Research indicates that a substantial proportion of emergency healthcare personnel are susceptible to compassion fatigue and burnout, with tenure not serving as a significant differentiator among these workers regarding CF and burnout[36]. Another study found that employees who had been on the job for 6 to 10 years were the most satisfied with their work[37]. In research investigating the burnout of emergency service personnel, it was asserted, in contrast to this study, that demographic factors did not exert a significant influence on burnout[39]. The difference here could be because of the way people work and other things in the environment.

V.CONCLUSION

This study highlights a negative correlation between BU and CS, contrasted with a strong positive correlation between BU and CF. Field work shows that CS does not care about gender for 1MB, 1ML, and 3ML. But women have higher levels of BU and CF than men do. Additionally, the BU and CF subscales do not respond to marital status. A statistically significant difference in civil status was identified between 1MB and 1ML within the CS subscale. After the mission, single EMS workers have a higher CS level than married ones. On the other hand, people who are married have higher levels of BU and CF. The CS sub dimension for 1MB, 1ML, and 3ML from field work is not affected by the level of education. Educational status was found to significantly affect the BU and CF sub dimensions. The bachelor's degree employees have much higher BU and CF levels than the associate degree employees. Finally, the field study shows that there is a big difference in the CS, BU, and CF sub dimensions for 1MB, 1ML, and 3ML, and this difference changes depending on the year of study. BU and CF are particularly higher for those with experience in the profession.

There was a 1ML increase and a 3ML decrease in field work at the BU and CF levels compared to 1MB. Such variations reveal that the heightened stress levels reported by workers after disaster field assignments are subject to shifts over time. Moreover, the higher empathy fatigue scores among female participants compared to males can be attributed to women experiencing empathy and emotional burdens more profoundly. Offering psychological support and counseling services to EMS workers on a regular basis will help them avoid burnout and compassion fatigue. Also, it has been noticed that EMS workers are happier with their jobs when they are given tasks outside of their normal work routine, like working in the field after a disaster. Putting EMS workers in different places than where they usually work will help them work more efficiently over time.

In conclusion, both methods agree that EMS workers need at least three months to adjust to normal working and living conditions. It is advised that EMS personnel, who regularly experience traumatic incidents in the course of their duties, undergo monitoring for a minimum of three months, particularly following extended disaster field assignments.

References

1. Mitchell JT, Dyregrov A. Traumatic stress in disaster workers and emergency personnel: prevention and intervention. In: International Handbook of Traumatic Stress Syndromes. Boston (MA): Springer US; 1993.
2. Boudreaux E, Mandry C, Brantley PJ. Stress, job satisfaction, coping, and psychological distress among emergency medical technicians. Prehosp Disaster Med. 1997; 12(4):9-16.
3. Regehr C, Goldberg G, Hughes J. Exposure to human tragedy, empathy, and trauma in ambulance paramedics. Am J Orthopsychiatry. 2002; 72(4):505-513.

4. Maguire BJ, Hunting KL, Guidotti TL, Smith GS. Occupational injuries among emergency medical services personnel. Prehosp Emerg Care. 2005; 9(4):405-511.
5. Sterud T, Ekeberg Ø, Hem E. Health status in the ambulance services: a systematic review. BMC Health Serv Res. 2006; 6(1):1-10.
6. Alexander DA, Klein S. First responders after disasters: a review of stress reactions, at-risk, vulnerability, and resilience factors. Prehosp Disaster Med. 2009; 24(2):87-94.
7. Donnelly E. Work-related stress and posttraumatic stress in emergency medical services. Prehosp Emerg Care. 2012; 16(1):76-85.
8. Weaver MD, Patterson PD, Fabio A, Moore CG, Freiberg MS, Songer TJ. The association between weekly work hours, crew familiarity, and occupational injury and illness in emergency medical services workers. Am J Ind Med. 2015; 58(12):1270-1277.
9. Kawashima Y, Nishi D, Noguchi H, Usuki M, Yamashita A, Koido Y, et al. Post-traumatic stress symptoms and burnout among medical rescue workers 4 years after the Great East Japan Earthquake: a longitudinal study. Disaster Med Public Health Prep. 2016; 10(6):848-853.
10. Ilić IM, Arandjelović MŽ, Jovanović JM, Nešić MM. Relationships of work-related psychosocial risks, stress, individual factors and burnout–questionnaire survey among emergency physicians and nurses. Med Pr. 2017; 68(2):167-178.
11. Pawłowski W, Lasota D, Goniewicz K, Goniewicz M. Post-traumatic stress disorder in disaster workers and emergency personnel. Arch Med Sci Civil Dis. 2018; 3(1):195-201.
12. Boland LL, Mink PJ, Kamrud JW, Jeruzal JN, Stevens AC. Social support outside the workplace, coping styles, and burnout in a cohort of EMS providers from Minnesota. Workplace Health Saf. 2019; 67(8):414-422.
13. Naushad VA, Bierens JJ, Nishan KP, Firjeeth CP, Mohammad OH, Maliyakkal AM, et al. A systematic review of the impact of disaster on the mental health of medical responders. Prehosp Disaster Med. 2019; 34(6):632-643.
14. Greinacher A, Derezza-Greeven C, Herzog W, Nikendei C. Secondary traumatization in first responders: a systematic review. Eur J Psychotraumatol. 2019; 10(1):1562840.
15. Mahaffey BL, Mackin DM, Rosen J, Schwartz RM, Taioli E, Gonzalez A. The disaster worker resiliency training program: a randomized clinical trial. Int Arch Occup Environ Health. 2021; 94:9-21.
16. Elsässer A, Dreher A, Pietrowsky R, Flake F, Loerbroks A. Psychosocial working conditions, perceived patient safety and their association in emergency medical services workers in Germany: a cross-sectional study. BMC Emerg Med. 2024; 24(1):1-13.
17. Gill SK, Lauren RK. A systematic review of occupational stress and burnout in emergency medical technician and paramedic populations and associated consequences. Int J Qual Health Care. 2025; 37(2).
18. Maslach C, Jackson SE. The measurement of experienced burnout. J Occup Behav. 1981; 2(2):99-113.
19. Weisman CS, Nathanson CA. Professional satisfaction and client outcomes: a comparative organizational analysis. Med Care. 1985;23(10):1179-92.
20. Joinson C. Coping with compassion fatigue. Nurs. 1992; 22(4):116-122.
21. Stamm BH. The Pro-QOL manual: the professional quality of life scale: compassion, satisfaction, burnout & compassion fatigue/secondary trauma scales. Sidran Press; 2005.
22. Yeşil A, Ergün Ü, Amasyalı C, Er F, Olgun NN, Aker AT. Validity and reliability of the Turkish version of the professional quality of life scale. Archives of Neuropsychiatry 2010; 47(2):111-117.
23. Carpenter S. Ten steps in scale development and reporting: a guide for researchers. Commun Methods Meas. 2018; 12(1):25-44.
24. Van Selm M, Jankowski NW. Conducting online surveys. Qual Quant. 2006; 40:435-456.
25. George D, Mallery P. IBM SPSS Statistics 27 step by step: a simple guide and reference. Routledge; 2019.
26. Hurley AE, Scandura TA, Schriesheim CA, Brannick MT, Seers A, Vandenberg RJ, Williams LJ. Exploratory and confirmatory factor analysis: guidelines, issues, and alternatives. Journal of Organizational Behavior. 1997; 667-683.
27. Tabachnick BG, Fidell LS. Using multivariate statistics. 6th ed. Boston: Pearson; 2013.
28. Weaver B, Koopman R. An SPSS macro to compute confidence intervals for Pearson's correlation. Quant Methods Psychol. 2014; 10(1):29-39.
29. Pimentel JL. Some biases in Likert scaling usage and its correction. IJSBAR. 2019; 45(1):183-191.
30. Field A. Discovering Statistics Using IBM SPSS Statistics. 4th ed. London: SAGE Publications; 2013.
31. Çoban H, Kutlu YA. Perceived occupational risks of emergency medical services personnel. Int J Recent Trends Multidiscip Res. 2026; 5(1):23-30.
32. Meeker SA, Hahn R, Wilt VL, Molnar BE. Vicarious traumatization among emergency medical service personnel: a systematic review. Trauma Violence Abuse. 2025; 0(0).
33. Jacobson JM. Risk of compassion fatigue and burnout and potential for compassion satisfaction among employee assistance professionals: protecting the workforce. Traumatology. 2012; 18(3):64-72.
34. Yeşil A, Polat Ş. Investigation of psychological factors related to compassion fatigue, burnout, and compassion satisfaction among nurses. BMC Nurs. 2023; 22:12.
35. Özdemir R, Ural S, Çınar M, Nabel EB, Yıldırım H. Determinants of job satisfaction and burnout levels of the primary health care workers: Sample of Karabük province. A Journal of Turkish Medical Association-Community and Physician. 2015; 30(2):150-160.
36. Demirbilek Ö, Uzman E. Compassion fatigue, compassion satisfaction and burnout among 112 emergency health workers - the case of province of Kayseri. Gümüşhane University Journal of Health Sciences. 2021; 10(1):56-69.
37. Ezer S, Üstün B. Investigation of professional quality of life and healthy life style behaviors in health care professionals. Journal of Ege University Nursing Faculty. 2022; 38(1):29-42.
38. Çolak YY, Buldukoğlu K. Assessment of compassion satisfaction, burnout and compassion fatigue levels of the nurses: A university hospital example. Journal of Hacettepe University Faculty of Nursing. 2021; 8(2):144-150.
39. Çıngı F, Şantaş G. Investigation of the relations between work-family conflict, burnout and excess workload in the 112 employees. Hacettepe Journal of Health Administration. 2023; 26(2):393-424.