

Professional Quality of Life among Emergency Healthcare Workers in Erzurum: Rural and Urban Differences

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Abstract: The professional quality of life for emergency department (ED) and emergency medical services (EMS) workers is affected by many factors. Environmental and operational differences between rural and urban settings may further influence these outcomes. This study aimed to compare the professional quality of life among emergency healthcare workers employed in rural and urban areas. This cross-sectional study was conducted between November 2025 and May 2026 in Erzurum, Türkiye. Physicians, nurses, and EMS personnel working in EDs and EMS stations were invited to participate. Professional quality of life was assessed using the Professional Quality of Life Scale Version 5 (ProQOL-5). Sociodemographic and occupational characteristics were also collected and compared between rural and urban healthcare workers. A total of 203 healthcare professionals were included in the study, of whom 178 (87.7%) worked in rural areas and 25 (12.3%) in urban areas. Urban participants were significantly older and had greater professional seniority than rural participants ($p<0.001$). Exposure to workplace violence and lack of post-shift rest were also more common among rural workers ($p<0.05$). However, no significant differences were observed between rural and urban groups regarding compassion satisfaction, burnout, or secondary traumatic stress scores (all $p>0.05$). Compassion satisfaction was negatively correlated with burnout and secondary traumatic stress. Rural and urban emergency healthcare workers demonstrated similar levels of professional quality of life. Strategies aimed at enhancing compassion satisfaction and reducing occupational stressors may improve the well-being of emergency healthcare personnel regardless of workplace location. ©2026 NTMS.

Keywords: Burnout; Compassion fatigue; Emergency medical services; Quality of life.

1. Introduction

Healthcare professionals working in emergency departments (EDs) and emergency medical services (EMS) are characterized by high levels of stress, an unpredictable workload, and the need for rapid critical decision-making. The responsibility of being the first point of contact with patients and their relatives, a heavy workload, the risk of physical and

psychological violence, resource limitations, and the environmental variables of the work setting directly affect the psychosocial well-being of these workers. The literature reports that burnout rates among ED and EMS workers are alarmingly high, with 53.8% of ED workers exhibiting work-related burnout symptoms and 37.1% exhibiting patient-related burnout

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symptoms¹.

The environmental and operational challenges faced by healthcare professionals working in EMS differ significantly according to the nature of the geographical region in which they serve. Teams working in rural areas face unique stressors such as long response times to the scene, inadequate transportation infrastructure, socioeconomic constraints, and the lack of secondary medical support²⁻⁵. These environmental factors may increase the cumulative stress burden experienced by healthcare professionals working in rural areas compared with those working in urban settings.

Burnout, defined by the World Health Organization as a consequence of chronic workplace stress that has not been successfully managed, is a problem that threatens both the quality of healthcare services and patient safety⁽⁶⁾. Although the literature contains comprehensive studies aimed at protecting the psychological health of healthcare workers^{7,8}, the multidimensional assessment of professional quality of life is gaining increasing importance. In this context, the Professional Quality of Life Scale (ProQOL-5), which addresses compassion satisfaction, burnout, and secondary traumatic stress within a holistic approach, is a valid and reliable instrument for assessing professional quality of life⁹.

A review of the literature reveals numerous studies analyzing the burnout levels of healthcare professionals. However, comparative data examining the compassion satisfaction, burnout, and secondary traumatic stress levels of emergency healthcare workers serving in rural and urban areas appear to be limited. In this study, we aimed to compare the professional quality of life of emergency healthcare workers working in rural and urban settings using the ProQOL-5.

2. Material and Methods

2.1. Study Design

This cross-sectional study was conducted between November 1, 2025, and May 1, 2026. Ethical approval for the study was obtained from the Clinical Research Ethics Committee of Atatürk University (decision no: 9/11; date: 31.10.2025). The study was conducted in accordance with the fundamental principles of the Declaration of Helsinki. Written informed consent was obtained from all participating workers after they had been informed about the purpose, method, and voluntary basis of the research.

2.2. Participants

The study population comprised physicians, nurses, and emergency medical technicians working in the emergency departments (EDs) and the 112 emergency medical services (EMS) of hospitals in the city center and rural districts of Erzurum. Workplaces were classified as urban if they were located within the central districts of Erzurum (Palandöken, Yakutiye, and Aziziye) [if they served a population of more than

50,000], and as rural if they were located in the peripheral districts [outside the city center]. A total of (7) EDs and (12) EMS stations in Erzurum province were included in the study. The following inclusion and exclusion criteria were applied in the selection of participants.

Inclusion criteria: (1) being actively employed in an emergency healthcare unit (ED or EMS) in the city center or rural areas of Erzurum during the study period; (2) agreeing to participate voluntarily in the research and approving the "Informed Consent Form"; and (3) having been actively working at the current post for at least six months.

Exclusion criteria: (1) individuals with a known psychiatric diagnosis who were currently receiving psychiatric treatment; (2) participants with incomplete or erroneous questionnaire data; and (3) workers who changed their place of duty or resigned during the study period.

2.3. Data Collection

Data were collected digitally in order to protect the anonymity of the participants and to ensure data security. The questionnaire link was distributed to participants through internal institutional communication channels, and no personal identifying information was included during the data analysis stage. Participants were informed at the beginning of the questionnaire that the data would be used solely for academic purposes and that individual responses would be kept confidential.

2.4. Data Collection Instrument: The ProQOL-5 Scale

The ProQOL-5 was used to assess the professional quality of life of the healthcare professionals. In addition, the sociodemographic characteristics of the participants were recorded. The ProQOL-5 scale was originally developed by Stamm BH to evaluate the positive and negative aspects of the professional lives of helping and caregiving occupational groups (10). The Turkish validity and reliability study of the scale was conducted by Yesil et al., who reported Cronbach's alpha coefficients ranging from 0.77 to 0.87⁽¹¹⁾.

The scale consists of a total of 30 items, and each item is rated on a 5-point Likert-type scale (1 = never, 5 = very often). Items 1, 4, 15, 17, and 29 of the Burnout subscale are reverse-scored. Specifically, responses of 1, 2, 3, 4, and 5 are converted to 5, 4, 3, 2, and 1, respectively. The remaining items are scored in their original direction. Subscale scores are calculated by summing the scores of the 10 items within each subscale, with higher scores indicating a higher level of the respective construct. It comprises three subscales; each subscale has a possible score ranging from 10 to 50.

1. Compassion satisfaction measures the pleasure an individual derives from performing their work well (Items: 3, 6, 12, 16, 18, 20, 22, 24, 27, 30).

2. Burnout assesses emotional exhaustion, loss of energy, and negative attitudes toward work (Items: 1, 4, 8, 10, 15, 17, 19, 21, 26, 29).
3. Secondary traumatic stress measures the stress arising from indirect, work-related exposure to traumatic events (Items: 2, 5, 7, 9, 11, 13, 14, 23, 25, 28).

For each subscale, higher scores indicate a higher level of the respective construct ⁽¹²⁾.

2.4. Sample Size and Power Analysis

The study population consisted of healthcare professionals actively serving in EMS stations and ED units in the province of Erzurum. Sample selection was structured using a stratified sampling method covering these two settings, in order to analyze the effects of the geographical differences of the work environment (rural and urban) on burnout and professional quality of life.

The sample size was calculated using an a priori power analysis performed with G*Power software (v3.1.9.7). The analysis was based on a medium-to-low effect size ($f^2 = 0.0635$), an alpha of 0.05, and a statistical power of 80% ($1 - \beta = 0.80$). Based on a calculation using three predictors, the minimum sample size was determined to be 179. The study was completed with data obtained from a total of 203 healthcare professionals, exceeding the targeted threshold.

2.5. Statistical Analysis

Statistical analyses were performed using SPSS v25 (IBM Corp., Armonk, NY, USA). The conformity of the data to a normal distribution was assessed using the Kolmogorov–Smirnov test. Descriptive statistics were presented as frequencies (n) and percentages (%) for categorical variables and as mean and standard error for numerical variables. The chi-square or Fisher's exact tests were used to compare categorical variables, and the Mann–Whitney U test was used to compare independent groups. Relationships between non-normally distributed variables were examined using Spearman correlation analysis.

3. Results

3.1. Sociodemographic and Occupational Characteristics of the Participants

Of the 215 participants invited to take part in the study, valid and complete data were obtained from 203.

Twelve participants were excluded because their data contained errors or missing information. The sociodemographic and occupational characteristics of the participants are presented in Table 1. The mean age of the participants was 28.7 ± 6.4 years, and 52.2% (n = 106) were women. Of the participants, 44.3% (n = 90) were physicians and 87.7% (n = 178) worked in rural areas. According to the ProQOL-5 scale, the participants' compassion satisfaction, burnout, and secondary traumatic stress scores were 35.1 ± 8.9 , 25.2 ± 5.6 , and 21.9 ± 6.8 , respectively.

3.2. Comparative Analysis of the Participants' Sociodemographic and Occupational Variables by Rural and Urban Work Setting

The distribution of the participants' sociodemographic and occupational characteristics according to work setting, and the analysis of the statistical differences between these variables, are presented in Table 2. Accordingly, when the distribution of participants by work setting was examined, those working in urban areas had a significantly higher mean age (33.1 ± 6.3), rate of marriage (married, 84.0%), number of children, institution, working in one's hometown (64.0%), and professional seniority (10 years and over, 40.0%) than their colleagues in the rural group ($p < 0.001$). Among the occupational variables, occupation and inadequate post-shift rest (40.0%) were significantly higher in the urban group than in the rural group ($p < 0.05$); however, no statistically significant difference was found between the work settings in terms of sex, education level, number of shifts, sleep duration, violence exposure (last 6 months), smoking status, alcohol consumption, compassion satisfaction, burnout, or secondary traumatic stress levels ($p > 0.05$).

The linear relationships among the participants' ProQOL-5 scale scores are presented in Figure 1. A strong, negative relationship was identified between compassion satisfaction and burnout level ($R^2 = 0.378$); a moderate, positive relationship between secondary traumatic stress and burnout ($R^2 = 0.144$). Additionally, a weak, albeit statistically significant, linear association was found between secondary traumatic stress and compassion satisfaction ($R^2 = 0.020$). When visualized by work setting, data points across both groups showed consistent trends along the regression lines; however, these comparisons remain limited by the marked disparity in group sizes (n=178 vs. n=25) and unadjusted confounding factors.

Table 1: Socio-demographic and Occupational Characteristics of the Study Population (n = 203).

Variable	n (%)
Age, mean $\pm$ SD (min-max)	28.7 $\pm$ 6.4 (23-56)
Sex	
Male	97 (47.8)
Female	106 (52.2)
Marital status	
Single	126 (62.1)
Married	77 (37.9)
Number of children	
No	174 (85.7)
One child	15 (7.4)
Two or more children	14 (6.9)
Education	
Associate	57 (28.1)
Bachelor	104 (51.2)
Master	42 (20.7)
Occupation	
Physician	90 (44.3)
Nurse	48 (23.6)
* EMS personnel	65 (32.0)
Institution	
Emergency department	132 (65.0)
EMS	71 (35.0)
Work Area	
Rural	178 (87.7)
Urban	25 (12.3)
Working in Hometown, Yes	59 (29.1)
Professional Seniority	
0-1 year	88 (43.3)
1-5 years	51 (25.1)
5-10 years	34 (16.7)
10 years and over	30 (14.8)
Number of Shifts	
0-4 shifts	16 (7.9)
5-9 shifts	168 (82.8)
10 shifts and above	19 (9.4)
Sleep Duration	
4-6 hours	96 (47.3)
6-8 hours	76 (37.4)
Less than 4 hours	15 (7.4)
More than 8 hours	16 (7.9)
Violence Exposure (Last 6 Months), Yes	75 (36.9)
Post-Shift Rest, No	41 (20.2)
Smoking Status, Yes	87 (42.9)
Alcohol Consumption, Yes	43 (21.2)
Compassion Satisfaction, mean $\pm$ SD (min-max)	35.1 $\pm$ 8.9 (12-50)
Burnout Level, mean $\pm$ SD (min-max)	25.2 $\pm$ 5.6 (10-42)
Secondary Traumatic Stress, mean $\pm$ SD (min-max)	21.9 $\pm$ 6.8 (10-46)

* EMS: emergency medical service

Table 2: Distribution of the participants' sociodemographic and occupational characteristics by work setting, and analysis of the statistical differences between these variables.

Variable, n (%)	Rural	Urban	p value
Age, mean $\pm$ SD (min-max)	28.1 $\pm$ 6.2 (23-56)	33.1 $\pm$ 6.3 (26-51)	< 0.001 ^a
Sex			
Male	84 (47.2)	13 (52.0)	0.652 ^b
Female	94 (52.8)	12 (48.0)	
Marital status			
Single	122 (68.5)	4 (16.0)	< 0.001 ^c
Married	56 (31.5)	21 (84.0)	
Number of children			
No	159 (89.3)	15 (60.0)	< 0.001 ^b
One child	10 (5.6)	5 (20.0)	
Two or more children	9 (5.1)	5 (20.0)	
Education			
Associate	52 (29.2)	5 (20.0)	0.578 ^b
Bachelor	89 (50.0)	15 (60.0)	
Master	37 (20.8)	5 (20.0)	
Occupation			
Physician	84 (47.2)	6 (24.0)	0.045 ^b
Nurse	42 (23.6)	6 (24.0)	
EMS personnel	52 (29.2)	13 (52.0)	
Institution			
Emergency department	125 (70.2)	7 (28.0)	< 0.001 ^b
* EMS	53 (29.8)	18 (72.0)	
Working in Hometown, Yes	43 (24.2)	16 (64.0)	< 0.001 ^b
Professional Seniority			
0-1 year	86 (48.3)	2 (8.0)	< 0.001 ^c
1-5 years	48 (27.0)	3 (12.0)	
5-10 years	24 (13.5)	10 (40.0)	
10 years and over	20 (11.2)	10 (40.0)	
Number of Shifts			
0-4 shifts	15 (8.4)	1 (4.0)	0.119 ^c
5-9 shifts	149 (83.7)	19 (76.0)	
10 shifts and above	14 (7.9)	5 (20.0)	
Sleep Duration			
4-6 hours	81 (45.5)	15 (60.0)	0.392 ^c
6-8 hours	68 (38.2)	8 (32.0)	
Less than 4 hours	15 (8.4)	-	
More than 8 hours	14 (7.9)	2 (8.0)	
Violence Exposure (Last 6 Months), Yes	62 (34.8)	13 (52.0)	0.096 ^b
Post-Shift Rest, No	31 (17.4)	10 (40.0)	0.001 ^b
Smoking Status, Yes	74 (41.6)	13 (52.0)	0.324 ^b
Alcohol Consumption, Yes	37 (20.8)	6 (24.0)	0.713 ^b
Compassion Satisfaction, mean $\pm$ SD (min-max)	35.6 $\pm$ 8.5 (12-50)	32.1 $\pm$ 10.9 (13-49)	0.133 ^a
Burnout Level, mean $\pm$ SD (min-max)	25.0 $\pm$ 5.7 (10-42)	26.7 $\pm$ 4.2 (16-31)	0.101 ^a
Secondary Traumatic Stress, mean $\pm$ SD (min-max)	21.8 $\pm$ 6.7 (11-44)	22.4 $\pm$ 7.6 (10-46)	0.681 ^a

* EMS: emergency medical service; a: Mann-Whitney Test; b: Pearson Chi-Square Test; c: Fisher's Exact Test.

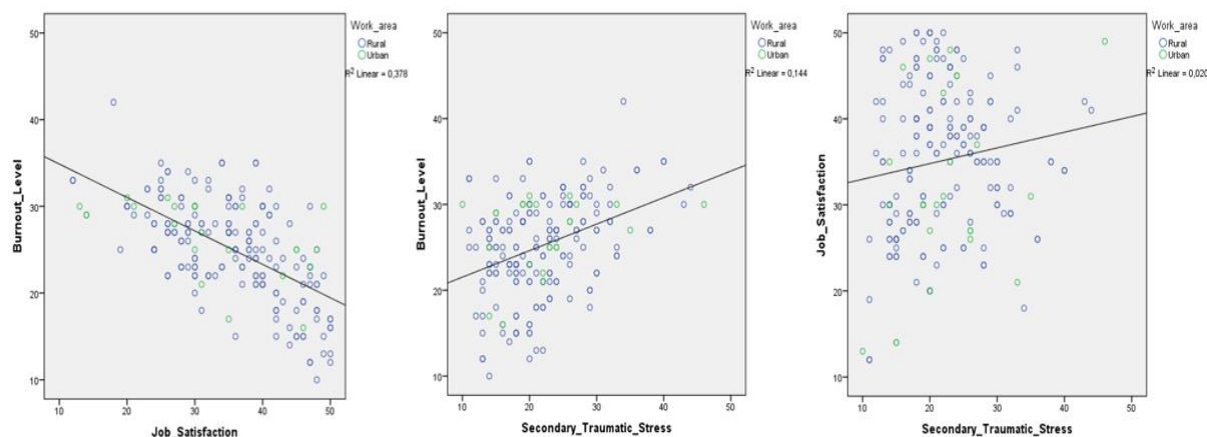


Figure 1: Linear relationships among the participants' ProQOL-5 scale scores.

4. Discussion

The regression analysis suggests that the relationships among the ProQOL dimensions were similar across rural and urban settings. The regression analysis results obtained in our study reveal that the dynamics determining the professional quality of life of workers serving in EMS are universal in nature and independent of location. In particular, the strong negative relationship between compassion satisfaction and burnout ($R^2 = 0.378$) demonstrates that an increase in compassion satisfaction is the most fundamental protective factor against burnout, single-handedly explaining approximately 38% of the variance in these symptoms. Furthermore, the positive prediction of burnout by secondary traumatic stress ($R^2 = 0.144$) confirms that exposure to traumatic cases creates a cumulative stress burden. The fact that the data points exhibited a similar distribution around the regression line in both rural and urban areas indicates that these psychological interactions inherent in the discipline of emergency medicine appeared to be similar across rural and urban settings, and that intervention strategies should focus on enhancing compassion satisfaction and trauma management rather than on regional differences.

In rural areas, healthcare institutions face difficulties in both developed and developing countries because the number of workers is lower than required¹³. This may be regarded as a stress-increasing factor, particularly for ED and EMS workers. However, because the unnecessary use of EDs and EMS has been reported to be common in our country, EDs and EMS in city centers also operate under a very heavy workload. In a study conducted without distinguishing between urban and rural settings, the rate of inappropriate use of 112 emergency ambulances in Türkiye was determined to be 68.77%¹⁴.

Increased burnout and secondary traumatic stress levels reduce the pleasure that healthcare workers derive from their work and, consequently, their compassion satisfaction levels¹⁶. Previous studies have rated the burnout and secondary traumatic stress levels of many healthcare workers as quite high^{17,18}. In our study, however, the burnout and secondary

traumatic stress levels of ED and EMS workers in both rural and urban areas were found to be at a moderate-to-low level, while their compassion satisfaction was at a moderate-to-high level. Slocum-Gori et al. described compassion satisfaction as "the emotional reward of caring for others"¹⁹. This may be related to the nature of emergency medicine. Knowing that one can help patients in acute and emergency situations, and actually providing that help, may have made ED and EMS workers increase their sense of professional accomplishment. One study demonstrated that healthcare workers and physicians on the front lines during the COVID-19 pandemic derived much greater pleasure from their work²⁰. This was associated with directly observing that the treatments administered to patients were effective. Similarly, in the ED and EMS, the outcomes of the treatments applied to patients are seen rapidly by healthcare workers. Therefore, although healthcare workers in these fields are occasionally exposed to burnout or secondary traumatic stress, they experience compassion satisfaction as they observe the benefit to the patient.

Although one study identified geographical challenges, the anxiety of being unable to provide more effective treatments, feelings of inadequacy, and limited access to technology and infrastructure as the main causes of burnout-particularly among healthcare workers in rural areas-it also showed that compassion satisfaction among more experienced healthcare workers was higher than among inexperienced ones²¹. The main reason for this was explained by appropriate professional development. In our study, ED and EMS workers serving in rural areas showed higher compassion satisfaction than those working in urban areas. However, because our rural group was in the early years of their careers, this finding cannot be explained by professional development. In our study, the members of the rural group generally worked in their own hometowns. This finding may reflect workers' acceptance of environmental difficulties and their familiarity with and adoption of the region in which they work.

Our study indicated a negative correlation between compassion satisfaction and both secondary traumatic stress and burnout among ED and EMS workers in both rural and urban areas. However, McGrath et al., in their study, argued that secondary traumatic stress was unrelated to both compassion satisfaction and burnout²¹. They explained this by suggesting that compassion satisfaction initially protected against stress exposure, reduced negative mood, and subsequently decreased secondary traumatic stress. In that study, the participants were physiotherapists who did not encounter emergencies. We believe that the negative correlation observed in our study stems from the pleasure of observing immediate patient improvement as a result of their work, even though workers responding to emergencies-by the very nature of emergency medicine-inevitably face difficult situations. Based on all of this, although ED and EMS workers experience work-related stress and burnout, they appear to be a group with a high level of compassion satisfaction.

5. Conclusion

ED and EMS workers in rural and urban areas had similar levels of burnout, secondary traumatic stress, and compassion satisfaction. In both groups, compassion satisfaction showed a negative correlation with burnout level and secondary traumatic stress. Reducing the unnecessary workload of EDs and EMS may increase compassion satisfaction by enhancing workers' competencies in the critical cases that are their main focus. In addition, implementing the necessary legal and administrative regulations to reduce workers' exposure to physical and verbal violence may reduce their burnout and secondary traumatic stress levels.

Limitations of the Study

Our study has some limitations. First, although data were collected from healthcare personnel across multiple EDs and EMS stations, the study is limited to a single province (Erzurum). Although participants were recruited from both urban and rural emergency healthcare settings, the study was conducted exclusively within Erzurum Province, which may limit the generalizability of the findings to other geographic and sociocultural contexts. One of the primary limitations of this study is the imbalance in sample sizes between the groups ($n=178$ vs $n=25$). Although the demographic differences and numerical disparity present potential confounding effects, multivariable analyses could not be reliably performed due to the statistical constraints of our small urban sample size. Therefore, these potential confounders could not be fully adjusted for, highlighting the need for future studies with larger and more balanced cohorts. In addition, the possibility that questionnaire-based data may be influenced by the participants' momentary psychological state should not be overlooked. Moreover, the exclusion of participants currently receiving psychiatric treatment may have

introduced selection bias, potentially underestimating the true prevalence of burnout and traumatic stress among healthcare workers and limiting the generalizability of the findings to the entire workforce. In future studies, cross-validation of the data with a wider geographical distribution and balanced sample groups is recommended.

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Conflict of Interests

The authors declare that they have no conflicts of interest.

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Author Contributions

Concept- O.F.I., F.T.; Design-O.F.I., F.T. ; Supervision- E.T., O.F.I. ; Resources- E.T., F.T. ; Data Collection and/or Processing-E.T., F.T. ; Analysis and/or Interpretation- E.T., O.F.I., F.T.; LiteratureSearch- O.F.I., F.T., E.T.; Writing Manuscript- O.F.I., E.T., F.T.; Critical Review- E.T., F.T.

Ethical Approval

This study was approved by the Atatürk University Clinical Research Ethics Committee (Decision no: 9/11; date: 31.10.2025).

Data Sharing Statement

The datasets generated and/or analyzed during the current study are not publicly available due to privacy and ethical considerations but may be made available from the corresponding author upon reasonable request, subject to applicable ethical and institutional approvals.

Consent to participate

Written informed consent was obtained from all participants prior to their inclusion in the study. Participation was entirely voluntary, and confidentiality and anonymity were maintained throughout the study.

Informed Statement

Informed consent was deemed for this study.

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