**Research**

Psikiyatride Güncel Yaklaşımlar-Current Approaches in Psychiatry 2026; 18(Suppl 1):505-517

doi: 10.18863/pgy.2017674

# Posttraumatic Stress Symptoms and Related Factors Among Healthcare Workers in the Third Year After Kahramanmaraş Earthquakes

## Kahramanmaraş Depremlerinin Üçüncü Yılında Sağlık Çalışanlarında Görülen Travma Sonrası Stres Belirtileri ve İlgili Faktörler

Ali Meriç Kurt[1], Zeynep Namlı[2], Lut Tamam[2], Mehmet Emin Demirkol[2], Mahmut Onur Karaytuğ[2], Caner Yeşiloğlu[2], Sinem Çetin Demirtaş[2], İrem Sanem Sabahi[2]

[1]Nizip State Hospital, Gaziantep
[2]Cukurova University, Adana

## ABSTRACT

Objective: This study aimed to evaluate posttraumatic stress symptoms among healthcare workers in the third year following the Kahramanmaraş-centered earthquakes and to examine the relationships of these symptoms with perceived social support, personality traits, anxiety, and depression levels.

Method: A total of 174 healthcare workers who were employed at the same hospital during the February 6, 2023 earthquakes were included in the study. Participants were evaluated using the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5), the Multidimensional Scale of Perceived Social Support (MSPSS), the Revised Abbreviated Eysenck Personality Questionnaire (EPQR-A), the Beck Anxiety Inventory (BAI), and the Beck Depression Inventory (BDI).

Results: The mean age of the participants was 35.94±9.40 years, and 65.5% were female. Posttraumatic stress symptom severity was positively correlated with depressive, and anxiety symptoms, and neuroticism, and negatively correlated with perceived social support. PCL-5 scores were significantly higher among participants who worked in the disaster area during the first month after the earthquakes, experienced housing damage, were displaced from their homes for at least one week, relocated their residence, experienced housing problems, or had a physically injured relative. In the multiple linear regression analysis, anxiety symptoms and perceived social support were independently associated with posttraumatic stress symptom severity ($R^2$=0.496).

Conclusion: Approximately three years after the Kahramanmaraş-centered earthquakes, posttraumatic stress symptoms among healthcare workers were associated with anxiety levels, perceived social support, and secondary stressors arising in the aftermath of the disaster.

**Keywords:** Earthquake, healthcare workers, posttraumatic stress symptoms, perceived social support, anxiety

## ÖZ

Amaç: Bu çalışmada, Kahramanmaraş merkezli depremlerin üçüncü yılında sağlık çalışanlarında travma sonrası stres belirtilerinin değerlendirilmesi ve bu belirtilerin algılanan sosyal destek, kişilik özellikleri, anksiyete ve depresyon düzeyleri ile ilişkisinin incelenmesi amaçlandı.

Yöntem: Çalışmaya, 6 Şubat 2023 depremleri sırasında aynı hastanede görev yapan 174 sağlık çalışanı dahil edildi. Katılımcılar DSM-5 için Travma Sonrası Stres Bozukluğu Kontrol Listesi (PCL-5), Çok Boyutlu Algılanan Sosyal Destek Ölçeği (ÇBASDÖ), Eysenck Kişilik Anketi Gözden Geçirilmiş Kısa Formu (EKA-GGKF), Beck Anksiyete Envanteri (BAE) ve Beck Depresyon Envanteri (BDE) ile değerlendirildi.

Bulgular: Katılımcıların yaş ortalaması 35,94±9,40 yıl olup %65,5'i kadındı. Travma sonrası stres belirti düzeyi depresif belirtiler, anksiyete belirtileri ve nörotisizm ile aynı yönlü, algılanan sosyal destek ile zıt yönlü ilişkiliydi. Depremden sonraki ilk bir ay içerisinde saha görevi yapanlarda, konut hasarı bulunanlarda, en az bir hafta evden ayrılanlarda, ikamet değişikliği yapanlarda, barınma sorunu yaşayanlarda ve yakını fiziksel olarak yaralananlarda PCL-5 puanları anlamlı olarak daha yüksekti. Çoklu doğrusal regresyon analizinde anksiyete belirtileri ve algılanan sosyal destek travma sonrası stres belirti düzeyi ile bağımsız olarak ilişkiliydi ($R^2$=0,496).

Sonuç: Depremden yaklaşık üç yıl sonra sağlık çalışanlarında travma sonrası stres belirtileri anksiyete düzeyi, algılanan sosyal destek ve afet sonrasında ortaya çıkan ikincil stresörlerle ilişkili bulunmuştur.

**Anahtar sözcükler:** Deprem, sağlık çalışanları, travma sonrası stres belirtileri, algılanan sosyal destek, anksiyete

**Yazışma Adresi / Address For Correspondence:** Ali Meriç Kurt, Nizip State Hospital, Department of Psychiatry, Gaziantep, Türkiye
**e-mail:** ali.meric96@gmail.com
**Received:** 13.08.2026 | **Accepted:** 10.10.2026

# Introduction

On February 6, 2023, two devastating earthquakes with magnitudes of 7.7 and 7.6, centered in the Pazarcık and Elbistan districts of Kahramanmaraş, respectively, struck Türkiye. These earthquakes, among the most catastrophic disasters in the history of the Republic of Türkiye, directly affected 11 provinces, resulting in widespread loss of life and extensive physical destruction. Earthquakes are known to have not only physical consequences but also substantial psychological effects on individuals and communities that may persist over extended periods. Healthcare workers serving in the affected regions were not only disaster survivors who had personally experienced the earthquakes but also professionals who continued to provide healthcare under overwhelming patient loads, witnessing severe injuries and deaths while working long hours with limited resources. Consequently, they were exposed to both primary and secondary traumatic experiences (Wang et al. 2023, Satilmis et al. 2024). This dual exposure to trauma has been associated with an increased risk of various mental health problems among healthcare workers following earthquakes, particularly posttraumatic stress symptoms (Wang et al. 2023, Satilmis et al. 2024).

Posttraumatic stress disorder (PTSD) is a mental disorder that may develop following direct exposure to or witnessing a traumatic event involving death, serious injury, or sexual violence, or repeated exposure to details of traumatic events in the course of professional duties. It is characterized by intrusive re-experiencing symptoms, avoidance behaviors, negative alterations in cognition and mood, and heightened arousal (APA 2022). PTSD following disasters can adversely affect individuals' psychosocial functioning, quality of life, and occupational performance. Among healthcare workers in particular, it has been associated with burnout, reduced job satisfaction, and difficulties in healthcare delivery (Brooks et al. 2018, Sehlikoğlu et al. 2023). Therefore, identifying factors associated with posttraumatic stress symptoms among healthcare workers is important for both protecting their mental health and planning disaster-resilient and sustainable healthcare services.

Not all individuals exposed to a traumatic event develop PTSD, and both the onset of the disorder and the severity of its symptoms are shaped by interactions between the characteristics of traumatic exposure and individual and environmental factors (APA 2022, Sirotich and Camisasca 2024). The degree of trauma exposure, the role assumed during the event, and the nature and duration of traumatic experiences are considered among the major risk factors for developing PTSD (Wang et al. 2023, Sirotich and Camisasca 2024). In addition, PTSD frequently co-occurs with anxiety and depressive symptoms, which may mutually exacerbate one another and adversely affect psychological functioning (Uddin et al. 2024). In recent years, psychosocial resources, alongside traumatic exposure, have been shown to play an important role in posttraumatic adjustment. In particular, higher levels of perceived social support have been associated with lower levels of posttraumatic stress symptoms, whereas insufficient social support has been linked to greater symptom severity (Wang et al. 2021). Similarly, personality traits have been suggested to be associated with posttraumatic stress symptoms by influencing how individuals appraise traumatic events, cope with stress, and adjust following trauma (Yin et al. 2019).

Current literature indicates that individual and psychosocial factors, in addition to traumatic exposure, play important roles in the development of posttraumatic psychological symptoms. A recent study involving healthcare workers who experienced the Kahramanmaraş earthquakes also demonstrated an inverse association between traumatic stress symptoms and psychological resilience (Polat et al. 2025). However, studies examining these associations in the later years following disasters, particularly in relation to perceived social support and personality traits among healthcare workers, remain limited. Most studies evaluating the mental health of healthcare workers following the Kahramanmaraş earthquakes have focused on the first few months or the first year after the disaster, leaving limited evidence regarding their long-term psychological consequences. Given that psychological symptoms identified in the early postdisaster period may diminish, persist, or follow different trajectories over time, assessments beyond the acute and early postdisaster phases are essential for understanding the long-term psychological effects of disasters. Failure to recognize long-term mental health consequences may adversely affect healthcare workers' individual well-being and their ability to fulfill professional responsibilities. Therefore, it is important to assess posttraumatic stress symptoms and their associated individual and psychosocial

factors even several years after an earthquake. This study aimed to evaluate posttraumatic stress symptoms among healthcare workers in the third year following the Kahramanmaraş earthquakes and to examine their associations with perceived social support, personality traits, anxiety, and depressive symptoms. Accordingly, we hypothesized that posttraumatic stress symptoms would be positively associated with anxiety and depressive symptoms and negatively associated with perceived social support, while personality traits and earthquake-related exposures would also be associated with posttraumatic stress symptom severity.

# Method

This cross-sectional observational study was conducted at Çukurova University Faculty of Medicine, Balcalı Hospital. Ethical approval was obtained from the Çukurova University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (January 9, 2026; Number. 162/50). The study was conducted in accordance with the principles of the Declaration of Helsinki, and written informed consent was obtained from all participants before enrollment.

## Sample

The sample size was determined through an a priori power analysis performed using G*Power, based on the examination of associations between variables in accordance with the study hypotheses. Using the Exact test family for a two-tailed bivariate normal correlation analysis, with a medium effect size (r=0.30), $\alpha$=0.05, and 80% statistical power, the minimum required sample size was calculated as 84 participants. To account for potential data loss and incomplete questionnaires, a larger sample was targeted.

The study included healthcare workers aged 18 years or older who were actively employed at Çukurova University Balcalı Hospital during the study period, had also been employed at the same hospital at the time of the February 6, 2023 earthquakes, and were able to read and understand Turkish. No upper age limit was specified. Participants were recruited through voluntary convenience sampling from healthcare workers who were accessible during the study period and agreed to participate. The exclusion criteria were an acute exacerbation of a psychotic or bipolar disorder; the presence of an alcohol or substance use disorder; insufficient cognitive capacity to complete self-report questionnaires due to intellectual disability or dementia; and clinical conditions requiring urgent psychiatric assessment and intervention, such as delirium or suicidal ideation. Acute exacerbations of psychotic or bipolar disorders were considered exclusion criteria because they could interfere with the assessment of current psychiatric symptoms and the reliable completion of self-report questionnaires. During the study period, a total of 183 healthcare workers who agreed to participate were assessed. Nine participants were excluded from the analyses because of incomplete self-report questionnaires, resulting in a final sample of 174 participants for statistical analysis.

## Procedure

Participants underwent face-to-face clinical interviews conducted by the psychiatrist responsible for the study. No structured diagnostic interview was used. During these assessments, participants' eligibility according to the inclusion and exclusion criteria was evaluated, and information regarding their sociodemographic characteristics, history of psychiatric consultations, and earthquake-related experiences and exposures was recorded using a data collection form developed by the researchers. Following the clinical interview, participants completed standardized self-report scales assessing posttraumatic stress symptoms, perceived social support, anxiety, depression, and personality traits.

## Measures

### Sociodemographic and Clinical Data Form

Sociodemographic characteristics, including age, sex, years of education, marital status, occupation, place of residence, smoking, and alcohol use, were assessed by the researcher using a data collection

form. Earthquake-related exposures, including participation in healthcare delivery during the earthquakes, provision of healthcare services within the first 72 hours and the first month following the earthquakes, housing damage, forced displacement from home, change of residence, housing difficulties, loss of relatives, physical injury, post-earthquake staff shortages, and increases in working hours and the number of on-call shifts, were also recorded. In addition, the researcher documented participants' history of seeking psychiatric treatment, the timing of psychiatric consultations (before or after the earthquakes), and whether these consultations were related to the earthquakes.

### Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)

Posttraumatic stress symptoms were assessed using the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5). The PCL-5 is a 20-item self-report scale developed by Weathers et al. based on the DSM-5 diagnostic criteria to assess posttraumatic stress symptoms experienced during the past month (Weathers et al. 2013). Each item is rated on a scale from 0 (Not at all) to 4 (Extremely), yielding a total score ranging from 0 to 80. Higher scores indicate greater severity of posttraumatic stress symptoms. The Turkish adaptation and validation study was conducted by Boysan et al., who identified four subscales and reported internal consistency coefficients ranging from 0.79 to 0.92 for intrusion, 0.73 to 0.91 for avoidance, 0.85 to 0.90 for negative alterations in cognition and mood, and 0.81 to 0.88 for alterations in arousal and reactivity (Boysan et al. 2017). The PCL-5 total score was used in the present study. In the current sample, Cronbach's alpha coefficient for internal consistency was calculated as 0.91.

### Multidimensional Scale of Perceived Social Support (MSPSS)

Perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS), developed by Zimet et al. (Zimet et al. 1988). The scale consists of 12 items across three subscales assessing perceived social support from family, friends, and a significant other. Each item is rated on a 7-point Likert scale, with higher scores indicating greater perceived social support. The Turkish validity and reliability study was conducted by Eker and Arkar, who confirmed the three-factor structure of the Turkish version and reported a Cronbach's alpha coefficient of 0.89 for the total scale and 0.85 for family, 0.88 for friends, and 0.92 for significant other support (Eker and Arkar 1995). The MSPSS total score was used in the present study. In the current sample, Cronbach's alpha coefficient for internal consistency was calculated as 0.92.

### Eysenck Personality Questionnaire Revised–Abbreviated (EPQR-A)

Personality traits were assessed using the Eysenck Personality Questionnaire Revised–Abbreviated (EPQR-A), developed by Francis, Brown, and Philipchalk (Francis et al. 1992). The questionnaire is a 24-item self-report instrument comprising four subscales: extraversion, neuroticism, psychoticism, and lie. Each subscale consists of six items answered with "yes" or "no." The Turkish adaptation was conducted by Karancı et al., who reported internal consistency coefficients of 0.78 for extraversion, 0.65 for neuroticism, 0.42 for psychoticism, and 0.64 for the lie subscale (Karancı et al. 2007). In the present study, the extraversion, neuroticism, and psychoticism subscale scores of the EPQR-A were used. The lie subscale was excluded from the statistical analyses because it serves as a control measure for socially desirable responding. In the current sample, Cronbach's alpha coefficients for the extraversion, neuroticism, psychoticism, and lie subscales were 0.81, 0.82, 0.22, and 0.64, respectively.

### Beck Anxiety Inventory (BAI)

Anxiety symptoms were assessed using the Beck Anxiety Inventory (BAI), developed by Beck et al. (Beck et al. 1988). The BAI is a 21-item self-report scale designed to assess the severity of anxiety symptoms. Each item is rated from 0 to 3, yielding a total score ranging from 0 to 63. Higher scores indicate greater severity of anxiety symptoms. The Turkish validity and reliability study was conducted by Ulusoy et al., who reported a Cronbach's alpha coefficient of 0.93 for the Turkish version (Ulusoy et al. 1998). The BAI total score was used in the present study. In the current sample, Cronbach's alpha coefficient for internal consistency was calculated as 0.95.

### Beck Depression Inventory (BDI)

Depressive symptoms were assessed using the Beck Depression Inventory (BDI), developed by Beck et al. (Beck et al. 1961). The BDI is a 21-item self-report scale designed to assess the severity of depressive symptoms. Each item is rated from 0 to 3, yielding a total score ranging from 0 to 63. Higher scores indicate greater severity of depressive symptoms. The Turkish validity and reliability study was conducted by Hisli, who reported a Cronbach's alpha coefficient of 0.81 for the Turkish version (Hisli 1989). The BDI total score was used in the present study. In the current sample, Cronbach's alpha coefficient for internal consistency was calculated as 0.93.

## Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA). The normality of continuous variables was assessed using the Kolmogorov–Smirnov test. Descriptive statistics were presented as mean ± standard deviation for continuous variables and as frequencies and percentages for categorical variables. Independent-samples t-tests were used to compare PCL-5 scores between groups defined by the presence or absence of earthquake-related categorical variables. Associations between continuous variables were evaluated using Pearson correlation analysis. Multiple linear regression analysis was performed to examine the independent associations of psychological and psychosocial variables with PCL-5 total scores. Anxiety symptoms, depressive symptoms, perceived social support, and neuroticism, which showed statistically significant correlations with PCL-5 total scores, were included in the regression model. An additional hierarchical multiple linear regression analysis was conducted to evaluate the incremental contribution of earthquake-related exposures to the model. The first model included anxiety symptoms, depressive symptoms, perceived social support, and neuroticism. In the second model, field duty during the first month following the earthquakes was added to represent occupational disaster exposure, along with housing difficulties to represent postdisaster housing-related stressors. Multicollinearity in the regression models was assessed using the variance inflation factor (VIF). In the hierarchical regression analysis, model explanatory power was evaluated using $R^2$ and adjusted $R^2$, while the incremental contribution of the second model was assessed using the change in $R^2$ ($\Delta R^2$) and the F-change statistic ($\Delta F$). A two-tailed p-value of $<0.05$ was considered statistically significant for all analyses.

# Results

The mean age of the participants was 35.94 ± 9.40 years, and the mean duration of education was 15.37 ± 3.58 years. Of the participants, 65.5% were female, 54.6% were married, and 83.3% resided in urban centers. Physicians accounted for 40.2% of the sample, nurses for 21.3%, and other healthcare workers for 38.5%. A history of psychiatric consultation was reported by 49.4% of the participants, with 64.0% of these consultations occurring after the earthquakes. Among those who sought psychiatric care after the earthquakes, 65.5% reported that their consultations were related to trauma symptoms (Table 1). Descriptive statistics for the total scores obtained from the psychometric scales are presented in Table 2.

The associations between PCL-5 scores and sociodemographic and earthquake-related variables are presented in Table 3. All participants (n=174, 100%) were in provinces affected by the earthquakes when they occurred. A total of 114 participants (65.5%) were on duty during the earthquakes, 108 (62.1%) worked in the earthquake-affected region within the first three days, and 49 (28.2%) were assigned to field duty at disaster sites, field hospitals, or temporary healthcare facilities during the first month following the earthquakes. Housing damage was reported by 62 participants (35.6%), displacement from home for at least one week by 111 (63.8%), change of residence by 42 (24.1%), and housing difficulties by 62 (35.6%). Physical injury to a relative was reported by 34 participants (19.5%), while 4 participants (2.3%) sustained physical injuries themselves. No statistically significant associations were found between PCL-5 scores and age, sex, marital status, being on duty during the earthquakes, or working in the earthquake-affected region within the first three days (all $p>0.05$). In contrast, PCL-5 scores were significantly higher among participants who were assigned to field duty during the first month following the earthquakes, experienced

housing damage, were displaced from their homes for at least one week, changed their place of residence, experienced housing difficulties, or had a relative who sustained physical injuries (all p<0.05).

PCL-5 scores showed significant strong positive correlations with depressive symptom severity (r=0.527, p<0.001), anxiety symptom severity (r=0.688, p<0.001), and the EPQR-A neuroticism subscale (r=0.503, p<0.001), and a significant moderate negative correlation with perceived social support (r=–0.317, p<0.001). No significant correlations were found between PCL-5 scores and the EPQR-A extraversion or psychoticism subscales (p>0.05). The results of the correlation analyses among the scales are presented in Table 4.

**Table 1. Sociodemographic and clinical characteristics of the participants (n=174)**

| **Değişken** | **n (%) / Ortalama ± SS** |
|---|---|
| Age (years) | 35.94 ± 9.40 |
| Years of education | 15.37 ± 3.58 |
| Sex | |
| Female | 114 (65.5) |
| Male | 60 (34.5) |
| Marital status | |
| Married | 95 (54.6) |
| Single | 79 (45.4) |
| Place of residence | |
| Provincial center | 145 (83.3) |
| Settlement outside the provincial center | 29 (16.7) |
| Occupation | |
| Physician | 70 (40.2) |
| Nurse | 37 (21.3) |
| Other healthcare worker | 67 (38.5) |
| Smoking status | |
| Yes | 62 (35.6) |
| No | 112 (64.4) |
| Alcohol use | |
| Yes | 57 (32.8) |
| No | 117 (67.2) |
| History of psychiatric consultation | |
| Yes | 86 (49.4) |
| No | 88 (50.6) |
| Timing of psychiatric consultation* | |
| Before the earthquakes | 31 (36.0) |
| After the earthquakes | 55 (64.0) |
| Psychiatric consultation related to trauma symptoms† | |
| Yes | 36 (65.5) |
| No | 19 (34.5) |

SD: Standard deviation. * Assessed only among participants with a history of psychiatric consultation (n=86). † Assessed only among participants who sought psychiatric care after the earthquakes (n=55)

**Table 2. Psychometric scale scores of the participants (n=174)**

| **Scale** | **Mean ± SD** |
|---|---|
| PCL-5 | 27.99 ± 17.00 |
| BDI | 12.34 ± 10.42 |
| BAI | 15.54 ± 13.14 |
| MSPSS | 66.17 ± 15.52 |
| EPQR-A Neuroticism | 2.96 ± 2.14 |
| EPQR-A Extraversion | 3.65 ± 2.05 |
| EPQR-A Psychoticism | 1.38 ± 1.09 |

SD: Standard deviation; PCL-5: Posttraumatic Stress Disorder Checklist for DSM-5; BDI: Beck Depression Inventory; BAI: Beck Anxiety Inventory; MSPSS: Multidimensional Scale of Perceived Social Support; EPQR-A: Eysenck Personality Questionnaire Revised–Abbreviated.

| Table 3. Associations of PCL-5 scores with sociodemographic and earthquake-related variables (n=174) | | | | |
|---|---|---|---|---|
| **Variable** | **n (%)** | **PCL-5 score (Mean ± SD)** | **p** | **Cohen's d** |
| Age (years) † | 174 | r=0.119† | 0.117 | — |
| Sex | | | | |
| Female | 114 (65.5) | 29.39 ± 17.29 | | |
| Male | 60 (34.5) | 25.33 ± 16.24 | 0.135 | 0.24 |
| Marital status | | | | |
| Married | 95 (54.6) | 27.29 ± 16.83 | | |
| Single | 79 (45.4) | 28.84 ± 17.26 | 0.553 | -0.09 |
| On duty during the earthquakes | | | | |
| Yes | 114 (65.5) | 27.34 ± 16.94 | | |
| No | 60 (34.5) | 29.23 ± 17.18 | 0.487 | -0.11 |
| On duty within the first three days following the earthquakes | | | | |
| Yes | 108 (62.1) | 29.19 ± 17.80 | | |
| No | 66 (37.9) | 26.03 ± 15.52 | 0.235 | 0.19 |
| Field duty during the first month following the earthquakes | | | | |
| Yes | 49 (28.2) | 32.63 ± 16.40 | | |
| No | 125 (71.8) | 26.18 ± 16.94 | 0.024 | 0.38 |
| Housing damage | | | | |
| Yes | 62 (35.6) | 32.87 ± 16.84 | | |
| No | 112 (64.4) | 25.29 ± 16.55 | 0.005 | 0.46 |
| Displacement from home for at least one week after earthquakes | | | | |
| Yes | 111 (63.8) | 30.78 ± 16.65 | | |
| No | 63 (36.2) | 23.08 ± 16.60 | 0.004 | 0.46 |
| Change of residence | | | | |
| Yes | 42 (24.1) | 35.67 ± 18.01 | | |
| No | 132 (75.9) | 25.55 ± 15.97 | <0.001 | 0.61 |
| Housing difficulties | | | | |
| Yes | 62 (35.6) | 36.47 ± 14.59 | | |
| No | 112 (64.4) | 23.30 ± 16.46 | <0.001 | 0.83 |
| Physical injury to a relative | | | | |
| Yes | 34 (19.5) | 34.44 ± 15.68 | | |
| No | 140 (80.5) | 26.43 ± 16.99 | 0.013 | 0.48 |
| Physical injury to the participant | | | | |
| Yes | 4 (2.3) | 39.25 ± 22.32 | | |
| No | 170 (97.7) | 27.73 ± 16.85 | 0.181 | 0.68 |

SD: Standard deviation. † The association between age and PCL-5 scores was assessed using Pearson correlation analysis. The independent-samples t-test was used to compare categorical groups.

| Table 4. Correlations among psychometric scale scores of the participants (n=174) | | | | | | |
|---|---|---|---|---|---|---|
| | **PCL-5** | **BDI** | **BAI** | **MSPSS** | **EPQR-A Neuroticism** | **EPQR-A Extraversion** |
| PCL-5 | — | | | | | |
| BDI | 0.527** | — | | | | |
| BAI | 0.688** | 0.718** | — | | | |
| MSPSS | -0.317** | -0.427** | -0.357** | — | | |
| EPQR-A Neuroticism | 0.503** | 0.625** | 0.572** | -0.364** | — | |
| EPQR-A Extraversion | -0.119 | -0.353** | -0.160* | 0.240** | -0.389** | — |
| EPQR-A Psychoticism | -0.105 | 0.003 | -0.077 | -0.129 | -0.140 | 0.177* |

PCL-5: Posttraumatic Stress Disorder Checklist for DSM-5; BDI: Beck Depression Inventory; BAI: Beck Anxiety Inventory; MSPSS: Multidimensional Scale of Perceived Social Support; EPQR-A: Eysenck Personality Questionnaire Revised–Abbreviated. Pearson correlation coefficients (r) are presented. *p<0.05; **p<0.001.

The results of the multiple linear regression analysis with the PCL-5 total score as the dependent variable are presented in Table 5. The regression model was statistically significant and explained 49.6% of the variance in PCL-5 total scores ($R^2$=0.496; adjusted $R^2$=0.484; F(4,169)=41.56; p<0.001). No multicollinearity was detected in the model (all VIF values <2.5). Among the variables included in the analysis, BAI scores (β=0.615; p<0.001) and perceived social support scores (β=−0.134; p=0.036) were independently associated with PCL-5 total scores. BDI scores (β=0.041; p=0.631) and the EPQR-A neuroticism subscale (β=0.016; p=0.841) did not make statistically significant contributions to the model.

**Table 5. Multiple linear regression analysis of variables associated with PCL-5 total scores**

| Variable | B | β | t | p | %95 GA | VIF |
|---|---|---|---|---|---|---|
| BAI | 0.796 | 0.615 | 7.662 | <0.001 | 0.591 – 1.001 | 2.161 |
| BDI | 0.067 | 0.041 | 0.481 | 0.631 | -0.209 – 0.343 | 2.466 |
| MSPSS | -0.147 | -0.134 | -2.112 | 0.036 | -0.284 – -0.010 | 1.346 |
| EPQR-A Neuroticism | 0.130 | 0.016 | 0.201 | 0.841 | -1.142 – 1.401 | 2.193 |
| Model: $R^2$=0.496; Adjusted $R^2$=0.484; F(4,169)=41.56; p<0.001 | | | | | | |

B: Unstandardized regression coefficient; β: Standardized regression coefficient; CI: Confidence interval; VIF: Variance inflation factor; BAI: Beck Anxiety Inventory; BDI: Beck Depression Inventory; MSPSS: Multidimensional Scale of Perceived Social Support; EPQR-A: Eysenck Personality Questionnaire Revised–Abbreviated

In the hierarchical multiple linear regression analysis conducted to evaluate the additional contribution of earthquake-related exposures to the model, the inclusion of field duty during the first month following the earthquakes and housing difficulties increased the explained variance from 49.6% to 55.3%. This 5.8% increase in explained variance was statistically significant ($\Delta R^2$=0.058; $\Delta F(2,167)$=10.76; p<0.001). In Model 2, anxiety symptoms (β=0.550; p<0.001), field duty during the first month following the earthquakes (β=−0.138; p=0.010), and housing difficulties (β=−0.177; p=0.0015) were independently associated with PCL-5 total scores. Detailed results of the hierarchical regression analysis are presented in Table 6.

**Table 6. Hierarchical multiple linear regression analysis of variables associated with posttraumatic stress symptom severity**

| Variable | B | SE | β | t | p | VIF |
|---|---|---|---|---|---|---|
| Model 1: Psychological and psychosocial variables | | | | | | |
| Perceived social support | -0.147 | 0.069 | -0.134 | -2.112 | 0.036 | 1.346 |
| Anxiety symptoms | 0.796 | 0.104 | 0.615 | 7.662 | <0.001 | 2.161 |
| Depressive symptoms | 0.067 | 0.140 | 0.041 | 0.481 | 0.631 | 2.466 |
| Neuroticism | 0.130 | 0.644 | 0.016 | 0.201 | 0.841 | 2.193 |
| Model 2: Psychological, psychosocial, and earthquake-related variables | | | | | | |
| Perceived social support | -0.119 | 0.066 | -0.108 | -1.792 | 0.075 | 1.365 |
| Anxiety symptoms | 0.711 | 0.101 | 0.550 | 7.066 | <0.001 | 2.261 |
| Depressive symptoms | 0.099 | 0.133 | 0.060 | 0.743 | 0.458 | 2.474 |
| Neuroticism | 0.309 | 0.612 | 0.039 | 0.505 | 0.614 | 2.207 |
| Field duty during the first month[1] | -5.212 | 2.012 | -0.138 | -2.591 | 0.010 | 1.065 |
| Housing difficulties[1] | -6.264 | 1.940 | -0.177 | -3.229 | 0.0015 | 1.124 |

Model 1 explained 49.6% of the variance in PCL-5 total scores ($R^2$ = 0.496; adjusted $R^2$ = 0.484; F(4,169) = 41.52; p < 0.001). In Model 2, which additionally included field duty during the first month after the earthquake and housing difficulties in the second block, the explained variance increased to 55.3% ($R^2$ = 0.553; adjusted $R^2$ = 0.537; F(6,167) = 34.47; p < 0.001). The inclusion of earthquake-related variables resulted in a significant additional 5.8% of explained variance ($\Delta R^2$ = 0.058; $\Delta F(2,167)$ = 10.76; p < 0.001).

Note: The dependent variable was the PCL-5 total score. Model 1 included perceived social support, anxiety symptoms, depressive symptoms, and neuroticism. Model 2 additionally included field duty during the first month after the earthquake as an indicator of occupational exposure and housing difficulties as an indicator of secondary post-disaster stressors. [1]Earthquake-related variables were coded as 1 = Yes and 2 = No; negative regression coefficients indicate higher PCL-5 scores among participants who experienced the corresponding exposure. B: unstandardized regression coefficient; SE: standard error; β: standardized regression coefficient; VIF: variance inflation factor; $\Delta R^2$: change in explained variance; ΔF: F-change statistic.

# Discussion

One of the important findings of this study is that anxiety symptoms were independently associated with posttraumatic stress symptom severity among healthcare workers approximately three years after the

earthquakes. Satilmis et al. reported strong associations between posttraumatic stress symptoms and symptoms of anxiety and depression among healthcare workers affected by the Kahramanmaraş earthquakes, while Gürü and Şahmelikoğlu Onur also identified anxiety levels as an important factor associated with posttraumatic stress symptoms (Satilmis et al. 2024, Gürü and Şahmelikoğlu Onur 2025). The positive correlation between posttraumatic stress symptoms and anxiety symptoms observed in our correlation analysis further suggests that this association persists approximately three years after the earthquakes. This relationship may be explained by heightened threat perception and hypervigilance following trauma, which may reinforce persistent anxiety and worry, while anxiety may, in turn, increase sensitivity to trauma-related stimuli and contribute to the persistence of posttraumatic stress symptoms. The strong association between anxiety symptoms and posttraumatic stress symptoms may also reflect the partial clinical overlap between these two symptom domains. In particular, heightened arousal, threat perception, and accompanying anxiety symptoms may make it difficult to regard posttraumatic stress symptoms and general anxiety levels as entirely distinct constructs. This symptomatic overlap may partly explain both the strong correlation observed in our study and the substantial contribution of anxiety symptoms to the regression model. Therefore, these findings should be interpreted in the context of the close clinical relationship between the two symptom domains rather than as evidence of an independent effect of anxiety symptoms on posttraumatic stress symptoms.

Another important finding of our study is that perceived social support was independently and inversely associated with posttraumatic stress symptom severity. Xi et al. reported findings supporting the protective role of perceived social support against posttraumatic stress symptoms following the Jiuzhaigou earthquake (Xi et al. 2020). A recent systematic review and meta-analysis examining the mental health consequences of the Kahramanmaraş earthquakes identified low social support as one of the most consistent risk factors for posttraumatic stress symptoms (Çınaroğlu et al. 2025). Similarly, a systematic review published in 2020 highlighted the protective role of social support across different disaster-affected populations (Alipour and Ahmadi 2020). The inverse association between perceived social support and posttraumatic stress symptoms observed in our study is consistent with these findings. The potential protective role of social support may extend beyond the provision of emotional support to include strengthening perceived self-efficacy, promoting adaptive coping strategies, and facilitating posttraumatic recovery (Xi et al. 2020, Wang et al. 2021). Calhoun et al. emphasized that posttraumatic recovery is shaped by the interaction between interpersonal support mechanisms and individual coping processes, highlighting the particular importance of the quality of perceived social support in the recovery process (Calhoun et al. 2022). Our findings suggest that systematically assessing perceived social support alongside psychiatric symptoms may be clinically important in mental health evaluations of healthcare workers, even several years after the earthquakes.

Personality traits may influence individuals' psychological responses to traumatic events and the severity of posttraumatic stress symptoms (Breslau and Schultz 2013, Brown et al. 2020). In our study, a significant positive correlation was observed between neuroticism and posttraumatic stress symptom severity. This finding is consistent with previous studies examining earthquakes and other traumatic experiences (Borja et al. 2009, Yin et al. 2019). Individuals with higher levels of neuroticism tend to be more prone to negative affect, experience negative emotions such as anxiety, worry, and guilt more intensely, perceive stressful events as more threatening, and exhibit greater emotional instability. These characteristics have been proposed as potential explanations for the observed association between neuroticism and posttraumatic stress symptoms (Yin et al. 2019, Brown et al. 2020). Furthermore, lower psychological resilience and the use of less effective coping strategies in response to stress may also be associated with greater posttraumatic stress symptom severity in these individuals. However, neuroticism was not independently associated with posttraumatic stress symptom severity in the multiple regression analysis. The loss of statistical significance of the association observed in the correlation analysis after adjustment for other variables may be attributable to the variance shared between neuroticism and other psychological variables. In particular, the strong association between anxiety symptoms and PCL-5 scores may partly explain why the independent contribution of neuroticism was not statistically significant in the regression model. Thus, although neuroticism appears to be associated with posttraumatic stress symptoms, this association may not be independent of co-occurring psychological symptoms. Nevertheless, considering

personality traits in the comprehensive assessment of healthcare workers exposed to trauma may be clinically beneficial.

Depressive symptoms and posttraumatic stress symptoms are known to frequently co-occur and to be closely associated among individuals exposed to trauma (Wang et al. 2023, Çınaroğlu et al. 2025). In our study, a significant positive correlation was also observed between depressive symptom severity and posttraumatic stress symptom severity. This finding is consistent with previous reports in the literature (Gökkaya et al. 2025, Kiymis and Fakioglu 2025). The close association between posttraumatic stress symptoms and depressive symptoms may be related not only to their frequent co-occurrence but also to shared clinical features, such as negative mood, sleep disturbances, cognitive difficulties, and social withdrawal. Negative thoughts, avoidance behaviors, and impaired daily functioning following traumatic experiences may also contribute to the co-occurrence of these two symptom clusters (Raabe and Spengler 2013, Wang et al. 2023). Although depressive symptoms were associated with posttraumatic stress symptoms, their lack of an independent association in the regression model may be explained by the stronger association between anxiety symptoms and posttraumatic stress symptoms, as well as the shared clinical features of posttraumatic stress and anxiety, including heightened threat perception, hypervigilance, and increased arousal.

In our study, being on duty during the earthquakes or within the first three days was not associated with posttraumatic stress symptom severity, whereas symptom severity was higher among participants who performed field duty during the first month following the earthquakes. The DSM-5 identifies repeated or extreme exposure to aversive details of traumatic events during occupational duties as a form of traumatic exposure (American Psychiatric Association 2022). Heterogeneous and transient acute stress reactions, including shock, emotional numbness, dissociative symptoms, and heightened arousal, may occur immediately after a disaster; therefore, the association between early exposure and long-term posttraumatic stress symptoms may not always be evident. In contrast, occupational exposure extending over several weeks may increase the frequency of traumatic experiences and be associated with more persistent psychological consequences (Bryant et al. 2011). Being on duty during the earthquakes or in the first few days does not provide information about the nature or recurrence of traumatic experiences. Field duty during the first month may better reflect prolonged occupational exposure to traumatic events. The increasing recognition of disaster-related losses and difficulties in the days following the earthquakes, together with continued occupational exposure to traumatic experiences, may also have contributed to higher posttraumatic stress symptom severity among those who worked during this period. Furthermore, the associations between posttraumatic stress symptom severity and secondary stressors affecting living conditions, such as housing damage, displacement from home for at least one week, change of residence, and housing difficulties, suggest that disruptions to safe living conditions and persistent difficulties in daily life following a disaster may contribute to the persistence of trauma-related stress (Lock et al. 2012). Higher symptom severity among participants whose relatives sustained physical injuries is consistent with previous findings (Tang et al. 2017). No significant difference was observed according to whether participants themselves sustained physical injuries; however, this finding should be interpreted cautiously, as only four participants reported physical injuries.

No significant association was found between age and posttraumatic stress symptom severity. Similarly, Koca et al. (2025), who evaluated healthcare workers affected by the Kahramanmaraş earthquakes, found no significant association between age and traumatic stress symptoms. However, findings regarding the role of age in the literature on post-earthquake PTSD remain inconsistent (Tang et al. 2017, Sirotich and Camisasca 2024). Likewise, although mean PCL-5 scores were higher among women, the absence of a statistically significant difference between sexes contrasts with previous studies identifying female sex as a risk factor (Satilmis et al. 2024, Çınaroğlu et al. 2025). This discrepancy may be related to the composition of our sample, which consisted of healthcare workers with similar occupational exposure, and the smaller number of male participants.

A history of psychiatric consultation was reported by 49.4% of the participants, with 64.0% of these consultations occurring after the earthquakes. Among those who sought psychiatric care after the earthquakes, 65.5% attributed their consultations to trauma-related symptoms. This distribution

highlights the importance of considering healthcare workers' needs for mental health assessment and support during long-term follow-up after disasters. Previous studies have reported an increased need for psychiatric support among healthcare workers following disasters, with posttraumatic stress, anxiety, and depressive symptoms being among the primary reasons for seeking mental health services (Satilmis et al. 2024, Uddin et al. 2024). Therefore, regular long-term mental health assessments of healthcare workers remain important.

One of the contributions of our study to the existing literature is its assessment of psychological symptoms among healthcare workers affected by the Kahramanmaraş earthquakes approximately three years after the disaster, rather than during the early post-disaster period. Furthermore, examining posttraumatic stress symptoms in relation to perceived social support, personality traits, anxiety, and depressive symptoms, while also considering earthquake-related occupational and personal exposures, allows for a more comprehensive investigation of factors associated with psychological symptoms in the long-term aftermath of the disaster. Healthcare workers not only continued providing healthcare services during and after the disaster but were also directly affected by its consequences, including housing damage, housing difficulties, displacement, and injuries to their relatives. This dual experience underscores the importance of evaluating this population in terms of both occupational and personal disaster-related experiences.

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design precludes the assessment of causal relationships between posttraumatic stress symptoms and associated variables. The single-center design and the inclusion of healthcare workers employed at the same hospital limit the generalizability of the findings. Working at the same institution may have resulted in relatively similar working conditions and institutional experiences, while being located in the same region may have limited the geographical variability of earthquake exposure. The use of convenience sampling based on voluntary participation represents another limitation due to the potential for selection bias. Because only healthcare workers who remained employed at the same hospital during the study period were included, those who left the institution or changed their workplace after the earthquakes were not represented in the sample. As the data collection period coincided with the third anniversary of the earthquakes, a potential anniversary reaction may have temporarily influenced psychological symptom severity; the lack of a specific assessment of this effect constitutes an additional limitation. Furthermore, all assessments were conducted at a single time point using self-report measures, which may have introduced response bias and common method bias, potentially affecting the strength of the observed associations. Posttraumatic stress symptoms were assessed using the PCL-5, and a clinical diagnosis was not confirmed through a structured diagnostic interview. In addition, psychiatric diagnoses, psychiatric treatment histories, and current treatment status were not assessed among participants with a history of psychiatric consultation, preventing consideration of these factors that may have influenced psychological symptom severity. Earthquake-related exposures were assessed using binary items addressing the presence or absence of specific experiences rather than standardized measures evaluating exposure severity and duration. Consequently, substantial heterogeneity may exist within the same response category. For example, a "Yes" response regarding physical injury to a relative does not reflect the severity of the injury, while a "Yes" response regarding housing damage does not indicate the extent of the damage. For this reason, earthquake-related exposure variables were not included in the primary model, and the corresponding analysis was presented in a supplementary table. Future studies using more detailed and standardized assessments of the type, severity, and duration of earthquake exposure may allow for a more reliable examination of the independent associations between these variables and posttraumatic stress symptoms. Additionally, the absence of adjustments for multiple comparisons may have increased the risk of Type I error. Finally, because the study was conducted approximately three years after the earthquakes, participants' retrospective reports of their experiences during the disaster may have been subject to recall bias.

## Conclusion

Posttraumatic stress symptoms among healthcare workers assessed approximately three years after the Kahramanmaraş earthquakes were associated with anxiety symptom severity, perceived social support,

and secondary stressors arising in the aftermath of the disaster. Furthermore, the independent associations of anxiety symptoms and perceived social support with posttraumatic stress symptom severity highlight the importance of systematically assessing these domains in mental health evaluations, even several years after the earthquakes. Our findings suggest that mental health services for healthcare workers affected by disasters should not be limited to the acute phase but should incorporate long-term follow-up, with continued interventions aimed particularly at strengthening social support mechanisms. Future multicenter and longitudinal studies examining the course of psychological symptoms among healthcare workers over time and the role of social support in this process, together with more comprehensive assessments incorporating clinical characteristics and treatment processes, may contribute to a better understanding of the long-term psychological consequences of disasters.

## References


Alipour F, Ahmadi S (2020) Social support and posttraumatic stress disorder (PTSD) in earthquake survivors: a systematic review. Soc Work Ment Health, 18:501-514.

APA (2022) Diagnostic and Statistical Manual of Mental Disorders, 5th ed, text rev. Washington, DC, American Psychiatric Association.

Beck AT, Epstein N, Brown G, Steer RA (1988) An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol, 56:893-897.

Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J (1961) An inventory for measuring depression. Arch Gen Psychiatry, 4:561-571.

Borja SE, Callahan JL, Rambo PL (2009) Understanding negative outcomes following traumatic exposure: the roles of neuroticism and social support. Psychol Trauma, 1:118-129.

Boysan M, Guzel Ozdemir P, Ozdemir O, Selvi Y, Yilmaz E, Kaya N (2017) Psychometric properties of the Turkish version of the PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders (PCL-5). Psychiatry Clin Psychopharmacol, 27:300-310.

Breslau N, Schultz L (2013) Neuroticism and post-traumatic stress disorder: a prospective investigation. Psychol Med, 43:1697-1702.

Brooks SK, Dunn R, Amlôt R, Rubin GJ, Greenberg N (2018) A systematic, thematic review of social and occupational factors associated with psychological outcomes in healthcare employees during an infectious disease outbreak. J Occup Environ Med, 60:248-257.

Brown N, Wojtalik JA, Turkel M, Vuper T, Strasshofer D, Sheline YI et al. (2020) Neuroticism and its associated brain activation in women with PTSD. J Interpers Violence, 35:341-363.

Bryant RA, Friedman MJ, Spiegel D, Ursano R, Strain J (2011) A review of acute stress disorder in DSM-5. Depress Anxiety, 28:802-817.

Calhoun CD, Stone KJ, Cobb AR, Patterson MW, Danielson CK, Bendezú JJ (2022) The role of social support in coping with psychological trauma: an integrated biopsychosocial model for posttraumatic stress recovery. Psychiatr Q, 93:949-970.

Çınaroğlu M, Yılmazer E, Noyan Ahlatcıoğlu E, Varol Ülker S, Hızlı Sayar G (2025) Psychological impact of the 2023 Kahramanmaraş earthquakes: a systematic review and meta-analysis of PTSD, depression, and anxiety among Turkish adults. Front Public Health, 13:1664212.

Eker D, Arkar H (1995) Perceived social support: psychometric properties of the MSPSS in normal and pathological groups in a developing country. Soc Psychiatry Psychiatr Epidemiol, 30:121-126.

Francis LJ, Brown LB, Philipchalk R (1992) The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): its use among students in England, Canada, the USA and Australia. Pers Individ Dif, 13:443-449.

Gökkaya E, Kuday AD, Çelebi I (2025) Mental health impact of the 2023 Kahramanmaraş earthquakes: prevalence of PTSD, depression, anxiety, and stress among survivors. J Health Psychol, 30:3284-3296.

Gürü M, Şahmelikoğlu Onur Ö (2025) The psychological toll on healthcare workers following Türkiye's earthquake disasters. Online Turkish Journal of Health Sciences, 10:52-59.

Hisli N (1989) Beck Depresyon Envanterinin üniversite öğrencileri için geçerliği, güvenirliği. Türk Psikoloji Dergisi, 7(23):3-13.

Karancı AN, Dirik G, Yorulmaz O (2007) Eysenck Kişilik Anketi-Gözden Geçirilmiş Kısaltılmış Formu'nun (EKA-GGK) Türkiye'de geçerlik ve güvenilirlik çalışması. Turk Psikiyatri Derg, 18:254-261.

Kiymis I, Fakioglu M (2025) The psychological consequences of 6 February 2023 Kahramanmaraş earthquakes. Nat Hazards, 121:2919-2940.

Koca M, Deniz S, İnceoğlu F (2025) The relationship of the psychological resilience and stress coping level of health personnel working in hospitals after Kahramanmaraş-based earthquakes with traumatic stress. Healthcare (Basel), 13:301.

Lock S, Rubin GJ, Murray V, Rogers MB, Amlôt R, Williams R (2012) Secondary stressors and extreme events and disasters: a systematic review of primary research from 2010-2011. PLoS Curr, 4:e4f74bfe9fb5aa.

Polat H, Uğur K, Sun T (2025) Assessing psychological resilience and stress symptoms in health care workers following the 2023 Kahramanmaraş earthquake. Disaster Med Public Health Prep, 19:e243.

Raabe FJ, Spengler D (2013) Epigenetic risk factors in PTSD and depression. Front Psychiatry, 4:80.

Satilmis D, Yildiz E, Cevik E (2024) Posttraumatic stress disorder in health-care workers after two major earthquakes centered in Kahramanmaras, Turkey. Turk J Emerg Med, 24:27-32.

Sehlikoğlu Ş, Yılmaz Karaman IG, Yastıbaş Kaçar C, Canakci ME (2023) Earthquake and mental health of healthcare workers: a systematic review. Klinik Psikiyatri Dergisi, 26:309-318.

Sirotich AC, Camisasca E (2024) PTSD risk factors in earthquake survivors and their families: a systematic review. Eur J Psychotraumatol, 15:2365477.

Tang B, Deng Q, Glik D, Dong J, Zhang L (2017) A meta-analysis of risk factors for post-traumatic stress disorder (PTSD) in adults and children after earthquakes. Int J Environ Res Public Health, 14:1537.

Uddin H, Hasan MK, Cuartas-Alvarez T, Castro-Delgado R (2024) Effects of mass casualty incidents on anxiety, depression, and post-traumatic stress disorder among doctors and nurses: a systematic review. Public Health, 234:132-142.

Ulusoy M, Sahin NH, Erkmen H (1998) Turkish version of the Beck Anxiety Inventory: psychometric properties. J Cogn Psychother, 12:163-172.

Wang SK, Feng M, Fang Y, Lv L, Sun GL, Yang SL et al. (2023) Psychological trauma, posttraumatic stress disorder and trauma-related depression: a mini-review. World J Psychiatry, 13:331-339.

Wang Y, Chung MC, Wang N, Yu X, Kenardy J (2021) Social support and posttraumatic stress disorder: a meta-analysis of longitudinal studies. Clin Psychol Rev, 85:101998.

Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP (2013) The PTSD Checklist for DSM-5 (PCL-5). National Center for PTSD. https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp (Accessed 21.09.2026)

Xi Y, Yu H, Yao Y, Peng K, Wang Y, Chen R (2020) Post-traumatic stress disorder and the role of resilience, social support, anxiety and depression after the Jiuzhaigou earthquake: a structural equation model. Asian J Psychiatr, 49:101958.

Yin Q, Wu L, Yu X, Liu W (2019) Neuroticism predicts a long-term PTSD after earthquake trauma: the moderating effects of personality. Front Psychiatry, 10:657.

Zimet GD, Dahlem NW, Zimet SG, Farley GK (1988) The Multidimensional Scale of Perceived Social Support. J Pers Assess, 52:30-41.

**Authors Contributions:** The author(s) have declared that they have made a significant scientific contribution to the study and have assisted in the preparation or revision of the manuscript

**Peer-review:** Externally peer-reviewed.

**Ethical Approval:** Ethical approval for this study was obtained from the Çukurova University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee pursuant to date 09.01.2026 and number 162/50. Participants provided informed consent prior to participating in the study.

**Conflict of Interest:** One of the authors of this article, Lut Tamam is a member of the Editorial Board of this journal but he was not involved in the peer-review or editorial decision-making process for this manuscript. The peer-review process was managed independently by another associate editor to ensure objectivity.

**Financial Disclosure:** No financial support was declared for this study.