



The evaluation of the mediation role of life engagement in resilience and trauma levels of individuals experiencing the earthquake in Kahramanmaraş, Türkiye

Esma Özmay¹ · Beyza Erkoç² · Sami Kalaycı³ · Sevda Uzun⁴ · Sayra Lotfi⁵

Received: 11 November 2024 / Accepted: 9 May 2025
© The Author(s) 2025, modified publication 2026

Abstract

The aim of this study is to evaluate the mediation role of life engagement in resilience and trauma levels of individuals experiencing the earthquake on February 6, 2023 in the city of Kahramanmaraş in Türkiye. The sample of this descriptive and correlational study included 1406 individuals. The questionnaire data was obtained through Google Forms and other data collection tools were Socio-demographic Information Form, Trauma Level Determination Scale, Short Resilience Scale and Life Engagement Scale. To analyse the data, frequency (percentage, arithmetic mean) and correlation analyses were used. Depending on the findings of the study, the resilience and trauma levels were negatively correlated, whereas the resilience and life engagement levels were positively correlated. Furthermore, the life engagement levels were negatively correlated with trauma levels while they were positively correlated with resilience. It was found that the life engagement played an mediation role in resilience and trauma levels of individuals experiencing the earthquake in Kahramanmaraş, Türkiye. In this study, we found that the life engagement has an important role in resilience and trauma levels of individuals. We are of the opinion that the findings of this study might help researchers and conductors to plan and perform effective strategies for post-impact phase of an earthquake.

Keywords Earthquake · Trauma · Resilience · Life engagement

1 Introduction

Türkiye has experienced many different natural disasters for centuries due to its geographical location and conditions. Finally, Türkiye experienced two great earthquakes of magnitude 7.7 and 7.6 struck Pazarcık (Kahramanmaraş) and Elbistan (Kahramanmaraş) at 04:17 and 13:24 on February 6, 2023. The earthquake with 7.7 Mw occurred in 8.6 km and the one with 7.6 Mw occurred in 7 km beneath the surface (AFAD 2023). As a result of these earth-

Abstract of the article was presented at the 8th INTERNATIONAL 12th NATIONAL PSYCHIATRIC NURSING CONGRESS on April 16–19, 2025.

Extended author information available on the last page of the article

quakes, along with Kahramanmaraş, other neighboring cities were also affected and thousands of people lost their lives and properties. Following the earthquakes, the government announced a large area of disaster including the cities of Kahramanmaraş, Hatay, Gaziantep, Malatya, Diyarbakır, Kilis, Şanlıurfa, Adıyaman, Osmaniye, Adana, Elazığ, Bingöl, Kayseri, Mardin, Tunceli, Niğde and Batman. According to official figures, 50,783 people lost their lives, 115,353 people were injured and 37,984 buildings collapsed. The figures show that these earthquakes were much more destructive than the earthquakes in Erzincan (7.9 Mw, 1939) and Kocaeli (7.6 Mw, 1999) (AFAD 2023).

The 1939 and Erzincan 2011 Van earthquakes in Turkey deeply affected many people, leaving them injured, disabled and psychologically intensely affected. In addition, the earthquakes shattered families and communities, leaving hundreds of children orphaned or unable to reunite with their parents and families (Balikuddembe et al. 2024).

The psychological resilience is defined as the observation of positive and positive results in adaptation and development despite the serious negativity and great dangers that occur in the life of the individual (Masten 2001). Life engagement is a concept that covers the meaning of an individual's life, the reasons for maintaining life and life goals (Kansu and Sayar 2018). Trauma is the existence of an event with traumatic effects, the reactions of individuals to this event, and the evaluation of these reactions in the context of the results (Canbulat and Dursun 2024).

The psychological resilience is defined as the observation of positive and positive results in adaptation and development despite the serious negativity and great dangers that occur in the life of the individual (Masten 2001). Life engagement is a concept that covers the meaning of an individual's life, the reasons for maintaining life and life goals (Kansu and Sayar 2018). Trauma is the existence of an event with traumatic effects, the reactions of individuals to this event, and the evaluation of these reactions in the context of the results (Canbulat and Dursun 2024).

Earthquakes deeply and adversely affect psychological wellbeing of individuals as they happen unexpectedly and cause loss of life and property (KayeTzadok and Davidson Arad, 2017). Furthermore, earthquakes dramatically harm the feeling of secure, one of the most fundamental needs of individuals, and make people feel alert all the time, thereby changing the life of experiencers. Though earthquakes do not cause trauma on all people, these and similar disasters might develop post-traumatic stress disorder (PSD). There are many factors affecting PSD like the pre-earthquake resilience levels, getting trapped under debris, losing a family member/relative, losing property and some other individual traits (Sönmez 2022). Besides individuals that experience an earthquake, rescue teams, volunteers and even audiences might also be adversely affected and have secondary trauma symptoms (Schultz et al., 2012).

In general, resilience is described as a dynamic period including re-engagement or re-adaptation of an individual following a tragic life problem (Masten 2014). Resilience is the skill of sustaining life despite challenges and stressful events. In other words, it can be described as persisting in solving out difficult problems that individuals encounter in life and empowering personal resistance against other pressures and traumas in the future (Sisto et al. 2019). This process is similar to relation between microorganisms and antibiotics. They gain resistance against antibiotics in time and somehow they adapt to survive under similar doses of antibiotics (Hernández et al. 2007).

Resilience enables individuals to activate themselves to restore their mental energy following a challenge, and thus, it enables them to build up a balanced mental wellbeing again. Many various factors might affect resilience like sudden trauma, the effect(s) of trauma, the

age and the existence of social support mechanisms etc. In another prospect, experiencing an earthquake and secondary life events after an earthquake are a risk factor for resilience (Liu et al. 2013), however, there might be a positive correlation between traumatic experience and resilience. Scali et al. reported that traumas might cause an “injection effect” meaning traumatic events might develop personal resilience and enable individuals to be more powerful against challenges (Scali et al., 2012). Resilience is the skill of easy adaptation to stressful events and of getting rid of adverse emotional experiences, thereby affecting the view of life and life engagement of an individual (Keener et al. 2021). In his study conducted before February 6, 2023, Çelik stated that he found a negative correlation between resilience and trauma level after an earthquake (behavioural problems, emotive limitedness, cognitive structure) (Çelik 2023). In their study carried out after the earthquake in the city of Van, Sakarya and Güneş reported that resilience plays a critical role in the development of PSD (Sakarya and Güneş 2013). The 6 February earthquakes, which made history with the size of the impact area and the severity of destruction, affected the lives of many children, young people or adults. It is thought that trying to evaluate the mediating role of life commitment in the traumatisation and psychological resilience of individuals who directly experienced earthquakes can direct the necessary prevention and intervention studies. In our study, we aim to find out the mediation role of life engagement in resilience and trauma levels of individuals experiencing the earthquake on February 6, 2023.

2 Methods

2.1 The model of the study

This study mainly aims to find out trauma, resilience and life engagement levels of individuals experiencing the earthquakes that struck Pazarcık, Kahramanmaraş on February 6, 2023 and deeply affected neighbouring cities. Depending on the evaluation of study findings, the study focuses on direct and indirect effects of resilience, life engagement and trauma and aims to propose some offers. Therefore, Process Macro was used as an mediation model (Hayes 2018). All analyses were performed with 5000 resampling and 90% confidence interval. The model of the study is given in Fig. 1.

According to this model, the independent variable of the study is resilience, mediation variable is life engagement and dependent variable is trauma scores. The psychological resilience is defined as the observation of positive and positive results in adaptation and development despite the serious negativity and great dangers that occur in the life of the

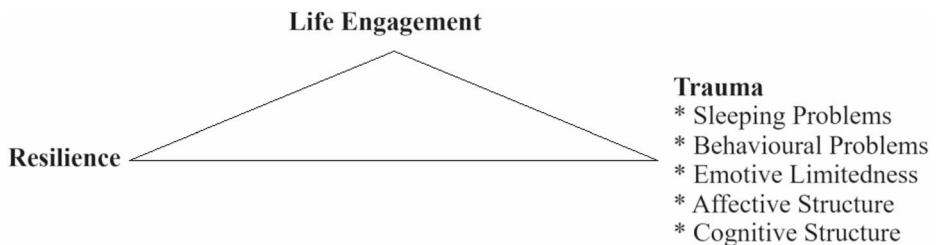


Fig. 1 Study Model

individual (Masten 2001). Life engagement is a concept that covers the meaning of an individual's life, the reasons for maintaining life and life goals (Kansu and Sayar 2018). Trauma is the existence of an event with traumatic effects, the reactions of individuals to this event, and the evaluation of these reactions in the context of the results (Canbulat and Dursun 2024).

2.2 The population and the sampling

The population of the study is Turkish citizens. The sampling included individuals over 18, living in Türkiye and with no limitations. The study was based on voluntariness and the snowball sampling was used including 1406 individuals. After major disasters such as earthquakes, not only those directly affected, but also those who observe the event or provide assistance may experience secondary traumatic stress (STS). Secondary traumatic stress is defined as the emotional, psychological and physical reactions that develop in people exposed to the trauma experienced by others. In particular, people who constantly follow the news, aid workers, emergency responders and other professionals working in disaster areas are at risk because they are constantly witnessing traumatic events. Such stress can manifest itself in symptoms such as anxiety, depression and post-traumatic stress disorder (PTSD). Therefore, it is believed that including both people who felt the earthquake and those who did not will yield more transparent results. The demographic characteristics of the study participants are shown in Table 1.

Table 1 The demographic characteristics of the participants

		f	%
Gender	Male	478	34,0
	Female	928	66,0
Age	18–25 years	871	61,9
	26–35 years	262	18,6
	36–45 years	159	11,3
	46 and over	114	8,1
Marital Status	Married	426	30,3
	Single	980	69,7
Education	High school or lower degree	518	36,8
	Associate degree	247	17,6
	University degree	569	40,5
	Postgraduate degree	72	5,1
Employment	Employed	498	35,4
	Unemployed	908	64,6
Feeling the earthquake	Yes	664	47,2
	No	742	52,8
Experiencing the earthquake (06/02/23)	Experienced the earthquake in one of epicenters	213	15,1
	Was in another city, but felt the quakes	505	35,9
	Didn't experience/feel the earthquake	688	48,9
Losing a family member/relative	Yes	309	22,0
	No	1097	78,0

2.3 Data collection tools

The data collection of the study includes 4 groups: Socio-demographic Information Form, Trauma Level Determination Scale, Short Resilience Scale and Life Engagement Scale.

2.4 Socio-demographic information form

The Socio-Demographic Information Form consisted of questions prepared by the researchers in line with the literature, including socio-demographic information about the age, gender, marital status, education level, employment status, feeling the earthquake, experiencing the earthquake and whether there was a close loss in the earthquake.

2.5 Trauma level determination scale

The Scale for Determining the Level of Post-Earthquake Trauma was developed by Tanhan and Kayri (2013) and the Cronbach alpha internal reliability coefficient is 0.87. Cronbach alpha confidence; It expresses reliability in terms of internal consistency. High internal consistency means that the items act together to measure a common construct (Field 2009). The scale is a five-point Likert-type scale that includes answers such as ‘Not at all suitable for me’, ‘Somewhat suitable for me’, ‘Moderately suitable for me’, ‘Very suitable for me’, ‘Completely suitable for me’. There are no negative items in the scale. There are no reverse items in the scale. Scores between 20 and 100 can be obtained from the scale. The higher the score obtained from the scale, the higher the level of being affected by the earthquake. In addition, the scale consists of five sub-dimensions: ‘Sleep Problems’ (1, 2, 3), ‘Behavioural Problems’ (4, 7, 9, 10), ‘Cognitive Structure’ (5, 6, 13, 17), ‘Affective Structure’ (11, 14, 15, 16), and ‘Excitement Limitations’ (8, 12, 18, 19, 20). A score in the range of $52,385 \pm 5,051$ corresponds to the value indicating that the individuals are traumatised. A value below or above this value indicates low or high level in showing post-earthquake traumatic symptoms.

2.6 Short resilience scale

The Brief Psychological Resilience Scale was developed by Smith et al. (2008) in order to measure the psychological resilience levels of individuals, and its validity and reliability adaptation to Turkish was conducted by Doğan (2015). The scale is a 6-item self-report style scale with a 5-point Likert scale ranging from 1 ‘not at all appropriate’ to 5 ‘completely appropriate’. Items 2,4,6 of the scale are reverse coded. High scores obtained after the translation of the reverse coded items indicate high psychological resilience. Cronbach alpha internal consistency coefficient of the scale is 0.83.

2.7 Life engagement scale

Life Commitment Scale is a scale developed by Scheier et al. (2006) to assess the life goals of individuals. The validity and reliability adaptation of the scale into Turkish was carried out by Uğur and Akın (2015). The scale is a unidimensional measurement tool with 6 items. The scale is a five-point Likert-type measurement tool with 1 being ‘Strongly disagree’ and

5 being ‘Strongly agree’. Items 1,3,5 in the scale are coded in reverse. The higher the score obtained from the scale, the higher the life commitment of the individuals. Cronbach Alpha internal consistency reliability coefficients of the scale are between 0.72 and 0.87 and test-retest reliability coefficients are between 0.61 and 0.76.

2.8 The collection of the data

Following the preparation of test questions and ethics committee approval, an online form was generated by using Google Forms. All participants were informed to fill in the questionnaire. An informed consent form was prepared and appeared before the questionnaire started and the participants were asked to tick “I agree” or “I disagree”. Those willing to complete agreed and total time for the questionnaire was 10 min. The data collection began on August 15, 2023 and continued for the next 3 months. When the number of online questionnaire participation was reached, the data was analysed by IBM SPSS 23.0 software with Process v macro 4.0 add-in.

2.9 The analysis of the data

Before analysing the data, descriptive statistics of the variables were examined (Table 2). The skewness coefficients of the variables were found between -0.39 and 0.73 , and the kurtosis coefficients were found between -0.97 and 0.55 . Since these values are between -1 and $+1$, the variables are normally distributed (Hair et al. 2014).

At this stage, firstly, frequency analyses of the participants based on socio-demographic questions and correlation analyses were conducted to determine the relationship between the scales. In addition, mediation analyses were conducted in order to determine the direction of the relationship between the dependent variable and the independent variable and to determine the variables that are predicted to change its effect. Mediation can be expressed as the variable that explains the relationship between the dependent variable and the independent variable or the variable that enables the relationship between the dependent and the independent variable to emerge. Mediation analyses enable the examination of the role of third variables that may be related to both the dependent and independent variables in order to examine the relationship between the dependent and independent variable in more detail.

In addition to the mediation model, psychological resilience, life commitment and trauma effect scores of the participants were compared according to socio-demographic characteristics. In this context, independent samples t-test was used to compare life commitment, trauma and psychological resilience scores according to gender, marital status, employment status, feeling the earthquake and losing a relative in the earthquake, and one-

Table 2 Descriptive statistics of variables

	<i>n</i>	Mean	SS	Distortion	Kurtosis
Sleep Problems	1406	7,84	3,49	0,36	-0,79
Behavioural Problems	1406	8,79	4,04	0,73	-0,15
Excitement Limitation	1406	13,11	5,84	0,40	-0,89
Affective	1406	11,02	3,80	0,17	-0,46
Cognitive Structure	1406	13,03	4,63	-0,11	-0,97
Total Trauma	1406	53,79	18,27	0,28	-0,56
Psychological Resilience	1406	17,85	4,75	-0,04	0,55
Life Commitment	1406	22,69	4,74	-0,39	-0,19

way analysis of variance (one-way anova) was used to compare according to age, education level and experiencing an earthquake. One-way anova is the type of analysis performed when the independent variable is nominal (grouped) and the dependent variable is continuous (scale) (Field 2009). In this study, this analysis was used to compare the dependent variables according to age, education and earthquake experience.

2.10 Findings

2.10.1 The evaluation of the correlations between variables

Table 3 illustrates the pearson correlation analysis results. From the findings, we found negatively significant correlation between resilience and sleeping problems ($r=-0,23, p<0,01$), behavioural problems ($r=-0,29, p<0,01$), emotive limitedness ($r=-0,39, p<0,01$), affective structure ($r=-0,27, p<0,01$), cognitive structure ($r=-0,35, p<0,01$) and total trauma levels ($r=-0,38, p<0,01$).

We also found that life engagement and sleeping problems ($r=-0,09, p<0,01$), behavioural problems ($r=-0,18, p<0,01$), emotive limitedness ($r=-0,31, p<0,01$) and total trauma level ($r=-0,17, p<0,01$) scores were negatively and significantly correlated.

We observed a positively significant correlation between resilience and life engagement ($r=0,31, p<0,01$).

Table 4 shows direct effects resulting from the study model. According to the findings, whereas resilience positively affects life engagement ($B=0,31, p<0,001$), it negatively affects sleeping problems ($B=-0,16, p<0,001$), behavioural problems ($B=-0,22, p<0,001$), emotive limitedness ($B=-0,39, p<0,001$), affective structure ($B=-0,24, p<0,001$), cognitive structure ($B=-0,37, p<0,001$) and total trauma scores ($B=-1,38, p<0,001$).

Life engagement negatively affects behavioural problems ($B=-0,08, p<0,001$), emotive limitedness ($B=-0,26, p<0,001$) and total trauma score ($B=-0,22, p<0,001$) whereas it positively affects affective structure ($B=0,07, p<0,001$) and cognitive structure ($B=0,08, p<0,001$).

According to these scores, with the mediation role of life engagement, the direct effects of resilience on behavioural problems (Point estimate=-0,03, %90 GA [-0,050 – -0,013]), emotive limitedness (Point estimate=-0,08, %90GA[-0,107 – -0,059]), affective structure (Point estimate=0,021, %90GA[0,008–0,035]), cognitive structure (Point estimate=0,024, %90GA[0,007–0,041]) and total trauma scores (Point estimate=-0,068, %90GA[-0,134 – -0,005]) were statistically significant.

Table 3 Correlations between variables

	1	2	3	4	5	6	7	8
1 Sleeping Problems	1							
2 Behavioural Problems	,69**	1						
3 Emotive Limitedness	,56**	,66**	1					
4 Affective	,56**	,59**	,62**	1				
5 Cognitive	,58**	,58**	,67**	,70**	1			
6 Total Trauma	,79**	,84**	,87**	,82**	,85**	1		
7 Resilience	-,23**	-,29**	-,39**	-,27**	-,35**	-,38**	1	
8 Life Engagement	-,09**	-,18**	-,31**	-,01	-,04	-,17**	,31**	1

** $p<0,01$

Table 4 Direct effects resulting from the study model

			B	S.H.	t	p
Model 1 ($F=38,810, p<0,001, R^2=0,05$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Sleeping Problems	-0,16	0,02	-8,097	0,000
Life Engagement	>>>	Sleeping Problems	-0,02	0,02	-0,776	0,438
Model 2 ($F=69,498, p<0,001, R^2=0,09$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Behavioural Problems	-0,22	0,02	-9,527	0,000
Life Engagement	>>>	Behavioural Problems	-0,08	0,02	-3,631	0,000
Model 3 ($F=166,261, p<0,001, R^2=0,19$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Emotive Limitedness	-0,39	0,03	-12,685	0,000
Life Engagement	>>>	Emotive Limitedness	-0,26	0,03	-8,497	0,000
Model 4 ($F=59,782, p<0,001, R^2=0,08$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Affective Structure	-0,24	0,02	-10,932	0,000
Life Engagement	>>>	Affective Structure	0,07	0,02	3,161	0,000
Model 5 ($F=104,534, p<0,001, R^2=0,13$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Cognitive Structure	-0,37	0,03	-14,372	0,000
Life Engagement	>>>	Cognitive Structure	0,08	0,03	2,968	0,000
Model 6 ($F=117,981, p<0,001, R^2=0,14$)						
Resilience	>>>	Life Engagement	0,31	0,03	12,285	0,000
Resilience	>>>	Total Trauma	-1,38	0,10	-13,770	0,000
Life Engagement	>>>	Total Trauma	-0,22	0,10	-2,180	0,000

3 Discussion

The earthquake happened on February 6, 2023 in Kahramanmaraş, Türkiye deeply affected our country and left adverse effects on individuals. This study focuses on the mediation role of life engagement in resilience and trauma levels of individuals experiencing the earthquake.

From the study findings, it was found that resilience and trauma level after and earthquake are negatively and significantly correlated. These findings were in accordance with literature. In his study, Çelik (2023) found a negative correlation between resilience and trauma levels (behavioural problems, emotive limitedness, cognitive structure) (Çelik 2023). In their study on the individuals experiencing the earthquake in 2020 in Elazığ, Türkiye, Taşçı and Özsoy (2021) studied early phase psychological effects of an earthquake trauma and possible risk factors and they observed that the pre-traumatic dissociation scale scores and post-traumatic control list scale scores of the group that experienced the earthquake was significantly higher than the scores of the individuals who did not experience an earthquake (Taşçı and Özsoy 2021). These findings are consistent with the literature and emphasise the importance of psychological resilience.

Sönmez (2022) conducted a study on psychological effects of an earthquake, psychological support and dealing with fear and found out that individuals experiencing an earthquake might develop anxiety, depression, dissociative, sexual and sleeping problems (Sönmez

2022). Kurt and Gülbahçe (2019) studying PSD of the students experiencing the earthquake in Van, Türkiye stated that traumatic stress level of 42.6% of the students was mild, 36.7% was mid, 19.4% was mid-high and 1.3% was high. Moreover, they also observed that PSD levels of the students was statistically different regarding the variables of losing a family member/relative, feeling the earthquake and staying under debris (Kurt and Gülbahçe 2019). All these studies and their findings prove that earthquakes adversely affect individuals.

In this study, we found negatively significant correlations between life engagement and trauma levels following an earthquake (behavioural problems, emotive limitedness, affective structure). These findings were in accordance with literature. All worthy targets of an individual play a critical role in developing personal life engagement. When the individuals follow these targets, they meet the psychological demand of finding the meaning of existence and increase their life satisfaction (Uğur and Akin, 2015). Fear, concerns and stressful events negatively affect individuals and causes problems in personal life satisfaction and targets and these risk the joy of life and decrease life engagement (Solakumur, 2023). Bahar and Çuhadar (2023) emphasized that trauma level following an earthquake and dealing with earthquake stress are significant predictors of changes after a trauma. In addition, they reported that the damage on the houses of the individuals significantly affected their change after the trauma (Bahar and Çuhadar 2023). Similarly, in another study on Chinese adults experiencing the earthquake in Sichuan found that a significant correlation between traumatic stress level and damage or collapse of the house (Chan et al. 2011). We might say that material and moral losses due to an earthquake causes trauma on individuals.

We also found in this study that resilience positively affects life engagement. From this point of view, when resilience level is high, we might say that life engagement of individuals get higher as well. Similarly, Solakumur (2023) stated in the study that resilience plays a regulative role in the effect of Covid-19 fear on life engagement (Solakumur, 2023). This shows that life engagement is an important factor at the time of an earthquake or a pandemic.

From the findings of this study, we found a positively significant correlation between resilience and life engagement. These findings were in accordance with literature. Hence, we might say that when resilience level increases, life engagement increases or vice versa. When many studies in literature were examined, we might conclude that resilience and life satisfaction are correlated (Abolghasemi and Varaniyab 2010) and that resilience is positively and significantly correlated with life satisfaction (Sabancı and Çekiç 2019; Akdeniz et al. 2021) and with self-sufficiency and life satisfaction (Durak 2021). It's possible to describe this situation with psychological capital theory. As it's mentioned in this theory, positive life tendencies of individuals are correlated with their resilience. Individuals with psychological capital are better at dealing with challenges affecting their lives and thus they can sustain psychologically healthier lives.

One of the limitations of this study is that it is based on a cross-sectional design. While this design allows for assessing the mediating role of life engagement in individuals' traumatised and psychological resilience, it may limit the ability to draw conclusions about causality or observe changes over an extended period of time. Another limitation is that the study cannot include all risk factors.

4 Conclusion

The earthquakes happened on February 6, 2023 directly affected millions of people and caused various indirect problems for the rest of the population all over the country. We know that various psychological problems might develop in the individuals that experienced such a traumatic event and multiple losses. From the findings of this study, we found a negatively significant correlation between resilience and trauma level, but a positively significant correlation between resilience and life engagement. We also found a negatively significant correlation between life engagement and trauma level, but a positively significant correlation between life engagement and resilience. Following the earthquake in Kahramanmaraş, Türkiye we determined that life engagement plays an mediation role between resilience and trauma and life engagement has a vital role in trauma levels and resilience of individuals. We might not forget that the required steps should be taken in order to recover mental health of individuals and to compensate economic, social and psychological results of the earthquake. The results obtained revealed the importance of the resilience factor once again. It is thought that the psychological resilience of the participants should not be ignored in academic studies supporting interpretation and reconstruction within the scope of disaster and risk management. It is thought that it would be useful to cooperate in the fields of psycho-education and mental health in both basic interventions and primary care interventions after the disaster and to develop policies on the subject. All disasters show again and again that disaster preparedness is a more important element in coping. After the earthquake, the units affiliated to the ministry and the private sector should work together to ensure that mental health specialists reach the affected areas as soon as possible. Emergency psychological support and intervention should be provided according to the level of individuals affected by the earthquake. Because from the first moments after the earthquake, short-term (shock, fear, anger, etc.) and long-term (post-traumatic stress disorder, depression, eating and sleep disorders, etc.) psychological symptoms can be seen in individuals. Stress coping methods, strategies to find meaning in life, trauma awareness, trauma impact levels and problem solving skills should be evaluated and counselling should be provided. In this way, individuals' psychological resilience can be increased, the impact of trauma can be reduced and their attachment to life can be strengthened.

Funding Open access funding provided by the Scientific and Technological Research Council of Türkiye (TÜBİTAK). This study did not receive any financial support or relationships that may pose potential conflict of interest.

Data availability The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical approval The study was conducted by the ethics committee approval of Social Sciences, Academic Studies Ethics Committee dated on 09/08/2023 and numbered 96.

Competing interests The authors declare no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons

licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Abolghasemi A, Varaniyab ST (2010) Resilience and perceived stress: predictors of life satisfaction in the students of success and failure. *Procedia-Social Behav Sci* 5:748–752
- AFAD (2023) 06 Şubat 2023 Pazarcık-Elbistan (Kahramanmaraş) Mw: 7.7 – Mw: 7.6 Depremleri Raporu. 140 s. https://deprem.afad.gov.tr/assets/pdf/Kahramanmara%C5%9F%20Depremi%20%20Raporu_02.06.2023.pdf
- Akdeniz H, Savtekin G, Köylü İK (2021) Üniversite öğrencilerinin Yaşam Doyumlarının, Psikolojik Sağlamlık Düzeylerine Etkisinin incelenmesi. *Spor Ve Rekreasyon Araştırmaları Dergisi* 3(1):36–52. <https://doi.org/10.52272/srad.927472>
- Bahar A, Çuhadar D (2023) Trauma level, coping with stress and post-traumatic change in university students experiencing Kahramanmaraş centered earthquake: a cross-sectional study. *Disaster Med Pub Health Prep* 17:e549
- Balikuddembe JK, Reinhardt JD, Vahid G, Di B (2024) A scoping review of post-earthquake healthcare for vulnerable groups of the 2023 Turkey-Syria earthquakes. *BMC Public Health* 24(1):945
- Canbulat N, Dursun A (2024) A new and systematic model in the trauma process: emotion focused trauma model. *J Natl Edu* 53(242):1153–1178
- Çelik AK (2023) Deprem Sonrası Travma Belirtileri, Umut ve İyi Oluş Arasındaki İlişkinin incelenmesi. *TRT Akademi* 8(18):574–591
- Chan CL, Wan C-W, Wang Z, Qu BQ, Lu AHY, Ho Y, Yuan BQ, Zhang (2011) Xiyang Wang, and Xiulan Zhang. Posttraumatic stress disorder symptoms among adult survivors of the 2008 Sichuan earthquake in China. *Journal of traumatic stress* 24, no. 3: 295–302
- Durak İ (2021) Psikolojik Sağlamlık İle Yaşam Doyumu Arasındaki İlişkide Öz yeterliğin Aracı Etkisi. *Elektronik Sosyal Bilimler Dergisi* 20(78):1175–1190. <https://doi.org/10.17755/esosder.816639>
- Field A (2009) *Discovering Statistics Using SPSS*. Sage, London
- Hair JF, Black WC, Babin BJ, Anderson RE (2014) *Exploratory factor analysis*. *Multivar Data Anal* 7:100
- Hayes AF (2018) *Introduction to mediating, moderating and conditional process analysis: A refresion based approach* (2. Baskı). The Guilford Press, New York
- Hernández P, Gangsei D, Engstrom D (2007) Vicarious resilience: a new concept in work with those who survive trauma *Fam. Process* 46:229–241. <https://doi.org/10.1111/j.1545-5300.2007.00206.x>
- Kansu AF, Sayar GH (2018) Öz Yeterlik, Yaşam Anlamı ve Yaşam Bağlılığı Kavramları Üzerine Bir inceleme. *Etkileşim*, (1), 78–89
- Kaye-Tzadok A, Davidson-Arad B (2017) The contribution of cognitive strategies to the resilience of women survivors of childhood sexual abuse and Non-Abused women. *Violence against Women* 23:993–1015. <https://doi.org/10.1177/1077801216652506>
- Keener TA, Hall K, Wang K, Hulsey T, Piamjariyakul U (2021) Relationship of quality of life, resilience, and associated factors among nursing faculty during COVID-19. *Nurse Educ* 46:17–22. <https://doi.org/10.1097/NNE.0000000000000926>
- Kurt E, Gülbahçe A (2019) Van depremini Yaşayan öğrencilerin Travma Sonrası Stres Bozukluğu Düzeylerinin incelenmesi. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 23(3):957–972
- Liu Q, He F, Jiang M, Zhou Y (2013) Longitudinal study on adolescents' psychological resilience and its impact factors in 5.12 earthquake-hit areas. *Wei Sheng Yan Jiu* 42:950–954
- Masten AS (2001) Ordinary magic: resilience process in development. *Am Psychologist* 56:227–238
- Masten AS (2014) Global perspectives on resilience in children and youth. *Child Dev* 85:6–20. <https://doi.org/10.1111/cdev.12205>
- Sabancı Y, Çekiç A (2019) Psikolojik Sağlamlık ve Yaşamda Mevcut Anlamın lise öğrencilerinin Yaşam Doyumları Üzerindeki Etkisinin incelenmesi. *Turkish Studies- Educational Sci* 14(3):833–844. <https://doi.org/10.29228/TurkishStudies.22582>
- Sakarya D, Güneş C (2013) Van depremi Sonrasında Travma Sonrası Stres Bozukluğu Belirtilerinin Psikolojik Dayanıklılık İle İlişkisi. *Kriz Dergisi* 21(1):25–32

- Scali J, Gandubert C, Ritchie K, Soulier M, Ancelin ML et al (2012) Measuring resilience in adult women using the 10-items Connor-Davidson resilience scale (CD-RISC). Role of trauma exposure and anxiety disorders. *PLoS ONE* 7:e39879. <https://doi.org/10.1371/journal.pone.0039879>
- Shultz JM, Besser A, Kelly F, Allen A, Schmitz S, Hausmann V, Neria Y (2012) Psychological consequences of indirect exposure to disaster due to the Haiti earthquake. *Prehosp Disaster Med* 27(4):359–368 356|
- Sisto A, Vicinanza F, Campanozzi LL, Ricci G, Tartaglino D, Tambone V (2019) Towards a transversal definition of psychological resilience: a literature review *medicina*, 55). 745–766. <https://doi.org/10.3390/medicina55110745>
- Solakumur A, Dilek AN, Unlu Y, Kul M (2023) The effect of coaches' leadership behaviors on athletes' emotion regulation strategies. *Sport J* 24:1543–9518
- Sönmez MB (2022) Depremın Psikolojik Etkileri, Psikolojik Destek ve Korkuyla Baş Etme. *TOTBİD Dergisi* 21(3):337–343
- Tanhan F, Kayri M (2013) The validity and reliability work of the scale that determines the level of the trauma after the earthquake. *Educational Sciences: Theory Pract* 13(2):1021–1025
- Taşçı GA, Özsoy F (2021) Deprem Travmasının erken dönem Psikolojik etkileri ve Olası risk faktörleri. *Cukurova Med J* 46(2):488–494
- Uğur E, ve Akın A (2015) Yaşam Bağlılığı ölçeği Türkçe Formu: Geçerlik ve Güvenirlik Çalışması. *İnsan Ve Toplum Bilimleri Araştırmaları Dergisi* 4(2):424–432

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Authors and Affiliations

Esma Özmaya¹  · Beyza Erkoç²  · Sami Kalaycı³  · Sevda Uzun⁴  · Sayra Lotfi⁵ 

✉ Sevda Uzun
sevdauzun50@gmail.com

Esma Özmaya
ozmayaesma@gmail.com

Beyza Erkoç
beyzahatipoglu@windowlive.com

Sami Kalaycı
samiklyc@gmail.com

Sayra Lotfi
slotfi@medipol.edu.tr

¹ Faculty of Health Sciences, Department of Child Development, University of Karamanoğlu Mehmetbey, Karaman, Türkiye

² Faculty of Health Sciences, Department of Social Work, Karamanoğlu Mehmetbey University, Karaman, Türkiye

³ Faculty of Health Sciences, Department of Social Work, Aksaray University, Aksaray, Türkiye

⁴ Department of Psychiatry Nursing, University Faculty of Health Sciences, Gümüşhane University, Gümüşhane, Türkiye

⁵ Department of Social Work, Medipol University Faculty of Health Sciences, İstanbul, Türkiye