



## INVESTIGATION OF THE PSYCHOLOGICAL CONDITIONS OF INDIVIDUALS AFFECTED BY THE EARTHQUAKE CENTERED IN KAHRAMANMARAŞ

Süleyman KONCAGÜL

Social Worker

ORCID: <https://orcid.org/0009-0001-2720-8990>

[suleymankoncagul2@gmail.com](mailto:suleymankoncagul2@gmail.com)

Bülent ŞEN

Assoc.Prof.Dr., European University of Lefke, Northern Cyprus

ORCID: <https://orcid.org/0000-0003-1752-1876>

[bsen@eul.edu.tr](mailto:bsen@eul.edu.tr)

**Received:** May 24, 2024

**Accepted:** November 19, 2024

**Published:** December 31, 2024

### Suggested Citation:

Koncagül, S., & Şen, B. (2024). Investigation of the psychological conditions of individuals affected by the earthquake centered in Kahramanmaraş. *Turkish International Journal of Special Education and Guidance & Counseling (TIJSEG)*, 13(2), 165-176.



Copyright © 2024 by author(s). This is an open access article under the [CC BY 4.0 license](https://creativecommons.org/licenses/by/4.0/).

### Abstract

This study aims to examine the psychological conditions of individuals affected by the earthquake centered in Kahramanmaraş on February 6, 2023, which also impacted 11 other provinces. The research adopts a quantitative research design with relational screening model and includes 181 voluntary participants, comprising 93 individuals affected by the earthquake and 88 individuals who were not affected (control group). Data collection involved researcher-designed questionnaires and the Beck Depression Inventory (BDI), both of which were distributed to participants via Google Forms. The data were analyzed using SPSS 28.00. The results of the analyses indicated that the average BDI scores of the individuals affected by the earthquake were higher compared to those in the control group. However, no statistically significant differences were found between BDI scores and demographic variables such as gender, age groups, and economic status within the earthquake-affected group. Additionally, the analyses revealed no statistically significant association between the experience of the earthquake (including factors such as type of residence, location during the earthquake, building collapse, damage to the house, being trapped under debris, loss of relatives, and current place of residence) and depression levels.

**Keywords:** Earthquake, Kahramanmaraş earthquake, psychological condition.

### INTRODUCTION

The Kahramanmaraş-centered earthquake on February 6, 2023, was one of the deadliest in Turkey's history, severely affecting 11 provinces. The seismic sequence included two large earthquakes, one with a magnitude of 7.7 and another of 7.6, occurring about nine hours apart. The disaster impacted an estimated 14 million people across Turkey and Syria, leaving approximately 1.5 million people homeless. (AFAD & AA, 2023; Euronews, 2023). The affected area spanned around 350,000 square kilometers, comparable to the size of Germany.

In Turkey, official reports confirmed 53.537 deaths and 107.213 injured, while in Syria, estimates ranged between 5.951 and 8.476 deaths, with around 14.500 injuries. The overall death toll across both countries is estimated between 59.488 and 62.013 (AFAD & AA, 2023; Euronews, 2023).

The earthquakes caused immense structural damage over 400,000 buildings (AFAD & AA, 2023). Over 214.000 buildings were destroyed or severely damaged across the affected provinces. Thousands of additional buildings were moderately or lightly damaged, contributing to widespread displacement and homelessness (Euronews, 2023).



The estimated economic damage in Turkey reached approximately \$148.8 billion, equivalent to around 9% of the nation's GDP. Syria also sustained significant damage, estimated at \$14.8 billion (Euronews, 2023).

The psychological effects of the Kahramanmaraş-centered earthquakes on February 6, 2023, have been extensively studied, revealing deep and widespread impacts on mental health across the affected regions. Several studies have highlighted the key psychological consequences, including increased levels of anxiety, depression, and trauma-related disorders such as Post-Traumatic Stress Disorder (PTSD).

**Depression, Anxiety, and Stress:** Research conducted with survivors using standardized scales like the Depression, Anxiety, and Stress Scale (DASS-21) showed that psychological distress was significant, with many participants reporting symptoms of anxiety and depression. The persistent uncertainty and stress caused by the aftermath of the earthquakes led to heightened levels of distress, which in turn affected the mental well-being of individuals (Kartol et al., 2023).

**Trauma and PTSD:** Another critical outcome was the prevalence of PTSD symptoms. Survivors exhibited high levels of traumatic stress, with many showing signs of hypervigilance, flashbacks, and avoidance behaviors. This is consistent with findings from other earthquake-related disasters where psychological trauma becomes a long-term mental health issue (Kıymış & Fakioglu, 2024).

**Doomscrolling and Future Anxiety:** Research has also pointed to behavioral changes, such as increased doomscrolling (the compulsive consumption of negative news) and anxiety about the future. Survivors engaged in excessive consumption of distressing news, which exacerbated feelings of hopelessness and fear about their future (Kartol et al., 2023).

**Resilience and Recovery:** Studies focusing on resilience have shown mixed outcomes. While some survivors demonstrated resilience and an ability to recover, others struggled significantly. Recovery efforts and the provision of mental health services have been crucial in supporting the psychological recovery of survivors, especially those most vulnerable to the long-term effects of trauma (Çınaroğlu et al., 2024).

Overall, the psychological toll of the February 6 earthquakes has been immense, with a need for ongoing mental health support and interventions to address both immediate and long-term mental health consequences.

### **The current study**

Earthquakes are significant events among natural disasters, particularly due to their potential to cause traumatic effects. Beyond the physical damage they inflict, such disasters can leave profound psychological impacts on individuals. During or after an earthquake, people may feel that their lives are at risk, experience fear of losing loved ones, or face the loss of their homes and belongings. These circumstances can trigger emotional responses such as insecurity, fear, anxiety, sadness, and helplessness. The psychological effects of earthquakes may evolve over time, potentially leading to long-term health problems such as chronic stress, sleep disturbances, or post-traumatic stress disorder (PTSD).

Investigating how symptoms of depression vary based on demographic characteristics and earthquake experiences is crucial for understanding the levels of depression across different groups. To date, no study has been identified that analyzes the impact of demographic factors, exposure levels, housing damage, and personal experiences during and after the earthquake on depression levels following the 06/02/2023 earthquake, which was centered in Kahramanmaraş and affected 11 provinces. In a country like Türkiye, which is prone to earthquakes, comparing depression levels using a control group after such a devastating event can provide valuable insights. This study is expected to serve as a resource for mental health professionals, social workers, and policymakers, aiding the development of preventive and protective measures before earthquakes and therapeutic interventions after them to safeguard citizens' psychological well-being.



The purpose of this study is to examine the psychological state of individuals who experienced the earthquake centered in Kahramanmaraş on 06/02/2023, affecting 11 provinces. The sub-objectives of the study are as follows:

1. What are the depression scores of individuals who experienced the earthquake compared to those who did not?
2. Is there a statistically significant difference in depression levels based on the demographic characteristics (gender, age, and economic status) of individuals who experienced the earthquake?
3. Is there a statistically significant relationship between the characteristics influencing earthquake experiences (e.g., type of residence, location during the earthquake, building collapse, impact on the house, being trapped under debris, loss of loved ones, and current place of residence) and depression levels among those who experienced the earthquake?

## METHOD

In this research, the relational scanning method, one of the general scanning methods, was used. In studies that adopt the relational screening model, a situation or event is explained as it is, and the relationship and impact of the variables that cause this situation and their degrees are determined (Büyüköztürk et al., 2014). As the sampling method, simple random sampling method was used through a survey created in Google Forms and distributed through social media and communication networks.

### Participants

A total of 181 participants took part in the study, consisting of 93 individuals who experienced the earthquake and 88 individuals in the control group who did not. For the 93 participants who experienced the earthquake, the gender distribution shows that 52.7% were female (49 individuals), while 47.3% were male (44 individuals). In terms of age groups, the largest group (54.8%, 51 individuals) was between the ages of 18-25. The remaining participants were distributed as follows: 18.3% (17 individuals) aged 26-35, 15.1% (14 individuals) aged 36-45, 10.8% (10 individuals) aged 46-55, and 1.1% (1 individual) aged 56 and above. Participants were categorized into three groups based on their economic status: 34.4% (32 individuals) reported low economic status, 62.4% (58 individuals) reported medium economic status, and 3.2% (3 individuals) reported good economic status.

For the 88 participants in the control group, 70.5% were female (62 individuals) and 29.5% were male (26 individuals). In terms of age distribution, the largest group (47.7%, 42 individuals) was also in the 18-25 age range. Other age groups included: 21.6% (19 individuals) aged 26-35, 12.5% (11 individuals) aged 36-45, 13.6% (12 individuals) aged 46-55, and 4.5% (4 individuals) aged 56 and above. Regarding economic status, 5.7% (5 individuals) reported low economic status, 73.9% (65 individuals) reported medium economic status, and 20.5% (18 individuals) reported good economic status.

### Data Collection Tools

#### Demographic information form

To assess earthquake experiences, demographic information was limited to gender, age, and economic status. Additionally, the study included questions exploring factors that could potentially influence both earthquake experiences and depression. These factors included: the type of residence, location during the earthquake, building collapse, impact on the home, experience of being trapped under debris, loss of loved ones in the earthquake, and the participant's place of residence at the time of the study.

#### Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI) was utilized in this study. The BDI is designed to measure the physical, emotional, and cognitive symptoms of depression. This self-assessment tool consists of 21



symptom categories, through which participants evaluate themselves. Based on their responses, participants can score up to 63 points, with the total score indicating the severity of depression. The BDI was developed by Beck et al. in 1961, and its Turkish adaptation, including validity and reliability studies, was conducted by Hisli (1988), yielding a Cronbach’s Alpha coefficient of .80. In the current study, the Cronbach’s Alpha value was found to be .89, indicating high internal consistency.

### Procedure and analyses

The data collection process began with the distribution of the Google Forms link to potential participants. This method was chosen to facilitate easy access and online participation, especially since many participants had relocated to different cities after the earthquake. The online format allowed for a more efficient and faster data collection process. Announcements about the study were made on various social media platforms, and the survey link was shared within relevant groups.

Several challenges were encountered during the data collection process. Although the study initially started with approximately 300 participants, the sample size was reduced to 181 due to missing data and inconsistencies in responses within the control group. Efforts were made to reach participants from diverse demographic backgrounds to ensure variety. However, it was observed that women and young adults showed greater interest and participation in the study.

The study data were analyzed using SPSS 28.00 software. Initially, a normality test was conducted. The results indicated that the data followed a normal distribution, as evidenced by the following observations: Skewness and kurtosis values were within acceptable limits. The mean, median, and mode values were very close to each other. The histogram showed an approximately symmetrical shape with data clustered around the mean. In the Q-Q plot, the points were aligned closely along the diagonal line. The box plot showed the median (represented by the central line) positioned near the middle of the box, with both whiskers of similar length. Additionally, no outliers were identified that could distort normality. Based on these findings, it was determined that the data followed a normal distribution, and therefore, parametric tests were applied in the analysis.

The personal information form utilized in this study was developed by the researchers. Necessary permissions for the Turkish adaptation of the Beck Depression Inventory employed in the study were obtained from the author. Ethical approval for the study was sought and granted by the Scientific Research and Publication Ethics Committee (BAYEK) of European University of Lefke, under decision number BAYEK026.02, dated 24.05.2023.

## RESULTS and DISCUSSION

In all analyses conducted, no statistically significant differences were observed between depression levels and the variables ( $p>.05$ ); therefore, the discussion section follows directly after the findings.

**Table 1.** Information regarding individuals' earthquake experience on February 6, 2023, Kahramanmaraş earthquake.

		n	%
Housing Status	My own house	48	51.6
	Rental	45	48.4
Location during the earthquake	At home	89	95.7
	Outside	2	2.2
	In a motor vehicle	2	2.2
Building collapse	No	58	62.4
	Yes	35	37.6
	Undamaged	8	8.6
Condition of the house	Moderately damaged	16	17.2
	Severely damaged	36	38.7
	Collapsed	18	19.4
	Slightly damaged	15	16.1



**Table 1 (Continued).** Information regarding individuals' earthquake experience on February 6, 2023, Kahramanmaraş earthquake.

		n	%
Being trapped under rubble	No	85	91.4
	Yes	8	8.6
Loss of loved ones in the earthquake	No	13	14.0
	Yes	80	86.0
Current place of residence	Staying at a relative's house	18	19.4
	Moved to a new house	62	66.7
	Staying in a tent	13	14.0
	Total	93	100.0

The majority of participants (95.7%) were at home during the earthquake. However, 37.6% experienced building collapse. Of these individuals, 38.7% are currently residing in severely damaged homes, while 8.6% were trapped under debris. A significant proportion (86.0%) reported the loss of loved ones in the earthquake. At the time of the study, 66.7% of participants had relocated to new housing, while 14.0% were residing in tents. These findings underscore the severity and impact of the earthquake, highlighting the presence of substantial social and economic challenges in the aftermath.

**Table 2.** Distribution of mean and standard deviation scores of the beck depression inventory.

	n	Min.	Max.	Mean	Std.Dev.
Individuals With Earthquake Experience	93	4.00	49.00	20.59	10.35
Individuals Without Earthquake Experience	88	1.00	43.00	14.07	8.97

The distribution of mean and standard deviation scores on the Beck Depression Inventory varies between those who experienced the earthquake and those who did not (control group). For individuals who experienced the earthquake, scale scores ranged from a minimum of 4 to a maximum of 49, with a mean score of 20.59 and a standard deviation of 10.35. In contrast, scores for those who did not experience the earthquake ranged from 1 to 43, with a mean score of 14.07 and a standard deviation of 8.97. These findings suggest that individuals who experienced the earthquake generally exhibit higher depression scores, while not having experienced the earthquake is associated with overall lower depression scores.

Indeed, a study by Armenian et al. (2002) found that students exposed to more dangerous or challenging conditions due to the earthquake exhibited elevated symptom levels 10 days post-earthquake. Similarly, students who repeatedly expressed more negative thoughts about the earthquake within the initial 10 days were more likely to show high levels of depressive and stress-related symptoms seven weeks later. These findings suggest that exposure to traumatic events can have both short- and long-term impacts on individuals' psychological well-being. The study by Başoğlu et al. (2004) further demonstrates the enduring psychological effects of catastrophic earthquakes, as such natural disasters can result in traumatic experiences that may lead to lasting effects on psychological health. Long-term psychological impacts may include conditions such as post-traumatic stress disorder (PTSD), depression, and anxiety. Catastrophic events can adversely affect individuals' emotional and mental health, significantly impacting quality of life over extended periods. Studies conducted following major earthquakes like the Marmara Earthquake underscore that those affected often exhibit considerably higher levels of depression and anxiety. Consistent with these findings, individuals who did not experience the earthquake generally report lower depression scores (Aksoy & Kabasakal, 2023; Çoban et al., 2017).

In their study assessing the L'Aquila earthquake, Bianchini et al. (2017) reported elevated levels of depression and anxiety among individuals affected by the disaster. The research highlights the prevalence of mental health issues following the earthquake and emphasizes the significant role of social support mechanisms in mitigating these effects. This underscores the critical need for mental



health support and interventions in the aftermath of earthquakes, both to address immediate effects and to manage long-term impacts (Çınaroğlu et al., 2024).

**Table 3.** Comparison of gender and beck depression inventory scores among individuals affected by the Kahramanmaraş earthquake.

	n	Mean	Std.Dev.	F	p
Female	49	21.16	9.45	1.854	0.177
Male	44	19.95	11.34		

p<.05

The analysis revealed no statistically significant difference between male and female participants' scores on the Beck Depression Inventory ( $p>.05$ ). The mean BDI score for females was 21.16, with a standard deviation of 9.45, while for males, the mean score was 19.95, with a standard deviation of 11.34. The t-value was calculated as 1.854, with a p-value of .177. This result suggests that gender does not have a significant effect on depression levels.

In this study, no significant difference was found between BDI scores and gender. However, some previous studies in the literature report different findings on this issue. Research conducted by Anwar et al. (2011) and Cerdá et al. (2013) suggests that gender may influence depression levels following natural disasters. Several prior studies have indicated that women may be more vulnerable to mental health disorders post-disaster. For instance, Mondragón et al. (2019) suggest that women may be at a higher risk of depression following an earthquake. Similarly, Çınaroğlu et al. (2024) found that women had higher BAI scores than men. Conversely, a study by Chen et al. (2020) reported that post-disaster, men exhibited higher levels of suicide ideation related to depression than women. Additionally, men's sociocultural gender roles may influence their depressive responses to disasters. Some studies in the literature indicate that gender differences may shape depressive responses (Yehuda et al., 2015). While women may develop negative thoughts more readily after traumatic experiences, making them more susceptible to depression, men may temporarily distance themselves from depressive emotions through emotional suppression mechanisms (Christiansen & Hansen, 2015). This finding suggests that men may adopt different strategies than women in internalizing and expressing emotional responses. Therefore, the way gender influences depressive responses is complex and multifaceted. The interaction between sociocultural and biological factors may impact individuals' coping mechanisms and their processes for managing depression in the wake of disasters.

**Table 4.** Comparison of age and beck depression inventory scores among individuals affected by the Kahramanmaraş earthquake.

Age	n	Mean	Std.Dev.	F	p
18-25	51	20.00	10.67	.972	.427
26-35	17	23.17	11.47		
36-45	14	22.07	8.90		
46-55	10	16.30	8.20		
56 +	1	29.00			

\*p<.05

The analysis indicated no statistically significant difference in Beck Depression Inventory scores across different age groups ( $p>.05$ ). The mean BDI scores by age group were as follows: 20.00 for ages 18-25, 23.17 for ages 26-35, 22.07 for ages 36-45, 16.30 for ages 46-55, and 29.00 for ages 56 and above. The corresponding standard deviations were 10.67, 11.47, 8.90, and 8.20, respectively. The F-value was calculated as .972, with a p-value of .427. These results suggest that age groups do not have a significant impact on depression levels.



In this study, no significant difference was found between BDI scores and age. However, variation in age levels may have diverse effects on individuals' perception of depression severity and their capacity to cope with it. Given the diverse findings in the literature, further research is needed to better understand the relationship between age and depression. For instance, Cénat and Derivois (2014) reported that symptoms of depression varied across age groups, with older individuals exhibiting more depressive symptoms than other age groups. Conversely, some studies suggest that individuals aged 18 to 24 have a higher likelihood of experiencing post-disaster depression (Ağar, 2020; Liu et al., 2021). These varying findings may result from methodological or cultural differences.

**Table 5.** Comparison of economic status and beck depression inventory scores among individuals affected by the Kahramanmaraş earthquake.

	n	Mean	Std.Dev.	F	p
Low	32	23.28	10.73		
Medium	58	19.60	10.01	2.732	.070
Good	3	11.00	1.73		

\*p<.05

The analysis revealed no statistically significant difference in participants' Beck Depression Inventory (BDI) scores based on their economic status ( $p>.05$ ). The mean BDI score was 23.28 for those with low economic status, 19.60 for those with moderate economic status, and 11.00 for those with high economic status. The standard deviations were 10.73, 10.01, and 1.73, respectively. The F-value was calculated as 2.732, with a p-value of .070. These findings indicate that economic status does not have a significant effect on depression levels.

In a study conducted by Koçer and Koçak (2024), a significant difference was identified between participants' economic status and earthquake trauma. According to the results of the Post-Hoc (Scheffe) analysis, participants with higher economic status were found to be less affected by earthquake trauma compared to those with moderate or low economic status. Similarly, the findings in the study by Çınaroğlu et al. (2024) also favored individuals with higher economic status. These findings suggest that economic status may significantly influence responses to traumatic events as well as depression. Additionally, studies by Bozkurt (2004) and Sümer (2008) have highlighted the relationship between economic status and depression. These studies propose that socioeconomic status can impact individuals' psychological health, with particularly notable effects on depression.

**Table 6.** Comparison of the beck depression inventory based on earthquake-related characteristics among individuals affected by the Kahramanmaraş earthquake.

		n	Mean	Std.Dev.	F	p
Type of Residence	My Own House	48	19.66	10.04	.628	.430
	Rental	45	21.57	10.69		
Location During the Earthquake	Evde	89	20.60	10.46	.261	.771
	Outside	2	16.50	6.36		
	In a Motor Vehicle	2	24.00	11.31		
Building Collapse Status	No	58	20.46	10.10	.002	.968
	Yes	35	20.80	10.88		
Condition of the House	Undamaged	8	18.25	10.15	1.187	.322
	Moderately Damaged	16	16.56	8.25		
	Severely Damaged	36	21.94	10.07		
	Collapsed	18	20.05	11.88		
Being Trapped Under Rubble	Slightly Damaged	15	23.53	10.86	2.232	.139
	No	85	20.41	9.82		
	Yes	8	22.50	15.68		



**Table 6 (Continued).** Comparison of the beck depression inventory based on earthquake-related characteristics among individuals affected by the Kahramanmaraş earthquake.

		n	Mean	Std.Dev.	F	p
Loss of Loved Ones in the Earthquake	No	13	20.30	10.20	.002	.965
	Yes	80	20.63	10.43		
Current Place of Residence	Staying at a Relative’s House	18	23.50	11.27	.880	.418
	Moved to a New House	62	19.92	10.32		
	Staying in a Tent	13	19.76	9.12		

\*p<.05

The mean depression score for individuals living in their own homes was 19.66, with a standard deviation of 10.04. For those living in rented housing, the mean depression score was 21.57, with a standard deviation of 10.69. No significant difference was found in depression scores based on the type of residence ( $F=.628$ ,  $p=.430$ ).

Numerous studies have compared depression scores between homeowners and renters. Findings generally suggest a positive relationship between homeownership and mental health, indicating that homeownership may reduce depression levels. One study examined the relationship between homeownership, depression, and life satisfaction in China, concluding that homeownership is positively associated with life satisfaction and negatively associated with depression, particularly among individuals in rural areas (Seo et al., 2022). Research by Zielenbach (2003) in the United States also found that homeownership could serve as a more cost-effective housing option for low-income households in the long term, with beneficial effects on psychological well-being. Although no significant difference in depression scores was found between homeowners and renters, homeownership offers long-term economic and psychological advantages. These findings suggest that, despite the similarity in depression scores between homeowners and renters during the Kahramanmaraş earthquake, homeownership may positively impact overall psychological well-being.

The mean depression score for individuals who were at home during the earthquake was 20.60, with a standard deviation of 10.46. No significant difference was observed in depression scores based on the location during the earthquake ( $F=.261$ ,  $p=.771$ ).

Several studies have examined the lack of a significant difference in depression scores between those who were indoors and those who were outdoors or in a vehicle during an earthquake. Research by Sagud et al. (2023) explored the psychological effects of being indoors or outdoors during an earthquake, finding no significant impact of location on depression scores. These findings suggest that individuals may experience similar levels of depression regardless of their location during an earthquake. In a related study, Aslam (2010) assessed the impact of physical surroundings on stress and depression following traumatic events like earthquakes. Their research also found no notable difference in depression scores between those who stayed indoors and those who were outside. This outcome suggests that post-traumatic stress is influenced more by the event itself and the individual's coping mechanisms than by the physical setting at the time. Such studies indicate that although various factors shape individuals' psychological states after major traumas, location at the moment of the event does not appear to be a significant factor among them.

The mean depression score for individuals who experienced a building collapse was 20.80, with a standard deviation of 10.88. No significant difference was found in depression scores related to the experience of building collapse ( $F=.002$ ,  $p=.968$ ). For those reporting severe damage to their homes, the mean depression score was 21.94, with a standard deviation of 10.10; however, no significant difference was observed in depression scores based on the degree of home damage ( $F=1.187$ ,  $p=.322$ ). The mean depression score for individuals trapped under debris was 22.50, with a standard deviation of 15.68, yet no significant difference was noted in depression scores based on this experience either ( $F=2.232$ ,  $p=.139$ ).





Numerous studies have demonstrated an increase in depressive symptoms among individuals exposed to natural disasters. Factors such as home loss, property loss, or physical injuries have been highlighted as having adverse effects on psychological health (Pennington et al., 2018; Tang et al., 2014; Ginexi et al., 2000). Research by Galea et al. (2005) and Kıymış & Fakioglu (2024) found that PTSD symptoms are commonly observed following disasters, with these symptoms emerging as long-term consequences of sustained stress, fear, and uncertainty. Bonanno et al. (2010) reported that while some individuals display resilience post-disaster, others may face more challenging recovery processes.

The mean depression score for individuals who lost loved ones was 20.63, with a standard deviation of 10.43. Analysis showed no significant difference in depression scores based on loss of close ones ( $F=.002$ ,  $p=.965$ ). For those residing in tents, the mean depression score was 19.76, with a standard deviation of 9.12, and similarly, no significant difference was found in depression scores by type of accommodation ( $F=.880$ ,  $p=.418$ ). In conclusion, no statistically significant differences were identified in Beck Depression Inventory scores across the earthquake-related variables examined in this analysis, suggesting that the impact of the earthquake experience on depression levels does not vary according to these characteristics.

In the study by Taşçı and Özsoy (2021), it was noted that while depression and anxiety levels did not increase among earthquake survivors, trauma and dissociation scores were elevated. This finding can be interpreted as evidence that individuals exposed to earthquakes and similar traumatic events may experience various dimensions of psychological impact. In a study by Gao et al. (2019), it was found that, even 37 years post-earthquake, the likelihood of experiencing depression was nearly three times higher for those who lost loved ones during the event compared to those who did not experience the earthquake, and 1.69 times higher for those who did not lose loved ones.

## CONCLUSION and SUGGESTIONS

Based on the analyses conducted, a significant difference was observed in Beck Depression Inventory (BDI) scores between individuals who experienced the earthquake and those who did not (control group). The mean BDI score for individuals who experienced the earthquake was calculated as 20.59, while the control group's mean score was 14.07. According to the results, no statistically significant difference was found in BDI scores regarding gender, age groups, or economic status. These findings suggest that gender, age, and economic status are not decisive factors in levels of depression. Furthermore, no statistically significant difference was detected between earthquake experience and levels of depression based on housing type, location, or degree of exposure. These findings indicate that the manner in which the earthquake was experienced or the extent of damage incurred does not have a notable impact on individuals' depression scores. For instance, no significant difference in depression scores was observed between those whose homes were damaged and those whose were not, or between those trapped under debris and those who were not. Similarly, there was no observed difference in depression scores between individuals who were at home, outside, or in a vehicle during the earthquake. According to the statistical analyses, these research findings provide significant insights for understanding post-earthquake depression and developing support programs. As this study is limited by the scale used and the participant sample, future research could be conducted with alternative measures and broader participant groups.

Based on the study, the following recommendations have been developed:

- Considering Turkey's location within an earthquake zone, courses on “Social Work in Disasters” offered in the curricula of social work departments at universities could be restructured from elective to compulsory.
- Social workers should plan and implement in-service training programs within their institutions to better support earthquake survivors.

- Social workers, in fulfilling their role as “community spokesperson,” should prepare macro-level educational initiatives to inform the public about pre-earthquake precautions and procedures during and after an earthquake. These initiatives should be disseminated through written, visual, and social media channels.
- Social workers should be prepared to participate in interdisciplinary efforts while providing psychosocial support to earthquake survivors in affected regions.

### **Ethics and Conflict of Interest**

The authors have acted in accordance with ethical rules at all stages of the research, and there is no conflict of interest among the authors.

### **REFERENCES**

- AFAD & Anadolu Ajansı (AA). (2023). *Depremde can kayıpları* [in Turkish]. 20/03/2023 <https://www.aa.com.tr/tr/asrin-felaketi/kahramanmaras-merkezli-depremlerde-hayatini-kaybedenlerin-sayisi-50-bin-96-oldu/2850716>
- Aksoy, Ş., & Kabasakal, Z. (2023). Afet sonrası durumlara yönelik hazırlanan psikososyal destek uygulamalarının ve çalışmalarının incelenmesi [Review of psychosocial support practices and practices prepared for post-disaster situations]. *IBAD Journal of Social Sciences*, 15(15), 80-91. doi:10.21733/ibad.1272044
- Ağar, A. (2020). Yaşlılarda ortaya çıkan psikolojik değişiklikler [Psychological changes in the elderly]. *Journal of Geriatric Science*, 3(2), 75-80. <https://doi.org/10.47141/geriatrik.744968>
- Anwar, J., Mpofo, E., Matthews, L. R., Shadoul, A. F., & Brock, K. E. (2011). Reproductive health and access to healthcare facilities: Risk factors for depression and anxiety in women with an earthquake experience. *BMC Public Health*, 11(1), 1-13. doi:10.1186/1471-2458-11-523
- Armenian, H. K., Morikawa, M., Melkonian, A. K., Hovanesian, A., Akiskal, K., & Akiskal, H. S. (2002). Risk factors for depression in the survivors of the 1988 earthquake in Armenia. *Journal of Urban Health*, 79, 373-382. doi:10.1093/jurban/79.3.373
- Aslam, N. (2010). Trauma, depression, anxiety, and stress among individuals living in earthquake affected and unaffected areas. *Pakistan Journal of Psychological Research*, 25, 13-48.
- Baçoğlu, M., Kiliç, C., Şalcioglu, E., & Livanou, M. (2004). Prevalence of posttraumatic stress disorder and comorbid depression in earthquake survivors in Turkey: an epidemiological study. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 17(2), 133-141. doi:10.1023/B:JOTS.0000022619.31615.e8
- Bianchini, V., Giusti, L., Salza, A., Cofini, V., Cifone, M. G., Casacchia, M., ... & Roncone, R. (2017). Moderate depression promotes posttraumatic growth (Ptg): A young population survey 2 years after the 2009 L'aquila earthquake. *Clinical practice and epidemiology in mental health: CP & EMH*, 13, 10. doi:10.2174/1745017901713010010
- Bonanno, G. A., Brewin, C. R., Kaniasty, K., & Greca, A. M. L. (2010). Weighing the costs of disaster: Consequences, risks, and resilience in individuals, families, and communities. *Psychological science in the public interest*, 11(1), 1-49. doi:10.1177/1529100610387086
- Bozkurt, N. (2004). Bir grup üniversite öğrencisinin depresyon ve kaygı düzeyleri ile çeşitli değişkenler arasındaki ilişkiler [The relationship between the levels of depression and anxiety in a group of university students and various variables]. *Education and Science*, 29(133), 52-59.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2014). *Bilimsel araştırma yöntemleri* [Scientific research methods]. Ankara: Pegem A.
- Cénat, J. M., & Derivois, D. (2014). Assessment of prevalence and determinants of posttraumatic stress disorder and depression symptoms in adults survivors of earthquake in Haiti after 30 months. *Journal of Affective Disorders*, 159, 111-117. doi:10.1016/j.jad.2014.02.025
- Cerdá, M., Paczkowski, M., Galea, S., Nemethy, K., Péan, C., & Desvarieux, M. (2013). psychopathology in the aftermath of the Haiti earthquake: A population based study of posttraumatic stress disorder and major depression. *Depression and Anxiety*, 30(5), 413-424. doi:10.1002/da.22007



- Chen, X. Y., Chen, J., Shi, X., Jiang, M., Li, Y., Zhou, Y., & Chan, C. L. W. (2020). Trajectories of maternal symptoms of posttraumatic stress disorder predict long-term mental health of children following the Wenchuan earthquake in China: A 10-year follow-up study. *Journal of Affective Disorders*, 266, 201-206. doi:10.1016/j.jad.2020.01.084
- Christiansen, D. M. ve Hansen, M. (2015). Accounting for sex differences in PTSD: A multivariable mediation model. *European Journal of Psychotraumatology*, 6(1), 26068. doi:10.3402/ejpt.v6.26068
- Çınaroğlu, M. (2024). Trauma, addiction, and the path to recovery after the Kahramanmaraş earthquakes. *Nişantaşı University Journal of Social Sciences*, 1(12) 37-59.
- Çoban, M., Sözbilir, M., & Göktaş, Y. (2017). Deprem deneyimini yaşamış kişilerin deprem öncesi hazırlık algılarının belirlenmesi: Bir durum çalışması [Determining preparation perceptions before earthquake of individuals experienced earthquake: A case study]. *Eastern Geographical Review*, 22(37), 113-134. doi:10.17295/ataunidcd.281721
- Euronews (2023). *Depremde can kayıpları* [in Turkish] 12/2/2023 <https://tr.euronews.com/2023/02/12/kahramanmaras-merkezli-depremlerden-etkilenen-suriyede-can-kayıplari-artiyor>
- Galea, S., Nandi, A., & Vlahov, D. (2005). The epidemiology of post-traumatic stress disorder after disasters. *Epidemiologic reviews*, 27(1), 78-91. doi:10.1093/epirev/mxi003
- Gao, X., Leng, Y., Guo, Y., Yang, J., Cui, Q., Geng, B., ... & Zhou, Y. (2019). Association between earthquake experience and depression 37 years after the Tangshan earthquake: a cross-sectional study. *BMJ open*, 9(8). doi:10.1136/bmjopen-2018-026110
- Ginexi, E. M., Weihs, K., Simmens, S. J., & Hoyt, D. R. (2000). Natural disaster and depression: a prospective investigation of reactions to the 1993 midwest floods. *American Journal of Community Psychology*, 28(4), 495-518. doi:10.1023/A:1005188515149
- Hisli, N. (1989). Beck Depresyon Envanterinin üniversite öğrencileri için geçerliği, güvenilirliği [in Turkish]. *Journal of Psychology*, 7(23), 3-13.
- Kartol, A., Üztemur, S. & Yaşar, P. (2023). 'I cannot see ahead': psychological distress, doomscrolling and dark future among adult survivors following M<sub>w</sub> 7.7. and 7.6 earthquakes in Türkiye. *BMC Public Health* 23, 2513 <https://doi.org/10.1186/s12889-023-17460-3>
- Kiymis, I., Fakioglu, M. (2024). The psychological consequences of 6 February 2023 Kahramanmaraş earthquakes. *Nat Hazards* <https://doi.org/10.1007/s11069-024-06902-9>
- Koçer, A., & Koçak, O. (2024). 2023 depremleri ve uzaktan eğitimin yükseköğretim öğrencilerinin psikolojik durumlarına etkisi [The impact of 2023 earthquakes and distance education on the psychological conditions of higher education students]. *Journal of Open Education Applications and Research*, 10(1), 71-91. doi:10.51948/auad.1324641
- Liu, C., Liu, D., Huang, N., Fu, M., Ahmed, J. F., Zhang, Y., & Guo, J. (2021). The combined impact of gender and age on post-traumatic stress symptoms, depression, and insomnia during COVID-19 outbreak in China. *Frontiers in Public Health*, 8, 620023. doi:10.3389/fpubh.2020.620023
- Mondragón, J., Sánchez-Román, F. R., Palma-Zarco, A., Aguilar-Soto, M., & Borja-Aburto, V. H. (2019). Prevalence of post-traumatic stress disorder and depression after the September 19th, 2017 earthquake in Mexico. *Archives of Medical Research*, 50(8), 502-508. doi:10.1016/j.arcmed.2019.11.008
- Pennington, M. L., Carpenter, T. P., Synett, S. J., Torres, V. A., Teague, J., Morissette, S. B., ... & Gulliver, S. B. (2018). The influence of exposure to natural disasters on depression and PTSD symptoms among firefighters. *Prehospital and Disaster Medicine*, 33(1), 102-108. doi:10.1017/S1049023X17007026
- Sagud, M., Janović, M. B., Čusa, Z. V., Jakšić, N., Krakan, L. B., Begić, D., ... & Wang, W. (2023). Depression and stress levels in patients with different psychiatric disorders during concurrent early-phase COVID-19 pandemic and earthquake in Croatia. *BMC psychiatry*, 23(1), 798. doi:10.1186/s12888-023-05302-w
- Seo, B. K., Hwang, I. H., Sun, Y., & Chen, J. (2022). Homeownership, depression, and life satisfaction in China: the gender and urban-rural disparities. *International Journal of Environmental Research and Public Health*, 19(22), 14833. doi:10.3390/ijerph192214833
- Sümer, A. S. (2008). *Farklı öz-anlayış (self-compassion) düzeylerine sahip üniversite öğrencilerinde depresyon anksiyete ve stresin değerlendirilmesi* [The assesment of depression, anxiety and stress in university students that have different self compassion level] (Unpublished master's thesis). Selçuk University, Konya.



- Tang, B., Liu, X., Liu, Y., Xue, C., & Zhang, L. (2014). A meta-analysis of risk factors for depression in adults and children after natural disasters. *BMC public health, 14*, 1-12. doi:10.1186/1471-2458-14-623
- Taşçı, G. A., & Özsoy, F. (2021). Deprem travmasının erken dönem psikolojik etkileri ve olası risk faktörleri [Early psychological effects of earthquake trauma and possible risk factors]. *Cukurova Medical Journal, 46*(2), 488-494. doi:10.17826/cumj.841197
- Yehuda, R., Hoge, C. W., McFarlane, A. C., Vermetten, E., Lanius, R. A., Nievergelt, C. M., & Hyman, S. E. (2015). Post-traumatic stress disorder. *Nature Reviews Disease Primers, 1*(1), 1-22. doi: 10.1038/nrdp.2015.57
- Zielenbach, S. (2003). A critical analysis of low-income homeownership strategies. *J. Affordable Hous. & Cmty. Dev. L., 13*, 446.

TIJSEG