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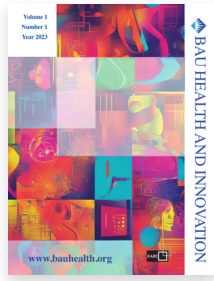

Original Article

Social Trauma Levels and Their Effects on Nutrition Among Individuals Fourth-degree Affected by the Kahramanmaraş-centered Earthquakes

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Abstract

Objectives: Natural disasters, such as earthquakes, can cause trauma and impact individuals' nutritional habits. This study aims to examine the social trauma experienced by individuals fourth-degree affected by the Kahramanmaraş earthquakes and its impact on their nutritional habits.

Methods: The study was conducted between April and June 2023 with 384 participants. Participants completed forms regarding their sociodemographic characteristics and nutritional habits, and the Post-Earthquake Trauma Level Determination Scale (PETLDS) was administered.

Results: Among the participants, 63% were male and 37% were female. A total of 97.8% of the 198 individuals reported negative effects on their nutritional habits, with 69.7% of these effects lasting longer than one week. The number and timing of main and snack meals changed significantly compared to the pre-earthquake period ($p<0.001$). Behavioral problems, emotional irritability, cognitive restructuring, and sleep problems—the subdimensions of PETLDS—were found to be higher in women than in men ($p<0.001$). Behavioral problems ($p=0.007$) and sleep problems ($p=0.016$) were also more prevalent among individuals whose family members were affected by the earthquake.

Conclusion: The Kahramanmaraş-centered earthquakes caused social trauma in individuals fourth-degree affected, predominantly leading to negative changes in their nutritional habits. However, since other potential factors influencing dietary changes were not comprehensively analyzed, these findings should be interpreted within the study's limitations.

Keywords: Eating habits, earthquake, nutrition, trauma.

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A natural disaster is an event of technological, human-made, or natural origin that causes physical, social, and economic losses for a specific segment or the entirety of a community, disrupts or halts human activities and normal life, and exceeds the affected community's coping capacity. A disaster refers not to the event itself but to its consequences.[1] According to the World Health Organization (WHO), approximately 125 million people

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were affected by natural disasters in 2018.[2] Earthquakes are among the most extensive natural disasters in terms of their impact area and duration. They occur when tectonic forces or volcanic activities cause fractures and displacements in the Earth's crust, releasing energy that propagates as seismic waves and violently shakes the environment and the ground.[1]

More than 90% of Türkiye's land is at risk of earthquakes. The country ranks first globally in terms of the frequency of large-scale disasters. After every disaster, four different groups of affected individuals are identified. Individuals who follow the disaster's effects and the victims' situations through mass media and social media are defined as "fourth-degree affected individuals." Psychological issues such as fear of entering buildings, wanting to keep lights on continuously, staying awake at night (especially during the hours the earthquake occurred), and avoiding stimuli associated with the earthquake are commonly observed in this group.[3]

On February 6, 2023, a 7.8 Moment Magnitude Scale earthquake centered in Pazarcık, Kahramanmaraş, and a second 7.6 Moment Magnitude Scale earthquake centered in Elbistan struck Türkiye. Following these two major earthquakes, 11,020 aftershocks were recorded. In Kahramanmaraş, Gaziantep, Şanlıurfa, Diyarbakır, Adana, Adıyaman, Osmaniye, Hatay, Kilis, Malatya, and Elazığ provinces, a total of 44,218 people lost their lives, 80,278 were injured, 528,146 were evacuated to safe zones, and 1,971,589 displaced individuals left these provinces by their own means.[4]

Acquiring information about disasters can reduce uncertainty and mitigate the effects of negative emotions such as anxiety and fear. However, continuous exposure to news about the experiences of victims and post-disaster conditions has been shown to increase individuals' stress levels.[5] According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), Acute Stress Disorder is characterized by a range of acute stress reactions, including anxiety, dissociative symptoms, and other indicators, occurring within the first 30 days following a traumatic event. If symptoms persist for more than a month, a diagnosis of Post-Traumatic Stress Disorder (PTSD) is made.[6] Balanced nutrition, sleep, and light exercises aimed at increasing oxygen support to the brain play a significant role in improving mood.[7] Post-disaster, adults may experience problems such as sleep and eating disorders, substance abuse, depression, anxiety, PTSD, social withdrawal, deterioration in relationships, attention deficits, aggressive behaviors, restlessness, fear, worry, indecisiveness, and a decline in feelings of respect and trust.[8–10] Being exposed to disasters increases individuals' psychological and physiological vulnerabilities, leading to nutritional problems.[11]

This study aims to examine the social trauma experienced by individuals fourth-degree affected by the Kahramanmaraş earthquakes and the impact of this trauma on their nutritional habits. The literature reveals a lack of focus on the psychological issues emerging after disasters and their effects on individuals' eating habits. Analyzing changes in dietary habits following an earthquake could contribute to a better understanding of individuals' responses to traumatic events.

Studies on earthquakes in Türkiye have focused primarily on post-disaster mental health and social impacts, but the relationship between eating habits and social trauma has not been adequately explored. Observed changes in the eating habits of individuals who were not physically present in the disaster zone but followed the events through media (fourth-degree affected individuals) could be a significant indicator of the social trauma experienced after the disaster.

This study aims to examine the social trauma experienced by individuals fourth-degree affected by the Kahramanmaraş earthquakes and the impact of this trauma on their nutritional habits. Natural disasters, such as earthquakes, have been widely studied for their physical and social effects, yet their long-term psychological impacts on dietary habits remain underexplored. Previous studies on major disasters, including the Marmara Earthquake (1999) and Tōhoku Earthquake (2011), have focused on mental health outcomes like anxiety, depression, and PTSD, but research addressing behavioral changes, such as eating habits, is limited.[12,13] Highlighting this gap, the current study aims to provide novel insights into the connection between social trauma and eating behaviors, particularly among fourth-degree affected individuals.

Materials and Methods

The study was approved by the Marmara University Research Ethics Committee (no: 2023/47, date: 30/03/2023)

Study Design and Sample

This descriptive cross-sectional study was conducted between April and June 2023 to examine the effects of social trauma and nutrition among individuals fourth-degree affected by the Kahramanmaraş-centered earthquakes. A total of 384 participants were included in the study. This number was determined through statistical power analysis and accepted as a sufficient sample size to represent the

population. Participants were selected from individuals aged 18 to 65 years. Age was classified into ten-year intervals to allow for analyzing the impact of age on post-traumatic changes in eating habits. The average age of participants was 28.4, and the median age group was 20–30.

Inclusion and Exclusion Criteria

The inclusion criteria for the study were as follows: participants should not have been physically present in the earthquake region but should have followed the events through mass media such as social media or television. Individuals without access to the online survey or who did not use social media were excluded from the study.

Sampling Method and Participant Recruitment

In this study, the sampling method used was convenience sampling. Participants were selected using a random sampling method via social media platforms. Survey links were shared in various demographic groups to ensure diverse participant representation. A voluntary consent form was provided to participants, and they were allowed to proceed with the survey only after giving their consent. The survey focused on evaluating the short-term impacts of the earthquake. For this reason, a one-week time frame was chosen to assess the immediate effects of the earthquake and minimize recall bias.

Data Security and Confidentiality Measures

During the online data collection process, Google Forms was used to ensure data security and confidentiality of participant information. All responses were collected anonymously, and data privacy was maintained throughout the study.

Advantages and Limitations of Online Data Collection

While the online data collection method offers the advantage of quickly accessing a large audience, it may introduce potential bias by excluding individuals without internet access or those who do not actively use social media. This limitation was considered in the study.

The survey was prepared based on scales used in similar studies in the literature and consisted of three main sections: demographic information, the impacts of the earthquake, and changes in participants' eating habits. Participants were instructed to focus on eating frequency, portion sizes, and overall diet composition when evaluating their diets. Guidance was provided to help participants better understand and report these changes. However, as the data on eating habits relied solely on participants' self-reports, the subjectivity of this method was acknowledged as a limitation of the study.

Data Collection Tools

Participants were asked questions about their sociodemographic characteristics and eating habits, and they were required to complete the Post-Earthquake Trauma Level Determination Scale (PETLDS). Developed by Tanhan and Kayri, this scale consists of 20 items across five sub-dimensions: behavioral problems, emotional constraint, affect, cognitive structure, and sleep problems. PTSD symptoms are rated on a five-point Likert scale (strongly disagree, somewhat disagree, moderately agree, strongly agree, and completely agree).

The Cronbach's alpha internal consistency coefficients for the sub-dimensions were calculated as follows: 0.64 for the first sub-dimension, 0.75 for the second, 0.61 for the third, 0.68 for the fourth, and 0.70 for the fifth. The overall internal reliability coefficient (Cronbach's alpha) for all PETLDS items was found to be 0.87. The minimum score possible on the scale is 20, while the maximum is 100, with higher scores indicating higher levels of impact from the earthquake.[14]

Statistical Analysis

The statistical analysis was performed using SPSS version 28.0. The normality of the data distribution was assessed using the Kolmogorov-Smirnov test. Differences between two measurements taken from the same participants were evaluated using the paired t-test, while differences between three or more groups were analyzed using ANOVA (Analysis of Variance). Continuous variables were described as mean±standard deviation, median, minimum, and maximum values, whereas categorical variables were expressed as frequency and percentage distributions. The data were analyzed at a 95% confidence interval, with p-values less than 0.05 considered statistically significant.

Results

This study, which examined the social trauma levels and changes in eating habits of individuals fourth-degree affected by the Kahramanmaraş-centered earthquakes, was completed with a total of 384 participants, 63% of whom were male, and 65.4% aged between 20 and 30. Among the participants, 65% followed earthquake-related news via the internet and social media platforms, while 35.7% reported watching such news for an average of 5–10 hours daily (Table 1).

A total of 51.6% of participants (n=198) reported changes in their eating habits following the earthquake, with 97.8% of these individuals indicating that the changes were negative. The details of changes in participants' eating habits are presented in Table 2.

Table 1. General characteristics and news follow-up status (n=384)

Parameters	n	%
Gender		
Male	242	63.0
Female	142	37.0
Age (year)		
<20	27	7.0
20–30	251	65.4
30–40	56	14.6
>40	50	13.0
Education level		
High school	82	21.4
Undergraduate	277	72.1
Postgraduate	25	6.5
Occupation		
Student	188	48.9
Freelance	40	10.4
Public employee	58	15.1
Worker	39	10.2
Private sector employee	31	8.1
Others	28	7.3
Relation with earthquake victim		
Family	15	3.9
Relative	32	8.3
Friend	122	31.8
Distant acquaintance	215	56.0
Media tool		
Television	65	16.9
Internet / social platform	250	65.1
Phone	69	18.0
News follow-up duration (hour)		
<5	119	31.0
5–10	137	35.7
10–15	62	16.1
>15	66	17.2

Table 2. Change in dietary patterns (n=198)

Parameters	n	%
Changes in the diet pattern		
Negative	194	97.8
Positive	4	2.2
Duration of the change		
Still ongoing	28	14.1
<1 week	32	16.2
>1 week	138	69.7
Changes in dietary pattern compared to before		
A little worse	166	83.8
Much worse	28	14.1
Better	4	2.1

Table 3. Changes in the number and duration of meals before and after the earthquakes

Parameters	Mean±SD	p
Main meals		
Before-number	1.34±0.47	<0.001
After-number	1.14±0.35	
Before-duration (minutes)	25.74±19.81	<0.001
After-duration (minutes)	24.39±22.65	
Snacks		
Before-number	2.01±1.57	<0.001
After-number	2.27±1.29	
Before-duration (minutes)	22.75±14.76	<0.001
After-duration (minutes)	15.68±10.15	

SD: Standard deviation

Changes in the number and duration of participants' meals before and after the earthquake are shown in Table 3. A statistically significant difference was found in the number and duration of meals after the earthquake compared to before (p<0.001).

According to Table 4, which presents post-earthquake trauma levels by gender, scores for the PETLDS sub-dimensions–behavioral problems, emotional constraint, cognitive structure, and sleep problems–were found to be statistically significantly higher in women compared to men (p<0.001).

Table 5 shows the post-earthquake trauma levels of participants based on their relationships with earthquake victims. Participants with family members affected by the earthquake had significantly higher scores for behavioral and sleep problems compared to others (p=0.007 and p=0.016, respectively).

Discussion

This study was conducted to evaluate the social trauma levels and changes in eating habits among individuals fourth-degree affected by the Kahramanmaraş-centered earthquakes. The findings revealed that the majority of participants (65.1%) followed earthquake-related news via the internet and social media platforms, with 35.7% reporting that they followed such news for 5–10 hours daily. These results highlight the critical role of social media and internet platforms in news dissemination. Research also indicates a significant relationship between individuals' work routines, education levels, and news consumption frequency. Although social media users primarily engage with these platforms for personal interaction, information-seeking, especially during crises, remains a prominent reason for use.[15]

Table 4. Post-earthquake trauma levels by gender

PETLDS sub-dimensions	Mean±SD	p
Behavioral problems		
Female	11.9±4.2	<0.001
Male	9.7±4.8	
Emotional limitation		
Female	16.2±5.7	<0.001
Male	13.9±6.4	
Affective		
Female	10.15±2.15	0.337
Male	9.92±2.38	
Cognitive structure		
Female	15.61±4.13	<0.001
Male	13.98±4.83	
Sleep Problems		
Female	9.45±4.11	<0.001
Male	7.49±4.33	

PETLDS: Post-Earthquake Trauma Level Determination Scale, SD: Standard deviation

Table 5. Post-earthquake trauma levels according to the relations with earthquake victims

PETLDS sub-dimensions	Mean±SD	p
Behavioral problems		
Family	12.87±4.69	0.007
Relative	9.7±4.8	
Friend	11.25±4.35	
Distant acquaintance	9.79±4.83	
Emotional limitation		
Family	17.53±6.33	0.101
Relative	15.72±5.93	
Friend	15.20±6.04	
Distant acquaintance	14.17±6.40	
Affective		
Family	11.13±2.03	0.119
Relative	9.84±2.63	
Friend	9.74±2.30	
Distant acquaintance	10.11±2.25	
Cognitive structure		
Family	15.87±5.53	0.102
Relative	14.38±4.40	
Friend	14.51±4.54	
Distant acquaintance	13.49±4.96	
Sleep problems		
Family	10.00±4.57	0.016
Relative	9.69±3.88	
Friend	8.57±4.40	
Distant acquaintance	7.67±4.30	

Natural disasters create profound effects across social, psychological, economic, political, and other domains. These events represent critical situations that affect various disciplines, each with unique priorities and approaches.[16]

Regarding the effects of earthquakes on nutrition, the study determined that the majority of participants (97.8%) experienced changes in their eating habits post-earthquake, with these changes being predominantly negative. Similar findings have been reported in the literature. In a cross-sectional study spanning two years, the pre- and post-earthquake eating habits of 105 middle-aged individuals were examined. It was observed that high-stress levels led to a decline in healthy eating habits, such as skipping breakfast.[17] Additionally, high-stress levels have been associated with both increased consumption (e.g., fats and sugars) and decreased consumption (e.g., total calorie intake, main meals, and vegetables).[18,19] These findings indicate that stress significantly impacts individuals' eating habits.

In this study, the relationship between the Post-Earthquake Trauma Level Determination Scale (PETLDS) and changes in participants' eating habits was analyzed. The analyses revealed that particularly the sub-dimensions of behavioral problems and sleep problems were associated with changes in eating habits. However, no significant relationship was found in other sub-dimensions, such as emotional constraint, cognitive structure, and affect. This result aligns with the literature highlighting the behavioral and physiological effects of stress, particularly its adverse impact on eating habits. In this context, changes in participants' eating habits are considered a significant factor influencing post-earthquake trauma levels.

Data on the duration of dietary changes are particularly noteworthy. While 69.7% of participants reported changes in their eating habits lasting longer than a week, 14.1% stated that these changes were ongoing. These findings suggest that dietary changes following an earthquake are not limited to short-term effects but can persist long-term and in a negative direction. The impact of traumatic events such as earthquakes on individuals' eating patterns poses risks not only for malnutrition but also for psychological and physiological health outcomes. Supporting studies in the literature emphasize the critical importance of nutrition in disaster scenarios, noting that events such as earthquakes can significantly affect individuals' eating behaviors and dietary patterns.[20] These results underscore the necessity of addressing changes in eating habits during the post-disaster period.

It is well known that individuals often experience stress, anxiety, and uncertainty following disasters such as natural catastrophes. These situations negatively affect

individuals' psychological health, leading to notable changes in eating habits. The destruction and losses experienced after an earthquake trigger psychological trauma, making it difficult for individuals to establish a healthy lifestyle routine. Therefore, developing an effective approach to address post-earthquake psychological trauma is of paramount importance.[21,22]

The literature highlights that pre-existing mental health conditions, such as PTSD or depression, significantly increase the risk of adverse psychological outcomes following a traumatic event.[23–26] This underscores the dual physical and psychological impacts of disasters like earthquakes and the critical need for post-trauma support.

This study found significant differences in trauma levels between genders after the earthquake. Analyses revealed that women scored statistically higher than men in various trauma sub-dimensions, including behavioral problems, emotional constraint, cognitive structure, and sleep disturbances (Table 4). These findings are consistent with previous research. For example, a study on an earthquake in Italy identified a significant relationship between gender, age, and post-traumatic stress levels.[27] Similarly, research conducted on university students following the 1999 Marmara Earthquake found that female students were significantly more affected than their male counterparts.[28]

The results of this study indicate that gender influences post-earthquake trauma symptoms differently, with women experiencing more pronounced psychological effects. This suggests that women are more vulnerable to the impacts of disasters, exhibit stronger negative emotional responses, and require longer recovery periods. Therefore, recognizing gender differences in post-disaster psychosocial interventions may be crucial in mitigating trauma effects.

When examining trauma levels based on participants' relationships with earthquake victims, findings revealed that individuals with close family ties to victims exhibited significantly higher behavioral and sleep-related problems than other groups. This aligns with previous studies indicating that those who lose close relatives in earthquakes are at a heightened risk of developing PTSD.[24,29,30] However, no significant differences were found in other sub-dimensions, such as emotional constraint, affect, or cognitive structure. Similarly, this study determined that participants' relationships with victims did not significantly influence these PETLDS (Post-Traumatic Impact and Trauma Level Scale) sub-dimensions.

These findings suggest that psychological and emotional responses to trauma vary among individuals. The loss of loved ones in disasters increases the likelihood of both physical and mental health issues, emphasizing the need for professional support in such cases, as noted in the literature.[31] Consequently, assessing individuals' relationships with earthquake victims and their personal losses is essential for developing effective post-disaster support strategies.

Limitations

The study's limitations include the inclusion of only fourth-degree affected individuals, excluding those with first-, second-, or third-degree impacts, which may result in a lack of insight into the varied experiences and effects among these groups. Additionally, collecting data online excluded individuals who are illiterate or unable to use technological devices, potentially introducing bias into the sample. These limitations reduce the generalizability of the findings and indicate that the data reflect the experiences of only a specific group. Future studies should consider using diverse data collection methods to reach a broader demographic range.

Conclusion

This study demonstrates that social trauma levels were high among participants following the Kahramanmaraş-centered earthquakes, and this trauma negatively impacted individuals' eating habits. The finding that 97.8% of participants reported changes in their eating habits post-earthquake, with these changes being predominantly negative, underscores the significance of the results. Additionally, 69.7% of participants indicated that these changes lasted longer than a week, and 14.1% stated that the changes were still ongoing, highlighting the long-term effects of the trauma.

The study also found that female participants experienced significantly higher trauma levels than male participants, and those with close family connections to earthquake victims exhibited higher trauma levels in sub-dimensions such as behavioral and sleep problems.

These findings reveal that disasters like earthquakes have profound effects not only on physical health but also on psychological well-being and eating habits. Therefore, supporting individuals fourth-degree affected by such disasters with healthy eating guidance and addressing their psychological and emotional needs is critical for accelerating recovery and protecting public health.

It is recommended that post-disaster intervention programs combine psychological support, education, and community-based solutions to effectively address these challenges.

Disclosures

Ethics Committee Approval: The study was approved by the Marmara University Faculty of Health Sciences Non-interventional Clinical Research Ethics Committee (no: 2023/47, date: 30/03/2023).

Authorship Contributions: Concept – A.H.İ., C.T., Ö.Ç.; Design – C.T., Ö.Ç.; Supervision – A.H.İ.; Data collection and/or processing – C.T., Ö.Ç.; Data analysis and/or interpretation – A.H.İ.; Literature search – A.H.İ., C.T., Ö.Ç.; Writing – A.H.İ., C.T., Ö.Ç.; Critical review – A.H.İ.

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References

1. Afet ve Acil Durum Yönetim Başkanlığı. Açıklamalı Afet Yönetimi Terimleri Sözlüğü. https://www.afad.gov.tr/aciklamali-afet-yonetimi-terimleri-sozlugu. Accessed Feb 10, 2025.
2. World Health Organization. Guideline: Assessing and managing children at primary health-care facilities to prevent overweight and obesity in the context of the double burden of malnutrition. https://iris.who.int/bitstream/handle/10665/259133/9789241550123-eng.pdf?sequence=1. Accessed Feb 10, 2025.
3. Akyılmaz D, Karka O. Afetlerde psikolojik ilkyardım. İstanbul: AFAD Yayınları; 2011.
4. Mercimek Ö. Seismic failure modes of masonry structures exposed to Kahramanmaraş earthquakes (Mw 7.7 and 7.6) on February 6, 2023. Eng Fail Anal 2023;151:107422.
5. Houston JB, Spialek M, First J. Disaster media effects: A systematic review and synthesis based on the differential susceptibility to media effects model. J Commun 2018;68:734–57.
6. Amerikan Psikiyatri Birliği. Mental bozuklukların tanısal ve sayımsal el kitabı, beşinci baskı (DSM-5). Köroğlu E, ed. Ankara: Hekimler Yayın Birliği; 2013.
7. Nakajima H, Shiga T, Hata Y. Systems health care: The aspect of home and medical care. 2012 IEEE International Conference on Systems, Man, and Cybernetics (SMC) 2012:2616–21.
8. Cankardaş S, Sofuoğlu Z. Post-traumatic stress disorder symptoms and their predictors in earthquake or fire survivors. [Article in Turkish] Turk Psikiyatri Derg 2019;30:151–6.
9. Azzollini SC, Depaula PD, Cosentino AC, Bail Pupko V. Applications of psychological first aid in disaster and emergency situations: Its relationship with decision-making. Athens J Soc Sci 2018;5:201–13.
10. Ari M, Kokaçya MH, Çöpoğlu ÜS, Yengil E, Kivrak Y, Şahpolat M, et al. Stress reaction, anxiety and depression after bomb attacks in Reyhanlı on the Syria-Türkiye border. Anatol J Psychiatry 2016;17:203–8.
11. Etiler N. Afetlerde sık karşılaşılan sorunlar. In: Karaböcüoğlu M, Yılmaz HL, Duman M, eds. Çocuk Acil Tıp Kitabı. İstanbul: İstanbul Tıp Kitabevi; 2012. p. 1–15.
12. World Health Organization (WHO). (2018). Natural Disasters Report.
13. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5). 5th ed. Arlington (VA): American Psychiatric Association; 2013.
14. Tanhan F, Kayri M. The validity and reliability work of the scale that determines the level of the trauma after the earthquake. Educ Sci Theory Pract 2013;13:1021–5.
15. Altun F. Psychosocial services in disasters: A comparative analysis of the Marmara and Van earthquakes. [Article in Turkish] Istanbul Sabahattin Zaim Univ J Soc Sci 2016;4:183–97.
16. Güreşçi E. Kahramanmaraş depremi sonrası yeni bir tartışma konusu olarak deprem göçü. In: Öztürk M, Kırca M, eds. Kahramanmaraş merkezli depremler sonrası için akademik öneriler. İstanbul: Özgür Yayınları; 2023. p. 47–60.
17. Kuijer RG, Boyce JA. Emotional eating and its effect on eating behaviour after a natural disaster. Appetite 2012;58(3):936–9.
18. O'Connor DB, Jones F, Conner M, McMillan B, Ferguson E. Effects of daily hassles and eating style on eating behavior. Health Psychol 2008;27(1):S20–31.
19. Wardle J, Steptoe A, Oliver G, Lipsey Z. Stress, dietary restraint and food intake. J Psychosom Res 2000;48:195–202.
20. Aydın M. Understanding disasters and mass trauma within the context of an earthquake. [Article in Turkish] Turk J Neurosurg 2023;33:165–9
21. Başterzi AD. Kitlesel travmayı anlamak, anlamlandırmak. In: Yüksel Ş, Başterzi AD, eds. Kitlesel travmalar ve afetlerde ruhsal hastalıkları önleme, müdahale ve sağaltım kılavuzu. Ankara: Türkiye Psikiyatri Derneği Yayınları; 2021. p. 3–10.
22. Aker T, Yilmaz B, Danisman GI, Karanci N. Capacity building for disaster psychosocial services: A collaborative project. Eur J Psychotraumatol 2011;2:1.
23. Salcioglu E, Basoglu M, Livanou M. Long-term psychological outcome for non-treatment-seeking earthquake survivors in Turkey. J Nerv Ment Dis 2003;191(3):154–60.
24. Başoğlu M, Salcioğlu E, Livanou M. Traumatic stress responses in earthquake survivors in Turkey. J Trauma Stress. 2002;15(4):269–76.
25. Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. J Consult Clin Psychol 2000;68(5):748–66.

26. Breslau N, Chilcoat HD, Kessler RC, Davis GC. Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit area survey of trauma. Am J Psychiatry 1999;156(6):902–7.
27. Dell'Osso L, Carmassi C, Massimetti G, Stratta P, Riccardi I, Capanna C, et al. Age, gender and epicenter proximity effects on post-traumatic stress symptoms in L'Aquila 2009 earthquake survivors. J Affect Disord 2013;146(2):174–80.
28. Baloğlu M, Harris MB, Karagözoğlu C. The psychological effects of an earthquake on Turkish college students. Hasan Ali Yücel Egitim Fak Derg 2005;2:125–36.
29. Livanou M, Başoğlu M, Salcioğlu E, Kalendar D. Traumatic stress responses in treatment-seeking earthquake survivors in Turkey. J Nerv Ment Dis 2002;190(12):816–23.
30. Goenjian AK, Najarian LM, Pynoos RS, Steinberg AM, Manoukian G, Tavosian A, et al. Posttraumatic stress disorder in elderly and younger adults after the 1988 earthquake in Armenia. Am J Psychiatry 1994;151(6):895–901.
31. Sezgin U, Yüksel Ş, Topçu Z, Dişcigil AG. When is traumatic grief diagnosed? When should the treatment begin? Klin Psikiyatr Derg 2004;7:167–75.