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REVIEW ARTICLE / DERLEME YAZISI

The Relationship Between Earthquake-Related Secondary Traumatic Stress, Earthquake Anxiety, and Depression: Traditional Review

Deprem Kaynaklı İkincil Travmatik Stres ile Deprem Kaygısı ve Depresyon Arasındaki İlişki: Geleneksel Derleme

Cem Keleş[1], Mehmet Çakıcı[2]

Abstract:

Earthquakes are complex disasters that cause not only physical destruction but also significant psychological effects. While individuals directly affected often experience post-traumatic stress disorder, anxiety, and depression, those indirectly exposed to earthquake-related news or narratives may develop secondary traumatic stress. This study employed a traditional literature review to examine the relationship between earthquake-related secondary traumatic stress, earthquake anxiety, and depression. The review, conducted through Google Scholar, DergiPark Academic, PubMed, and the National Thesis Center using the keywords "earthquake," "secondary traumatic stress," "earthquake anxiety," and "depression," is based on seven studies conducted in Turkey. Findings indicate significant positive relationships among secondary traumatic stress, earthquake anxiety, and depression. Secondary traumatic stress was found to exacerbate both anxiety and depression, with all three variables mutually influencing each other. Post-disaster factors such as uncertainty, loss of control, expectation of future earthquakes, and witnessing the experiences of affected individuals can contribute to psychological distress even in those not directly affected. These findings highlight the need for post-disaster psychosocial interventions to address both directly and indirectly affected populations.

Keywords: Earthquake, Secondary traumatic stress, Earthquake anxiety, Depression.

[1]PhD. Student, Cyprus Health and Social Sciences University, Faculty of Social and Humanities Sciences, Departmentof Psychology, Güzelyurt, TRN Cyprus, E-mail: cemkees34@gmail.com, Orcid Id: 0009-0003-2636-0899

[2]Prof. Dr., Cyprus Health and Social Sciences University, Faculty of Social and Humanities Sciences, Department of Psychology, Güzelyurt, TRN Cyprus, E-mail: meh_cakici@yahoo.com, Orcid Id: 0000-0002-7043-183X

Address of Correspondence/Yazışma Adresi: Cem Keleş, Cyprus Health and Social Sciences University, Faculty of Social and Humanities Sciences, Department of Psychology, Güzelyurt, TRN Cyprus, E-mail: cemkees34@gmail.com

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Öz:

Depremler, yalnızca fiziksel yıkıma yol açan jeolojik olaylar değil; aynı zamanda bireyler ve toplum üzerinde önemli psikolojik etkiler oluşturan çok boyutlu afetlerdir. Depremin doğrudan etkilediği kişilerde travma sonrası stres bozukluğu (TSSB), kaygı ve depresyon gibi ruhsal sorunlar yaygın olarak görülürken; afet bölgesinde bulunmayan ancak depremle ilgili haberler, görüntüler veya travmatik anlatımlara maruz kalan bireylerde ikincil travmatik stres gelişebilmektedir. Bu çalışmada, geleneksel derleme yöntemi kullanılarak deprem kaynaklı ikincil travmatik stres ile deprem kaygısı ve depresyon arasındaki ilişki literatür doğrultusunda incelenmiştir. Literatür taraması, Google Scholar, DergiPark Akademik, PubMed ve Ulusal Tez Merkezi veri tabanları üzerinden yapılmış ve çalışmada "deprem", "ikincil travmatik stres", "deprem kaygısı" ve "depresyon" anahtar kelimeleri kullanılmıştır. Çalışmadan elde edilen bulgular, Türkiye'de gerçekleştirilen yedi araştırmaya dayanmaktadır. Araştırmalar, deprem kaynaklı ikincil travmatik stres ile deprem kaygısı ve depresyon arasında anlamlı ve pozitif yönlü ilişkiler olduğunu göstermektedir. Ayrıca, ikincil travmatik stresin hem deprem kaygısını hem de depresyonu güçlendirdiği ve bu üç değişkenin birbirini karşılıklı olarak etkilediği saptanmıştır. Özellikle afet sonrası dönemde yaşanan belirsizlik, kontrol kaybı, tekrar deprem olacağı beklentisi, depremi yaşamış bireylerin yaşantılarına tanıklık etme gibi durumlar; depremi doğrudan yaşamamış bireylerde de deprem kaynaklı travmatik stres, deprem kaygısı ve depresyonun oluşmasına katkıda bulunabilmektedir. Dolayısıyla, ikincil travmaya maruz kalan bireylerde kaygı ve depresyon düzeylerinin artması olasıdır. Bu nedenle, afet sonrası psikososyal müdahalelerde yalnızca doğrudan etkilenen bireyler değil; travmaya dolaylı olarak maruz kalan toplum kesimleri de psikolojik destek programlarına dahil edilmelidir.

Anahtar Kelimeler: Deprem, İkincil travmatik stres, Deprem kaygısı, Depresyon.

Introduction

Natural disasters are sudden, destructive events that occur without human intervention and negatively impact human life, the environment, and economic systems (UNDRR, 2025). These disasters are observed in various categories, including geological (earthquakes, volcanoes), meteorological (hurricanes, floods), climatological (droughts), biological (epidemic diseases), and hydrological (floods). Each type of disaster occurs at different frequencies and intensities depending on the region's geographical and climatic characteristics (CRED, 2025).

Earthquakes, which hold an important place among natural disasters, are defined as the release of energy resulting from fractures in the Earth's crust caused by tectonic movements or volcanic activities, which then spread through seismic waves, shaking the surrounding environment and the Earth's surface violently (AFAD, 2025). Earthquakes mostly occur along fault lines and cause significant tremors in the Earth's crust (Stein and Wysession, 2003). The most common types of earthquakes are tectonic earthquakes observed at plate boundaries (Bozkurt, 2001).

In regions like Turkey, where active fault lines are densely located, earthquakes occur both frequently and with considerable destructive power. Fault lines across Anatolia have caused major earthquakes for centuries (Bozkurt, 2001). Turkey's geological structure, topography, and climate conditions pose a high risk for various disasters, especially earthquakes; additionally, rapid migration since the 1950s, unregulated construction, uncontrolled urbanization, and industrialization processes have made cities more vulnerable and less resilient to both natural and human-made disasters (TBMM, 2021; AFAD, 2022).

In this context, the earthquakes centered in Gölcük district of Kocaeli province and Düzce in 1999 caused significant loss of life and property; the earthquakes centered in Pazarcık and Elbistan districts of Kahramanmaraş province in 2023 resulted in the rupture of a segment spanning hundreds of kilometers and were described as the 'disaster of the century.' These earthquakes led not only to physical destruction but also to severe damage and economic, social, and environmental losses (AFAD, 2022, 2023, 2025); they left millions of people homeless and triggered intense internal migration (Olguner-Eker et al., 2025).

Earthquakes have widespread impacts beyond physical destruction, affecting social, economic, and psychological areas. In the aftermath of major earthquakes, crises such as infrastructure system failures, housing problems, and difficulties accessing healthcare services emerge (Tierney, 2007). Post-disaster uncertainty, losses, and housing issues reduce individual resilience (Bonanno et al., 2010) and create a foundation for various psychological problems in individuals, such as acute stress responses, post-traumatic stress disorder (PTSD), and feelings of loss (Norris et al., 2002; Kesgin and Karaaziz, 2025).

Research shows that individuals living in disaster-affected areas commonly experience PTSD, depression, and anxiety disorders. Especially vulnerable groups such as children, women, and the elderly have an increased need for psychological support and intervention (Bulut, 2023; Olguner-Eker et al., 2025). After large-scale destructive disasters like earthquakes, the likelihood of psychiatric conditions such as PTSD, anxiety disorders, and major depressive disorder significantly increases. While the psychological effects of disasters vary depending on individual characteristics, some individuals recover more quickly and resiliently, whereas others may experience longer-lasting and more profound impacts (Emanuel and Ursano, 2020).

The psychological reactions observed after a disaster may spontaneously decrease within a few weeks in some individuals; however, in some individuals, these symptoms can become permanent (Kidson et al., 1993). Especially, the disruption of the fundamental belief that

the world is a safe place can lead to feelings of sensitivity, helplessness, and hopelessness in individuals (Schwerdtfeger and Goff, 2007). The presence of traumatic symptoms for less than a month is defined as acute stress disorder; exceeding one month is called Post-Traumatic Stress Disorder (PTSD) (Erol and Öner, 1999). The most common psychological problems after an earthquake include PTSD, earthquake anxiety, and depression (Alipour and Ahmadi, 2020).

Post-Traumatic Stress Disorder is a serious psychiatric disorder characterized by recurring memories, avoidance behaviors, and hyperarousal symptoms that develop after events threatening an individual's physical integrity and exceeding their coping capacity (APA, 2014). These symptoms significantly impair an individual's daily functioning and quality of life (Schwerdtfeger and Goff, 2007; Emanuel and Ursano, 2020). Trauma is not limited to individuals directly exposed; it can also occur in individuals indirectly exposed to traumatic events (Kaitz et al., 2009). Traumatic stress is addressed under two categories: primary and secondary traumatic stress. Primary traumatic stress refers to the stress responses observed in individuals directly exposed to the event. In contrast, secondary traumatic stress refers to the stress responses seen in individuals who are not directly exposed to the trauma but are indirectly affected by others' traumatic experiences (Demirel and Çakıcı, 2025; Saylam and Sapancı, 2025).

Secondary traumatic stress is defined as the set of emotions and behaviors that arise as a result of knowing about someone else's trauma, listening to the details of the event, or interacting with individuals who have experienced trauma (Figley, 1995). Professionals who witness traumatic events or assist individuals affected by trauma, such as search and rescue personnel, healthcare providers, and those providing psychosocial support, as well as relatives of trauma survivors, are at high risk for secondary traumatic stress. Research in this context shows that stress responses related to secondary trauma can be observed in these groups (Akman, 2023; Onat et al., 2025). This situation is particularly common after large-scale earthquake disasters (Kaitz et al., 2009).

The sudden and unpredictable nature of earthquakes can lead to lasting trauma in affected communities (Çınaroğlu et al., 2025). While the effects on individuals who directly experience the earthquake have been more extensively studied, the psychological burdens of those living outside earthquake zones and only indirectly affected by the disaster have not been adequately addressed. However, understanding the broad societal impacts after an earthquake is extremely important for planning disaster response and mental health services (Morganstein and Ursano, 2020).

Anxiety about earthquakes is a psychological condition characterized by a person's constant worry, concern, and unease about the likelihood of an earthquake, its severity, and possible consequences. This anxiety can manifest through cognitive symptoms such as being constantly on edge, experiencing a loss of control, and perceiving minor tremors as earthquakes; physical reactions like palpitations, shortness of breath, sweating, and dizziness; and behavioral signs such as avoiding high-rise buildings or not wanting to be alone (Çapar and Yelboğa, 2025). Factors that increase earthquake anxiety include previous earthquake experiences, experiences of loss and trauma, exposure to intense earthquake news, low tolerance for uncertainty, and a high overall level of anxiety (Uçar-Çabuk, 2023).

Earthquakes can damage individuals' daily routines, sense of security, and sources of social support, leading to long-term depressive symptoms. In this context, depression caused by earthquakes manifests with symptoms such as hopelessness, apathy, loss of energy, insomnia, changes in appetite, difficulty concentrating, and withdrawal from social relationships; it can also occur alongside PTSD (Gökkaya et al., 2025; Cansel et al., 2025).

Therefore, it is necessary to carefully evaluate the secondary psychological effects on individuals who are not directly affected by the earthquake. Research shows that individuals experiencing secondary traumatic stress related to earthquakes commonly suffer from earthquake anxiety and depression, but it also indicates that secondary traumatic stress is one of the least studied areas in earthquake trauma research (Akman, 2023; Gökçen et al., 2024; Kara-Nariçi, 2024; Verimli, 2024; Çınaroğlu et al., 2025; Onat et al., 2025; Yavuzcan, 2025). The need for multidisciplinary research to comprehensively assess the sudden and destructive physical damages, economic and social losses, and psychological effects caused by earthquakes is increasing (TBMM, 2021). This study aims to examine the relationship between secondary traumatic stress caused by earthquakes, earthquake anxiety, and depression based on research conducted in Turkey.

Method

In this study, the traditional review method, which involves compiling and evaluating previous academic studies on a specific topic without a systematic approach, was used. The traditional review is an important method for comprehensively collecting, examining, and interpreting the existing knowledge in a particular field (Sutton et al., 2019).

For the research, a literature review was conducted using Google Scholar, DergiPark Academic, PubMed, and the YÖK National Thesis Center databases. During the search process, the keywords 'earthquake,' 'secondary traumatic stress,' 'earthquake anxiety,' and 'depression' were used.

The criteria for inclusion in the study are specified below:

1) The research must be a published research article in a national or international peer-reviewed journal or have the quality of a master's, doctoral, or specialization thesis.

2) The fact that the study addresses the topics of earthquake-related secondary traumatic stress, earthquake anxiety, and depression together,

3) The fact that the sample of the research was selected from Turkey.

There is no date restriction on the inclusion criteria, and studies that do not meet them have been excluded. The study's flowchart is shown in Figure 1.

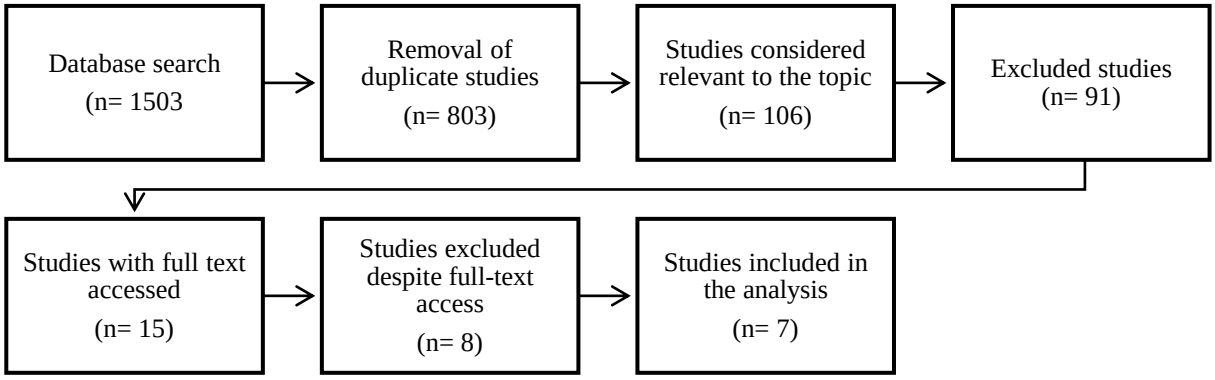

Figure 1. *Workflow Diagram*

According to the established criteria, 1,503 studies were identified in the databases, 106 were deemed relevant to the subject, and 7 were ultimately included in the compilation.

Findings

There are numerous studies in the literature that investigate natural disasters such as earthquakes. However, the literature generally targets individuals who directly experience earthquakes. Specifically, studies conducted in Turkey that examine the relationship between secondary traumatic stress caused by earthquakes, earthquake-related anxiety, and depression are limited. Therefore, in the literature review, seven (7) studies conducted in Turkey were identified as appropriate for the research purpose. The studies included in the research are summarized in Table 1.

Table 1. *Studies Included in the Research*

Author, Year	Type	Model	Sample	Scales	Result
Akman, 2023	Medical Specialization Thesis	Cross-sectional study	632 healthcare workers are providing services to earthquake victims	Secondary Traumatic Stress Scale (STSS), Depression Anxiety Stress Scale (DASS-21)	A strong relationship was found between secondary traumatic stress, depression, and anxiety.
Gökçen et al., 2024	Research Article	Online survey model	436 social media users who had not experienced an earthquake	Secondary Traumatic Stress Scale for Social Media Users (STSS-SM)	Secondary traumatic stress, depression, and anxiety
Kara-Nariçi, 2024	Medical Specialization Thesis	Cross-sectional study	133 earthquake survivors and 127 rescue-aid personnel who served during the earthquake	Clinician-Administered PTSD Scale (CAPS-5), Depression Anxiety Stress Scale (DASS-21)	Primary traumatic stress, anxiety, and depression were high; however, the results are essential for both groups.
Verimli, 2024	Master's Thesis	Cross-sectional study	115 psychologists are working with earthquake survivors	Secondary Traumatic Stress Scale (STSS), Brief Symptom Inventory (BSI)	A positive and significant relationship was observed between secondary traumatic stress and psychological symptoms (anxiety, depression, etc.).
Çınaroğlu vd., 2025	Research Article	Cross-sectional study	Deprem yaşamamış, farklı illerde yaşayan 721 gönüllü birey	Beck Depresyon ve Anksiyete Envanterleri (BDI-II, BAI), DSM-5 için PTSD Kontrol Listesi (PCL-5)	A significant relationship was found between STSS symptoms, anxiety, and depression.
Onat et al., 2025	Research Article	Relational screening model	243 healthcare workers aged 18–65 working with earthquake survivors	Brief Symptom Inventory (BSI), Secondary Traumatic Stress Scale (STSS)	Anxiety, depression, and the presence of secondary traumatic stress negatively affected coping skills.
Yavuzcan, 2025	Master's Thesis	Survey model	139 healthcare workers aged 18–60 working with earthquake survivors	Secondary Traumatic Stress Scale (STSS), Depression Anxiety Stress Scale (DASS-21)	Depression and anxiety were associated with secondary traumatic stress.

Of the studies listed in Table 1, 7 (Akman, 2023; Gökçen et al., 2024; KaraNariçi, 2024; Verimli, 2024; Çınaroğlu et al., 2025; Onat et al., 2025; Yavuzcan, 2025) were included in the review. Three of these are research articles, two are medical specialty theses, and two are master's theses. Four were conducted with a cross-sectional design, two used a survey model, and one employed an online questionnaire model. The samples consist of individuals who are professionally in contact with earthquake victims (healthcare workers or rescue aid personnel) or individuals who have not experienced the earthquake. The studies used valid and reliable scales to assess secondary traumatic stress (STS, STSS-SM), depression and anxiety (BDI, BAI, DASS-21, and subscales of KSE), and PTSD symptoms (CAPS-5, PCL-5). The results of the studies indicate that there is a significant and positive relationship between earthquake-related secondary trauma, earthquake anxiety, and depression, and that exposure to earthquake-related secondary trauma increases symptoms of PTSD, depression, and anxiety in individuals. The findings obtained from the studies are summarized below.

In Akman's (2023) study, 632 healthcare workers serving earthquake victims at a university hospital were assessed for secondary traumatic stress, depression, and anxiety levels. According to the research findings, the level of secondary traumatic stress was higher among those who had previously been exposed to a disaster and those who had a relative in the earthquake zone. Depression scores were higher in individuals with a relative in the earthquake zone, those who lost a close one due to the earthquake, and those who felt the need for psychosocial support after the earthquake. Anxiety scores increased among those who had previously been exposed to a disaster and those with a relative in the earthquake zone. Additionally, among female participants, those who lost a close one due to the earthquake and those who felt the need for psychosocial support after the earthquake showed a significant and strong relationship between levels of secondary traumatic stress, depression, and anxiety.

Gökçen and colleagues (2024) conducted a study on 436 university students to examine the relationship between secondary traumatic stress symptoms observed in social media users after an earthquake and social media addiction, depression, anxiety, and stress levels. The study shows that secondary traumatic stress is related to social media addiction, depression, anxiety, and stress levels. Additionally, multiple linear regression analysis reveals that female gender, social media addiction, and anxiety levels predict secondary traumatic stress, explaining 43.3% of the total variance. Symptoms of secondary traumatic stress were found to be higher in individuals who follow earthquake-related news on social media and those who use Twitter to access information about the earthquake.

In the study by Kara Nariçi (2024), individuals who experienced primary trauma (133 earthquake survivors) and secondary trauma (127 rescue aid personnel) after the earthquake were compared in terms of post-traumatic stress disorder (PTSD) symptoms, suicide risk, depression, and anxiety symptoms. As a result, it was found that participants directly exposed to trauma had higher levels of PTSD symptoms, depression, and anxiety compared to the secondary trauma group. However, those exposed to secondary traumatic stress showed higher levels of the 'negative self' dimension. Additionally, across the entire sample, it was observed that women and low-income individuals experienced more intense PTSD symptoms, the rate of having suicidal thoughts after the earthquake was 18.1%, and being young, single, or alone was associated with a higher likelihood of suicide.

In Verimli's (2024) study, the secondary traumatic stress levels and psychological symptoms of 115 psychologists working with individuals who experienced an earthquake were examined. The study found that psychologists with over 10 years of professional experience who worked with individuals affected by the earthquake exhibited lower levels of psychological symptoms, anxiety, and negative self-perception; psychologists who did not go to the disaster zone showed higher levels of hostility compared to their colleagues who did go to the area; there was a negative and significant relationship between avoidance behavior and the duration of work related to the earthquake; among psychologists working in the disaster zone, a positive and significant relationship was observed between the time spent in the field and secondary traumatic stress levels; psychologists whose specialty is clinical psychology developed lower levels of psychological symptoms, anxiety, and depression compared to colleagues in other fields. Additionally, providing psychotherapy support was found to have a preventive effect on secondary traumatic stress and psychological symptoms, and a positive and significant relationship was observed between psychologists' secondary traumatic stress levels and their psychological symptom levels.

Çınaroğlu and colleagues (2025) conducted a study with 721 volunteer individuals, most of whom live in Istanbul but also include participants from across Turkey, who had not directly experienced the earthquake. The research findings reveal that even those not directly affected by the earthquake experienced significant psychological distress. 51.9% of participants reported high levels of psychological distress, 24% met criteria for PTSD, 30% showed moderate to severe depression symptoms, and 28% experienced noticeable anxiety. Additionally, higher income and education levels were associated with better mental health outcomes. Individuals with higher education levels had a lower risk of PTSD and exhibited fewer depression symptoms. Similarly, those with higher income levels had lower depression scores and fewer PTSD symptoms. As age increased, well-being levels improved, and PTSD symptoms decreased.

Onat and colleagues (2025) examined the relationship between secondary traumatic stress, anxiety, depression, and coping styles among healthcare workers after an earthquake, involving 243 healthcare workers working in a children's hospital. The study found that anxiety, depression, and secondary traumatic stress had a positive correlation with ineffective coping styles and a negative correlation with effective coping styles. It was observed that younger age and female gender were associated with higher levels of anxiety and depression; meanwhile, secondary traumatic stress was more common among those involved in the treatment of earthquake-affected patients. Regression analysis revealed that ineffective coping styles were related to anxiety, depression, and secondary traumatic stress. Additionally, the time spent caring for earthquake-affected patients was associated with secondary traumatic stress, and the loss of a loved one was linked to anxiety.

Yavuzcan (2025) examined the psychological resilience, insomnia, depression, and anxiety levels of 139 mental health workers responsible for disasters in the context of neuroscience. According to the research findings, a positive and significant relationship was found between secondary traumatic stress and anxiety, stress, and insomnia. On the other hand, there is a negative and significant relationship between secondary traumatic stress and psychological resilience. In the regression analyses, depression, anxiety, and insomnia significantly predicted secondary traumatic stress; however, stress and psychological resilience did not significantly predict secondary traumatic stress. Additionally, no significant difference was found in secondary traumatic stress levels based on gender.

Discussion

In this study, the relationship between secondary traumatic stress caused by earthquakes and earthquake anxiety and depression was examined. The findings of the research indicate that there is a significant and positive relationship between earthquake-related secondary traumatic stress and earthquake anxiety and depression (Akman, 2023; Gökçen et al., 2024; KaraNariçi, 2024; Verimli, 2024; Çınaroğlu et al., 2025; Onat et al., 2025; Yavuzcan, 2025).

Research findings indicate that earthquakes have significant psychological effects on indirect victims. This highlights the broader societal impacts of natural disasters. Verimli (2024) observed a positive and significant relationship between secondary traumatic stress levels caused by earthquakes and psychological symptom levels among psychologists. Çınaroğlu and colleagues (2025) revealed that individuals not directly affected by the earthquake also experienced considerable psychological distress, with more than half of the participants experiencing high levels of psychological distress, and about one-third experiencing PTSD, anxiety, and moderate to severe depression. KaraNariçi (2024) found that those directly exposed to the earthquake exhibited higher levels of PTSD symptoms, depression, and earthquake-related anxiety compared to the secondary trauma group; however, those exposed to secondary traumatic stress from the earthquake had higher negative self-perception. Additionally, in both groups, young age, being single, and being alone increased the likelihood of post-earthquake suicide. Yavuzcan (2025) identified a positive and significant relationship between secondary traumatic stress caused by the earthquake and daily stress and insomnia. Furthermore, insomnia significantly predicted secondary traumatic stress related to the earthquake, while daily stress did not.

Family members living far from the earthquake epicenter can be exposed to the effects of the disaster through various connections they establish with victims. This indirect exposure can lead to a range of psychological reactions, including anxiety, stress, depression, and PTSD symptoms (Oishi et al., 2015). In fact, earthquakes can create a sense of vulnerability and fear, affecting the mental well-being of individuals who are not physically present at the scene (Perloff, 1983). Additionally, PTSD that develops in family members of earthquake victims can play a decisive role in the development of mental disorders (Cerdá et al., 2013; Olguner-Eker et al., 2025). The research findings highlight the importance of community preparedness for disasters and post-disaster psychosocial interventions. Akman (2023) found a significant and high-level relationship between secondary traumatic stress, earthquake-related anxiety, and depression levels among those who lost loved ones due to the earthquake. Furthermore, individuals in the earthquake zone with relatives were found to have higher levels of secondary traumatic stress, earthquake-related anxiety, and depression. In comparison, those who lost a loved one due to the earthquake had higher depression levels. In the studies by Onat and colleagues (2025), the loss of a relative was associated with earthquake-related anxiety.

Research findings indicate that individuals who are not directly affected by earthquakes—despite their exposure being indirect—experience significant earthquake-related anxiety and stress due to perceived threats on social media. Gökçen and colleagues (2024) reported that secondary traumatic stress caused by earthquakes is related to social media addiction and stress levels; they also found that social media addiction predicts secondary traumatic stress related to earthquakes. Additionally, they discovered that symptoms of secondary traumatic stress from earthquakes are higher in those who follow earthquake-related news on social media and use Twitter to access information about earthquakes.

In natural disasters such as earthquakes, many professional groups are simultaneously active in the field. Search and rescue teams, technical experts such as firefighters and miners, security units like police and gendarmerie, healthcare workers including doctors, nurses, and paramedics, psychosocial and educational support professionals such as mental health specialists and teachers, as well as specialists in their fields like lawyers and engineers, and volunteers can all play active roles in the post-disaster aid processes. Research findings indicate that professionals or volunteer support workers involved in aid processes are indirectly affected by the earthquake in their interactions during these efforts. Onat and colleagues (2025) found that secondary traumatic stress symptoms related to the earthquake are common among those involved in treating earthquake-affected patients. Akman (2023) found that nurses have high levels of secondary traumatic stress caused by the earthquake; additionally, it was determined that there is a significant and strong relationship between secondary traumatic stress, depression, and earthquake-related anxiety levels among healthcare workers whose workload has increased due to the earthquake.

Among the risk factors for secondary traumatic stress caused by earthquakes are female gender, young age, low education level, insufficient income, previous exposure to a disaster, prolonged treatment of earthquake victims, low professional seniority, and experience. Research highlights these variables. Gökçen and colleagues (2024) and KaraNariçi (2024) found that women experience more earthquake-related secondary traumatic stress; Onat and colleagues (2025) revealed that women have higher levels of earthquake anxiety and depression. Akman (2023) determined that there is a significant and high-level relationship between women's secondary traumatic stress caused by earthquakes, depression, and anxiety levels. Contrary to these findings, Yavuzcan (2025) found that secondary traumatic stress related to earthquakes does not significantly differ according to gender. Onat and colleagues (2025) found that younger individuals experience higher earthquake anxiety and depression.

Çınaroğlu and colleagues (2025) reported that as age increases, well-being levels rise and symptoms of secondary traumatic stress caused by earthquakes decrease; individuals with higher education levels have a lower risk of earthquake-related secondary traumatic stress and fewer depression symptoms; similarly, individuals with higher income levels have lower depression levels and fewer symptoms of secondary traumatic stress caused by earthquakes. Thus, higher income and education levels are associated with better mental health outcomes. KaraNariçi (2024) also found that individuals with low income experience more intense symptoms of earthquake-related secondary traumatic stress compared to high-income individuals. Akman (2023) observed that those who had previously been exposed to a disaster have higher levels of earthquake-related secondary traumatic stress and earthquake anxiety. In Onat and colleagues' (2025) studies, the prolonged treatment duration for patients affected by the earthquake was associated with earthquake anxiety. Verimli (2024) identified a negative and significant relationship between avoidance behavior and the duration of work related to earthquakes; additionally, a positive and significant relationship was found between time spent in the field and symptoms of secondary traumatic stress caused by earthquakes; individuals who experienced the earthquake and worked in the field, especially those with over 10 years of professional experience, showed lower levels of psychological symptoms, anxiety, and negative self-perception; those who did not go to the earthquake zone exhibited higher levels of hostility compared to colleagues working in the area; psychologists specializing in clinical psychology developed lower levels of psychological symptoms, anxiety, and depression compared to colleagues in other fields.

Effective coping strategies, psychological resilience, receiving psychosocial support, and providing psychotherapy support are effective in preventing the transformation of secondary traumatic stress caused by earthquakes into anxiety and depression. Research findings confirm the importance of these regulatory effects. Akman (2023) identified a significant and high-level relationship between the need for psychosocial support after an earthquake and levels of secondary traumatic stress, earthquake-related anxiety, and depression. Additionally, it was found that those who felt the need for psychosocial support after the earthquake had higher levels of depression. Yavuzcan (2025) determined a negative and significant relationship between earthquake-related secondary traumatic stress and psychological resilience; however, psychological resilience did not significantly predict earthquake-related secondary traumatic stress. In the study by Onat and colleagues (2025), earthquake-related secondary traumatic stress, earthquake anxiety, and depression showed a positive correlation with ineffective coping styles and a negative correlation with effective coping styles. It was also observed that ineffective coping styles predicted earthquake-related secondary traumatic stress, earthquake anxiety, and depression. Verimli (2024) found that providing psychotherapy support has a preventive effect on earthquake-related secondary traumatic stress and psychological symptoms.

Conclusion

In this study, the relationship between secondary traumatic stress caused by earthquakes, earthquake anxiety, and depression was examined using a traditional review method; the findings are based on the results of seven studies conducted in Turkey. The findings indicate that there is a significant and positive relationship between earthquake-related secondary traumatic stress, earthquake anxiety, and depression, and that the psychological effects of earthquakes impact a broad population. Additionally, the results reveal that earthquake-related secondary traumatic stress is a significant predictor of depression and anxiety. These findings highlight the contagious nature of traumas and their widespread societal impact; they also point to the psychological burden on groups professionally exposed to trauma. Furthermore, they emphasize that post-disaster intervention programs should include not only those directly exposed to trauma but also those indirectly affected.

Recommendations

In earthquake psychology research, although numerous studies focus on clinical symptoms such as PTSD, anxiety, and depression in individuals who directly experience earthquakes, the literature examining the interactions between secondary traumatic stress, earthquake anxiety, and depression is limited. Specifically, in Turkey, no literature review has been found that addresses a study on the relationship between secondary trauma caused by earthquakes and earthquake-related anxiety and depression in groups exposed to indirect trauma, such as family members affected by the earthquake. Therefore, earthquake-related psychopathology can be examined with a holistic approach that considers both directly and indirectly affected individuals together.

Research emphasizes the importance of implementing comprehensive mental health interventions that target both direct and indirect victims of earthquakes. Community support programs can be effective in alleviating the long-term psychological effects of trauma and can serve a protective role for both victims and professionals working in crises. Additionally, increasing awareness about media exposure and media literacy can reduce secondary traumatic stress for individuals who are not directly affected and for professionals working with victims.

Declarations

Ethics Approval and Participation Permit
It cannot be applied because it is a compilation study.

Publication Permission
Not applicable.

Availability of Data and Materials
Not applicable.

Conflict of Interest
The authors declare that there is no conflict of interest.

Funding
Not applicable.

Author Contributions
CK conducted the study under the guidance of advisor MÇ
Both authors contributed to the research process.

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