Review

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Psychosocial Effects of the Group Therapy on Adolescents after an Earthquake: A Systematic Review

Deprem Sonrası Ergenler Üzerinde Grup Terapisinin Psikososyal Etkileri: Sistematik İnceleme

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ABSTRACT

This study aims to examine the psychosocial effects of group therapy interventions with adolescents following large-scale traumatic events such as earthquakes. A systematic review of scientific articles published between 2000 and 2023 was conducted. A total of eight studies that met the inclusion criteria and were accessed from the PubMed and Google Scholar databases were included in the review. The therapeutic interventions administered encompassed a range of approaches, including cognitive–behavioral therapy (CBT), art therapy, eye movement desensitization and reprocessing (EMDR), psychoeducation, and sand tray therapy. The findings indicated that CBT and EMDR were the most efficacious approaches for reducing posttraumatic stress disorder (PTSD) symptoms, whereas art therapy and sand tray therapy facilitated emotional expression and psychological resilience. The results suggest that group therapy plays an important role in reducing emotional and behavioral problems experienced after trauma, especially through cognitive–behavioral therapy, art therapy, and play therapy. However, emphasis is placed on the necessity for further investigation into the long-term effects of group therapy interventions. This systematic review underscores the importance of group therapy interventions for adolescents in the aftermath of earthquakes, offering guidance for the development of future interventions.

Keywords: Earthquake, adolescents, group therapy, psychosocial effects, posttraumatic stress disorder

ÖZ

Bu çalışma, deprem gibi büyük ölçekli travmatik olayların ardından ergenlere uygulanan grup terapisi müdahalelerinin psikososyal etkilerini incelemek amacıyla yapılmıştır. 2000 ile 2023 yılları arasında yayınlanan bilimsel makaleler sistematik olarak incelenmiştir. PubMed ve Google Akademik veri tabanlarından erişilen ve dahil edilme kriterlerini karşılayan toplam sekiz çalışma incelemeye dahil edilmiştir. Uygulanan terapötik müdahaleler, bilişsel davranışçı terapi (CBT), sanat terapisi, Göz Hareketleriyle Duyarsızlaştırma ve Yeniden İşleme (EMDR), psiko-eğitim ve kum tepsisi terapisi gibi çeşitli yaklaşımları kapsamaktadır. Bulgular, CBT ve EMDR 'nin travma sonrası stres bozukluğu (PTSD) semptomlarını azaltmada en etkili yaklaşımlar olduğunu, sanat terapisi ve kum tepsisi terapisinin ise duygusal ifadeyi ve psikolojik dayanıklılığı kolaylaştırdığını göstermiştir. Bulgular, grup terapisinin, özellikle bilişsel-davranışçı terapi, sanat terapisi ve oyun terapisi yoluyla, travma sonrası yaşanan duygusal ve davranışsal sorunların azaltılmasında önemli bir rol oynadığını göstermektedir. Ancak, grup terapisi müdahalelerinin uzun vadeli etkilerinin daha fazla araştırılması gerektiği vurgulanmaktadır. Bu sistematik inceleme, deprem sonrası ergenler için grup terapisi müdahalelerinin önemini vurgulamakta ve gelecekteki müdahalelerin geliştirilmesi için rehberlik sağlamaktadır.

Anahtar sözcükler: Deprem, ergenler, grup terapisi, psikososyal etkiler, travma sonrası stres bozukluğu

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Introduction

As posited by Bertinelli et al. (2023), there is a correlation between mental health and seismic events. The psychological impact of earthquakes can be exacerbated by the resulting feelings of fear and stress, which are often precipitated by economic and human losses. The psychological impact on individuals should not be overlooked, as should changes in social life (Kirmayer et al. 2010, Warsini et al. 2014). Research has demonstrated that exposure to such natural disasters can result in the development of psychological ailments, including anxiety and depression (Briere and Elliott 2000). Furthermore, post-earthquake social support systems have been demonstrated to play a role in feelings of loneliness. It is recommended that psychological first aid and psychotherapy services be made available to those affected. It is imperative to comprehend the multifaceted consequences and formulate suitable strategies for public health (Kar 2009, Schwarz and Perry 1994, Furr et al. 2010).

As Kristensen et al. (2012) demonstrated, earthquakes have a detrimental effect on individuals. Pine (2003) posits that experiences can exert a detrimental effect on social development. As posited by Layne et al. (2008), possible psychological responses to the experience may encompass feelings of anxiety and depression, which have been shown to potentially evolve into psychiatric disorders. Societies must implement effective mechanisms to address the challenges posed by earthquakes (Schreiber et al. 2010; Calhoun et al. 2022; Margolin et al. 2010). Adolescents are known to experience a heightened psychological burden in the aftermath of natural disasters, which may be exacerbated by factors such as the loss of loved ones and support systems (Kristensen et al. 2012). As posited by Ford et al. (2009), emotional distress in adolescents is exacerbated by social isolation, leading to withdrawal. The enhancement of adolescents' social support systems during this process is a vital factor in strengthening their resilience to trauma (Saxe et al. 2005).

Adolescence represents a pivotal period for emotional and social development. Schwarz and Perry (1994) posit that traumatic experiences during this period can disrupt these developments. This is a period during which individuals are susceptible to the repercussions of distressing experiences. This period is characterized by the formation of identity, the attainment of independence, and the development of social relationships (Pine 2003). It has been demonstrated that natural disasters are conducive to the generation of feelings of insecurity, which in turn can result in the emergence of psychological and social problems (Furr et al. 2010).

Furthermore, research indicates that adolescents are more prone to developing posttraumatic stress disorder (PTSD) following an earthquake (Öztürk et al. 2023). Research indicates that this demographic is more susceptible to developing PTSD than adults are, with implications for educational and social functioning. Research indicates that this condition can persist for extended periods without undergoing treatment (Goenjian et al. 2005). PTSD has been shown to have a significant effect on the long-term mental and emotional well-being of adolescents (Calhoun et al. 2022). The response to trauma varies depending on the severity of the experience and individual coping mechanisms. A study of Japanese high school students following the 2011 Tohoku earthquake demonstrated that school-based interventions can effectively reduce depression and anxiety (Okumoto et al. 2017). Social support has been identified as a crucial factor in the psychological recovery of individuals (Layne et al. 2008). Group therapy provides adolescents with a platform for the open expression of their emotions, thereby enhancing their coping skills (Mahmoudi et al. 2009). PTSD has been identified as a significant risk factor for adolescents' long-term mental and emotional well-being. The response to trauma is subject to variation depending on the severity of the experience and the individual's coping mechanisms. In this context, a study conducted with high school students in Japan following the 2011 Great East Japan Earthquake demonstrated that school-based psychosocial interventions effectively reduced symptoms of depression and anxiety (Okuyama et al. 2017).

Group therapy has been demonstrated to be an effective intervention for reducing the psychological impact of traumatic events on adolescents (Mahmoudi et al. 2009). The utilization of experiential knowledge from others has been demonstrated to be a mechanism for the alleviation of trauma (Maslovaric et al. 2017). Group therapy has been demonstrated to reduce symptoms of PTSD in adolescents (Mahmoudi

et al. 2009) and to alleviate anxiety and depression in individuals impacted by the Nepal earthquake (Lee & Jang 2020). Group therapy has been demonstrated to enhance social bonds and expedite recovery through facilitating the sharing of experiences and emotional responses (Okuyama et al. 2017). Furthermore, the activation of psychological support systems can mitigate feelings of isolation in the aftermath of trauma (Tanaka et al. 2020). A longitudinal study following the Great East Japan Earthquake in Japan revealed that group therapy reduced depression and anxiety symptoms and contributed to students' long-term psychological recovery (Okuyama et al. 2017). Social support has been identified as a crucial factor in the recovery process from trauma (Schreiber et al. 2010). Group therapy is recognized as one of the most effective interventions for providing such support. Group therapy has been shown to provide psychological support, facilitating the expression of emotions and the development of empathy (Saxe et al. 2005). Adolescents have been shown to exhibit greater levels of openness in group settings, which has been demonstrated to facilitate connections with peers, promote the development of empathy, and reduce feelings of isolation (Saltzman 2018). This approach has been demonstrated to speed up emotional healing (Layne et al. 2008). Group therapies have been demonstrated to be efficacious in facilitating both personal growth and social rehabilitation in individual patients. Research findings indicate that group therapy can enhance adolescent confidence and promote open emotional expression, thereby facilitating long-term recovery (Ford et al. 2009). To enhance group therapy, programs that include long-term follow-ups and adapt therapy sessions to cultural contexts are recommended (Maslovaric et al. 2017).

This study systematically examines the effectiveness and psychosocial impact of group therapy interventions on adolescents affected by earthquakes. The objective of this systematic review is twofold: first, to evaluate the impact of group therapy interventions on psychosocial problems in adolescents following earthquakes; second, to determine their role in the recovery process. The evaluation of group therapy in addressing trauma-related stress disorders and other psychological problems among adolescents has the potential to inform future interventions. The study also examines the contribution of these interventions to long-term recovery and the development of social functioning in adolescents.

Method

Research Protocol

This study is a systematic review of the psychosocial effects of group therapy interventions on adolescents following an earthquake. It covers studies in English and Turkish published between 2000 and 2023 on PubMed and Google Scholar. The search terms included 'adolescents and group therapy', 'trauma and adolescents and earthquakes', 'group therapy and adolescents and posttraumatic stress', 'mental health interventions and adolescents and disasters' and 'adolescents and psychological effects and natural disasters'. The aim of this study was to perform a systematic evaluation of the efficacy of group therapy interventions in addressing psychological distress, PTSD symptoms, anxiety, and depression among earthquake-affected adolescents. The PRISMA guidelines (Moher et al. 2009) and PRISMA flow diagram (Rethlefsen et al. 2021) were followed to ensure transparency, completeness, and accuracy in reporting findings (Figure 1).

During the present systematic review process, a total of 456 studies included in the previous version of the review were considered, and 245 reports were available for these studies. A comprehensive search was conducted through various databases and registry systems to identify new studies, yielding a total of 61 records from databases and 23 records from official registry systems. Of the total 84 new records, 46 were duplicate records, 8 were excluded by automation tools, and 9 were excluded for other reasons during the prescreening phase. Consequently, a total of three records were identified within the designated databases and registration systems. Despite these diligent efforts, the objective of acquiring three reports from the records was not realized. Of the three reports that were assessed for eligibility, six were excluded for specific reasons (e.g., irrelevance to the topic, inadequate methodology, lack of full-text access).

Furthermore, new studies were identified by means of alternative methodologies. In this context, a total of nine records were identified from websites, two records from various organisations, and two records through methods such as reference searches. Three of the 13 records were selected for retrieval; however,

two of these could not be obtained. Two reports were not included in the review. This decision was made for reasons that had previously been determined.

Following the conclusion of the processes, a total of four new studies that met the specified criteria were included in the systematic review. Of these, reports for two of the studies were obtained. Consequently, in conjunction with preceding studies, a total of eight studies were incorporated into the systematic review, thereby establishing a total of eight reports for the included studies.

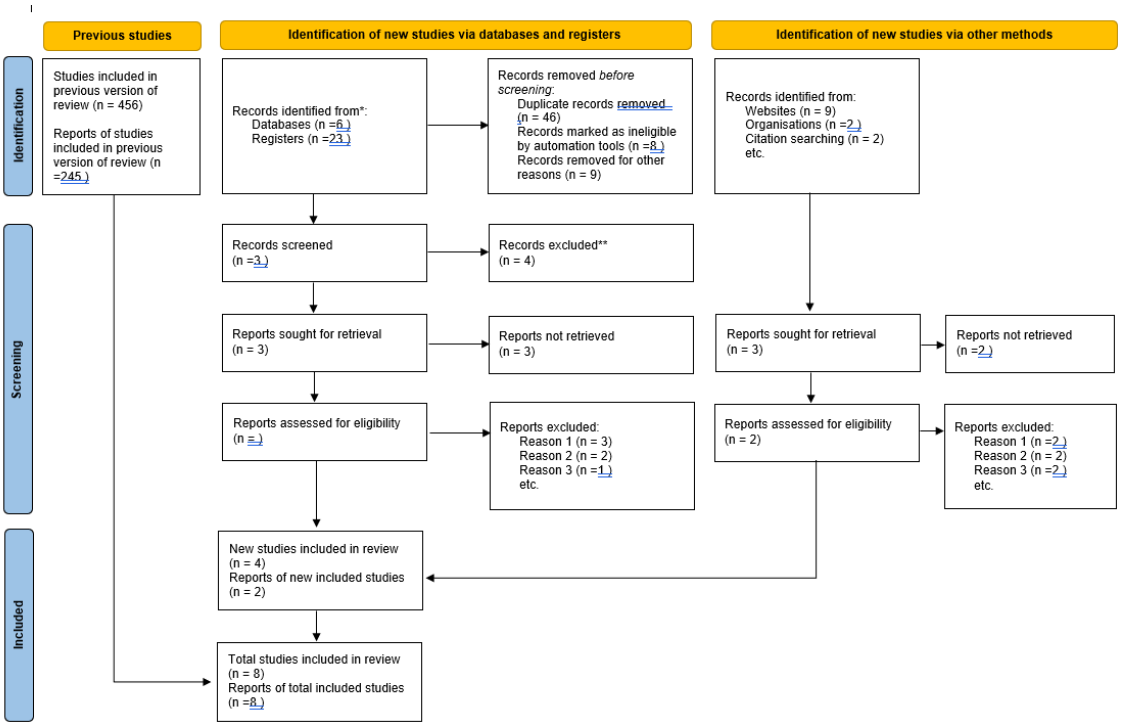

Figure 1. PRISMA flow chart

Inclusion and Exclusion Criteria

Studies included in the research were selected based on specific criteria. The primary inclusion criteria required that studies explicitly contained the keywords "earthquake and adolescents" and "group therapy" in their titles or abstracts, were original research articles published between 2000 and 2023, and presented data derived from human samples. In terms of methodological diversity, descriptive, observational, case-focused, experimental, and quasi-experimental designs were considered, thereby aiming to establish a broad methodological perspective that would allow the topic to be examined across different contexts and through various research approaches.

Publications excluded from the research were identified according to defined criteria. Content published on unofficial websites, conference proceedings, book chapters, newspaper articles, and studies consisting solely of abstract texts were not included in the evaluation, and publications that could not be directly associated with the scope of the topic were also excluded. Furthermore, due to language restrictions, only articles published in Turkish and English were considered; studies published in languages other than Turkish and English were excluded from the systematic review. Additionally, in alignment with the primary objectives of the research, meta-analyses were excluded from the study pool.

Data analysis

A qualitative synthesis was performed by tabulating the sample characteristics, research types and measurement tools used. The research characteristics are presented below (Table 1).

Results

A total of 8 studies published between 2000 and 2023 were reviewed in this systematic review. All studies were experimental, descriptive, and observational and included case reports as well as small-scale experimental observations.

Table 1. Characteristics of the studies included in the systematic review

Research	Sample Characteristics	Type	Measures	Results
Demirci et al. (2024)	8 adolescents who were exposed to primary trauma in the February 6, 2023 earthquakes in Turkey, showed symptoms of traumatic stress, and voluntarily agreed to participate in a psycho-educational process.	Experimental	Child and Adolescent Post-Traumatic Stress Disorder Reaction Index (CAPS) Brief Symptom Inventory (BSI) Coping Styles Scale-Brief Form (CSS-BF)	Psychoeducational intervention significantly reduced trauma symptoms in adolescents exposed to earthquakes. After the intervention, an increase in participants' coping skills was observed. In particular, a shift from emotion-focused coping strategies to more adaptive coping strategies was observed. The intervention program was found to be effective in supporting adolescents' psychological well-being.
Lee and Jang (2020)	12 adolescents seeking psychological support after the Nepal earthquake participated in a sandplay intervention program.	Experimental	Resilience Scale-25 (RS-25) Child Behavior Checklist	Significant increases in psychological health and psychological resilience levels have been observed in adolescents who underwent sandplay therapy. In particular, there was a reduction in anxiety, depression, and posttraumatic stress symptoms. Sandplay therapy has been evaluated as an effective intervention method for adolescents who experienced trauma after an earthquake. No such changes were observed in the control group. The sandplay therapy group significantly improved the mental health and resilience of adolescents following the Nepal earthquake.
Tanaka et al. (2020)	4,766 Chinese adolescents attending schools in Sichuan province affected by the Wenchuan earthquake.	Observational	Symptom Checklist-90 (SCL-90) Athens Insomnia Scale (AIS)	School-based psychotherapy and storytelling had a positive long-term effect on the mental health of teenagers. Students who participated in these

			Psychotic-like Experiences Scale (PLEs)	interventions exhibited fewer depressive symptoms and trauma-related stress symptoms. Psychoeducation was particularly effective for male students, while storytelling was more effective for female students. Students who participated in these interventions demonstrated greater psychological resilience and coping skills.
Maslovaric et al. (2017)	119 traumatized adolescents affected by the 2016 Central Italy Earthquake in Italy.	Experimental	Impact of Event Scale-Revised (IES-R)	The EMDR (Eye Movement Desensitization and Reprocessing) Integrative Group Treatment Protocol (IGTP) has been shown to significantly reduce posttraumatic stress symptoms, anxiety and depression in adolescents who have experienced a earthquake. Psychological well-being increased following the intervention. Group-based EMDR-IGTP has been found to be an effective intervention tool for young people after a disaster.
Okuyama et al. (2017)	A total of 101 students attending a middle school in the Miyagi region (affected by the 2011 Japan earthquake) were followed up after a school-based intervention to assess posttraumatic stress and depression symptoms.	Descriptive/ Observational	Quick Inventory of Depressive Symptomatology (QIDS-J) Zung Self-Rating Anxiety Scale (SAS) Impact of Event Scale-Revised (IES-R)	A significant decrease in students' posttraumatic stress and depression symptoms was observed after the school-based intervention. It was concluded that the intervention was effective in supporting the psychological well-being of adolescents after the disaster. Most of the students were satisfied with the intervention and stated that they felt better. It shows that school-based psychological support can be beneficial for young people after the disaster.
Maleki Avar-sin & Pour-hossein (2016)	60 adolescents rescued in East Azerbaijan Province following earthquake.	Experimental	Depression Anxiety Stress Scale-21 (DASS-21)	Cognitive Behavioral Group Therapy (CBGT) significantly reduced anxiety and acute stress levels in adolescents in

				the experimental group. No significant change was observed in the control group. The study revealed that CBGT is an effective intervention for improving the psychological well-being of adolescents affected by earthquakes.
Mahmoudi et al. (2009)	100 adolescents affected by the Bam Earthquake who exhibit posttraumatic stress symptoms and are willing to undergo treatment.	Experimental	Posttraumatic Stress Scale (PSS)	Short-term cognitive behavioral group therapy has been found to significantly reduce PTSD symptoms in adolescents with PTSD following the Bam earthquake. Participants in the intervention group showed significant improvements in trauma-related anxiety, fear, and other stress symptoms compared to the control group. The effectiveness of such psychosocial interventions in the psychological recovery of adolescent earthquake survivors has been emphasized.
Goenjian et al. (2005)	The study included four groups: 32 students from Spitak who did not receive treatment, 36 students from Gumri who received treatment, 27 students who did not receive treatment, and 30 students from Yerevan who did not receive treatment. Adolescents who experienced the earthquake and received treatment were compared with those who did not receive treatment.	Descriptive/Observational	Child PTSD Reaction Index (CPTSD-RI) Depression Self-Rating Scale (DSRS)	Five years later, students who received treatment showed a significant reduction in PTSD and depression symptoms. In contrast, these symptoms persisted and were more severe in the groups that did not receive treatment. This demonstrates that early psychological intervention has a protective effect on mental health in the long term.

The sample sizes of the studies varied considerably. The samples ranged from adolescents (e.g., Demirci et al. 2024) to 4,766 participants (Tanaka et al. 2020), and the participants generally consisted of individuals who had been diagnosed with posttraumatic stress disorder after an earthquake. Purposive sampling or random assignments to groups is mostly used in the selection of samples.

The measurement tools used in the studies differ according to the symptom area. The scales used include the Child and Adolescent Posttraumatic Stress Disorder Reaction Index (CAPS), Brief Symptom Inventory (BSI), Coping Styles Scale-Brief Form (CSS-BF), Resilience Scale-25 (RS-25), Child Behavior Checklist Symptom Checklist-90 (SCL-90), Athens Insomnia Scale (AIS), Psychotic-like Experiences Scale (PLEs),

Impact of Event Scale-Revised (IES-R), Quick Inventory of Depressive Symptomatology (QIDS-J), Zung Self-Rating Anxiety Scale (SAS), Impact of Event Scale-Revised (IES-R), Depression Anxiety Stress Scale-21 (DASS-21), Posttraumatic Stress Scale (PSS), Child PTSD Reaction Index (CPTSD-RI), and Depression Self-Rating Scale (DSRS).

The eight studies included in this systematic review examined the effects of psychological interventions implemented after earthquakes in different countries on the psychological well-being of adolescents. The interventions included CBT, psychoeducation, art-based therapies, and EMDR-based group protocols, with results generally indicating variable effects on key psychological domains such as PTSD, anxiety, depression, and coping skills. Mahmoudi and colleagues (2009) reported that short-term CBT applied to 85 participants in a controlled experimental study conducted after the Bam Earthquake in Iran significantly reduced PTSD symptoms. Similarly, Maleki Avarsin and Pourhossein (2016) demonstrated in a quasi-experimental study involving 20 participants following the East Azerbaijan Earthquake that CBT significantly reduced anxiety and stress levels in both women and men. In Turkey, Demirci and colleagues (2024) conducted a single-group AB design study with eight adolescents following the 2023 Kahramanmaraş earthquakes and implemented an eight-session psychotherapy program. At the four-month follow-up, a decrease in depression levels and an increase in coping skills were observed, but no significant change in PTSD symptoms was detected. Among studies conducted with larger sample groups, Okuyama and colleagues (2017) implemented school-based psychosocial support programs over three years with 1,432 to 1,488 students in Japan following the 2011 Great East Japan Earthquake and recorded gradual decreases in depression and anxiety levels during this period. Similarly, Tanaka et al. (2020) implemented an 8- to 12-session school-based psychoeducation program with 1,028 students in China following the 2008 Wenchuan Earthquake and reported reductions in psychological distress and insomnia levels because of the intervention. However, the cross-sectional nature of this study made it difficult to establish causal relationships. Lee and Jang (2020), who examined the effects of art-based interventions, conducted a mixed-methods study with 119 children in Nepal following the 2015 earthquake and reported that seven sessions of sand tray therapy reduced anxiety and withdrawal symptoms and emphasized that themes of emotional healing emerged in thematic analyses based on the children's narratives. Additionally, data on EMDR-based group interventions used in trauma-specific interventions are also noteworthy. Maslovaric and colleagues (2017) conducted a study with 116 participants following the 2016 Italy earthquake, applying a three-session group EMDR protocol and observing a significant reduction in PTSD symptoms at the three-month follow-up. Another notable study in terms of long-term follow-up data is that of Goenjian and colleagues (2005). The researchers applied group and individual trauma-grief therapy to 38 participants following the 1988 Spitak Earthquake and reassessed them after 1.5 years and 5 years; they reported significant reductions in PTSD and depression symptoms at both follow-up periods. These findings suggest that group therapy interventions may have not only short-term but also long-term effects. Overall, the studies examined indicate that various types of therapy are effective to some extent in supporting adolescents' psychological well-being after disasters. However, since the type of intervention, duration, sample size, and timing of assessments vary, it is important to consider these variables when comparing findings.

Discussion

This systematic review comprehensively examined the contributions of group therapy interventions applied to adolescents following earthquakes to their psychological well-being. The findings generally indicate that group therapy is effective in reducing common psychopathologies such as PTSD, anxiety, depression, and social isolation. As Mahmoudi et al. (2009) reported, short-term cognitive–behavioral group therapy reduces symptoms of PTSD. Similarly, Maleki Avarsin and Pourhossein (2016) reported significant decreases in anxiety and stress levels. In a similar vein, art-based therapies (e.g., sand therapy) and psychoeducational programs have demonstrated favorable outcomes in enhancing flexibility and optimizing social functioning (Lee and Jang 2020; Demirci et al.,2024).

A three-year follow-up study conducted by Okuyama et al. (2017) in Japan revealed that school-based interventions reduced long-term depression and anxiety levels, emphasizing the importance of early

intervention. Group therapy has been demonstrated to facilitate not only individual recovery but also the cultivation of empathy, social connectedness, and support mechanisms (Saxe et al. 2005). Nevertheless, the absence of substantial enhancement in PTSD symptoms in certain studies indicates the necessity for additional research on the timing and composition of interventions.

The effectiveness of group therapy is contingent upon the specific type of therapy employed. CBT, the most used method, is effective in reducing PTSD and anxiety symptoms (Mahmoudi et al. 2009; Maleki Avarsin & Pourhossein 2016). It is evident that art-based approaches, such as Sandplay therapy, have increased flexibility by providing nonverbal means of expression (Lee & Jang 2020). EMDR-based group protocols have yielded equivocal results and have been shown to exacerbate PTSD symptoms in certain cases (Maslovaric et al. 2017). A significant methodological limitation in many studies is the absence of reporting on therapist competence and training. This important limitation is problematic, as it results in findings that lack validity (Ford et al. 2009, Saltzman et al. 2018).

A salient observation in this study is that the heterogeneity in sample sizes and methodological approaches serves to restrict the generalisability of the findings. For example, Demirci et al. (2024) conducted a study with a sample size of eight adolescents and their families. In contrast, Okuyama et al. (2017) did not incorporate random assignments or control groups, which hinders the ability to draw causal inferences. Furthermore, a significant number of studies have been criticized for their relatively brief follow-up periods, which hinders the ability to accurately evaluate the long-term implications of group therapy (Tanaka et al. 2020).

The majority of studies have utilized diverse measurement tools to assess symptoms, including the DASS-21, IES-R, CPTSD-RI, and SCL-90. This diversity has rendered direct comparisons challenging. Furthermore, the majority of assessments depend on self-reported forms, which carry the risk of respondent bias. Furthermore, the majority of studies have neglected to consider the role of cultural context, thus resulting in a dearth of comprehensive analyses. However, community-based collectivist structures (e.g., Iran and Nepal) have been demonstrated to enhance the effectiveness of group therapy. In a 2009 study, Mahmoudi and colleagues reported that group therapy integrated with religious practices was more effective. In a similar vein, Lee and Jang's (2020) study revealed the efficacy of sand therapy, influenced by Hindu-Buddhist beliefs, in addressing mental well-being among young individuals in Nepal.

Finally, individual differences, such as gender, previous trauma history, resilience level, and socioeconomic status, have been overlooked in most studies. This complicates the determination of the most suitable candidates for group therapy. It is recommended that future research endeavors concentrate on ascertaining the conditions under which group therapy is most effective and for which individuals this form of therapy is most beneficial. Furthermore, group therapy conducted via digital platforms has the potential to increase accessibility. Considering the accelerated digital transformation that has ensued in the aftermath of the pandemic, rigorous evaluations of the efficacy of online group therapy modalities are imperative (Saltzman et al. 2018).

Group therapy is a widely accepted psychological intervention for adolescents exposed to earthquakes. The efficacy of these interventions in reducing PTSD, anxiety, and depression and in contributing to the strengthening of social support mechanisms has been well documented. However, the findings must be considered within the limitations of the study, which include small sample sizes, short follow-up periods, lack of cultural adaptation, and methodological differences. Consequently, the results may not be generalizable. Future research should focus on longer follow-up periods, culturally adapted interventions, detailed reporting of therapist competence, and large-scale randomized controlled trials. The implementation of this programme will facilitate the provision of group therapy interventions for adolescents affected by disasters.

Conclusion

The present systematic review examined eight group-based psychological intervention studies conducted on adolescents affected by earthquakes in different cultural contexts. The findings indicate that

therapeutic interventions administered in a group format, such as CBT, psychoeducation, eye movement desensitization and reprocessing (EMDR), and art therapy, are generally effective in reducing common psychological problems such as PTSD, anxiety, depression, and social isolation among adolescents. Specifically, structured, trauma-focused group therapies are efficacious in alleviating PTSD symptoms, whereas school-based interventions have been demonstrated to promote social functioning and psychosocial resilience.

However, several studies have reported limited improvement in PTSD symptoms, suggesting that factors such as intervention type, duration, practitioner quality, and individual differences may influence therapeutic outcomes. Group therapy has been demonstrated to play a significant role in the recovery process of adolescents by strengthening social support networks among individuals and encouraging emotional expression processes. However, the necessity for integration with individual therapy, long-term follow-up studies, and culturally adapted intervention models has also become apparent.

In conclusion, group therapy applied to support psychological recovery in adolescents after an earthquake has emerged as an effective and feasible intervention; however, further high-quality research is needed to enhance sustainability, contextual validity, and sensitivity of these effects to individual differences.

References

Bertinelli L, Mahé C, Strobl E (2023) Earthquakes and mental health. World Dev, 169:106283.

Briere J, Elliott DM (2000) Prevalence, characteristics, and long-term sequelae of natural disaster exposure in the general population. J Trauma Stress, 13:661-679.

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

Demirci H, Bilge Y, Emiral E, Şen S (2024) Enhancing recovery in postearthquake adolescents: Examining the impact of a psychoeducational intervention on traumatic stress symptoms and coping strategies. Curr Psychol, 43:26983-26996.

Ford JD, Fallot RD, Harris M (2009) Group therapy. In Treating Complex Traumatic Stress Disorders: An Evidence-Based Guide. (Eds CA Courtois, JD Ford):415-440. New York, Guilford Press.

Furr JM, Comer JS, Edmunds JM, Kendall PC (2010) Disasters and youth: A meta-analytic examination of posttraumatic stress. J Consult Clin Psychol, 78:765-780.

Goenjian AK, Walling D Steinberg AM, Karayan I, Najarian LM, Pynoos RS (2005) A prospective study of posttraumatic stress and depressive reactions among treated and untreated adolescents 5 years after a catastrophic disaster. Am J Psychiatry, 162:2302-2308.

Kar N (2009) Psychological impact of disasters on children: Review of assessment and interventions. World J Pediatr, 5:5-11.

Kirmayer LJ, Kienzler H, Afana AH, Pedersen D (2010) Trauma and disasters in social and cultural context. In Principles of Social Psychiatry. (Eds LJ Kirmayer, R Lemelson, M Barad):155-177. Hoboken, NJ, Wiley.

Kristensen P, Weisæth L, Heir T (2012) Bereavement and mental health after sudden and violent losses: A review. Psychiatry, 75:76-97.

Layne CM, Saltzman WR, Poppleton L, Burlingame GM., Pašalić A, Duraković E et al. (2008) Effectiveness of a school-based group psychotherapy program for war-exposed adolescents: A randomized controlled trial. J Am Acad Child Adolesc Psychiatry, 47:1048-1062.

Lee S, Jang M (2020) The effect of group sandplay therapy on psychological health and resilience of adolescent survivors of Nepal earthquake. J Symb Sandplay Ther, 11: 45-78.

Luthar SS, Prince RP (2006) Developmental psychopathology. In Lewis's Child and Adolescent Psychiatry. (Ed M Lewis):291-299. Pennsylvania, Lippincott Williams & Wilkins.

Mahmoudi GJ, Mohammadi MR, Yasami MT, Ali RN, Naderi F, Moftakhari O. (2006) The effects of a short-term cognitive behavioral group intervention on Bam earthquake-related PTSD symptoms in adolescents. Iran J Psychiatry Clin Psychol, 12:146-154.

Maleki Avarsin F, Pourhossein R (2016) The effectiveness of cognitive behavioral group therapy on anxiety and acute stress in adolescents rescued from earthquake in East Azerbaijan Province, Iran. Eur Online J Nat Soc Sci, 5:966-972.

Mannarino AP, Cohen JA (2011) Traumatic loss in children and adolescents. J Child Adolesc Trauma, 4:22-33.

Margolin G, Ramos MC, Guran EL (2010) Earthquakes and children: The role of psychologists with families and communities. Prof Psychol Res Pr, 41:1-9.

Maslovaric G, Zaccagnino M, Mezzaluna C, Perilli S., Trivellato D, Longo V et al. (2017) The effectiveness of Eye Movement Desensitization and Reprocessing integrative group protocol with adolescent survivors of the Central Italy earthquake. Front Psychol, 8:1826.

McNally RJ, Bryant RA, Ehlers A (2003) Does early psychological intervention promote recovery from posttraumatic stress? Psychol Sci Public Interest, 4:45-79.

Moher D, Liberati A, Tetzlaff J, Altman DG, PRISMA Group (2009) Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. Int J Surg, 8:336-341.

Öztürk E, Akış AD, Derin G, Erdoğan B (2023) Social trauma and disaster psychology: The impact of earthquakes on children's mental health from the perspective of dissoanalysis theory and modern psychotraumatology. Novel Forensic Research, 2:57-70.

Pine DS (2003) Developmental psychobiology and response to threats: Relevance to trauma in children and adolescents. Biol Psychiatry, 53:796-808.

Rethlefsen ML, Kirtley S, Waffenschmidt S, Ayala AP, Moher D, Page MJ, et al. (2021) PRISMA-S: An extension to the PRISMA statement for reporting literature searches in systematic reviews. Syst Rev, 10:39.

Saltzman WR, Layne CM, Steinberg AM, Pynoos RS (2018) Trauma/grief-focused group psychotherapy with adolescents. In Psychological Effects of Catastrophic Disasters. (Eds. RJ Ursano, CS Fullerton, AE Norwood):669-729. New York, Routledge.

Saxe R (2005) Against simulation: The argument from error. Trends Cogn Sci, 9:174-179.

Schreiber V, Maercker A, Renneberg B (2010) Social influences on mental health help-seeking after interpersonal traumatization: A qualitative analysis. BMC Public Health, 10:634.

Schwarz ED, Perry BD (1994) Posttraumatic response in children and adolescents. Psychiatr Clin North Am, 17:311-326.

Tanaka E, Iso H, Tsutsumi A, Kameoka S, You Y, Kato H (2020) School-based psychoeducation and storytelling: Associations with long-term mental health in adolescent survivors of the Wenchuan earthquake. Epidemiol Psychiatr Sci, 29:e65.

Warsini S, Mills J, Usher K (2014) Solastalgia: Living with the environmental damage caused by natural disasters. Prehosp Disaster Med, 29:87-90.

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