







# An Investigation of the Effect of an Earthquake Psychoeducation Program on the Perception of Coping with Trauma, Psychological Resilience, and the Subjective Well-Being of High School Students

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## ARTICLE INFO

### Article History

Received 02.07.2023

Received in revised form

13.01.2024

Accepted 22.05.2024

Article Type: Research

Article



## ABSTRACT

Natural disasters have become one of the leading events that have seriously affected human life and shaken society, both in Turkey and in the world lately. Natural disasters that have a wide impact cause material morale losses and have a traumatic effect on individuals. Earthquakes are one of the compelling life events that cause losses and traumatic experiences due to their destructive effects. After such an event, it is important to ensure the adaptation of individuals to normal life, to cope with the traumas that may occur, to increase their psychological resilience in the face of challenging life events, and to ensure their subjective well-being with psychosocial support activities to be carried out. In this context, the aim of this study is to examine the effect of the earthquake psychoeducation program on the perception of coping with trauma, psychological resilience, and subjective well-being of high school students affected by earthquakes. The research participants consisted of students who came to Şırnak from the earthquake region and continued their high school education. In the research, a pretest-posttest single-group quasi-experimental design was used, and 11 high school students were included as participants. The Perceived Ability to Cope with Trauma Scale (PACT), the Brief Resilience Scale (BRS), and the Adolescent Subjective Well Being Scale were used to collect the data. The earthquake psychoeducation program for high school students consisting of eight modules and 11 sessions was applied to the participants. The data were analyzed with the Wilcoxon Signed Ranks test for the significance of the pre-test and post-test score differences. The findings obtained as a result of the research showed that the earthquake psychoeducation program was effective on the perception of coping with trauma and psychological resilience of high school students affected by the earthquake, but it was not significantly effective on their subjective well-being. Based on the research findings, comments were made, and suggestions for practice and research were developed.

Keywords:

Psychoeducation of earthquake program, coping with trauma, psychological resilience, subjective well being.

## 1. Introduction

Today, one of the important problems that deeply shake both individuals and societies is the occurrence of disasters. Although disasters affect the lives of many people, by their nature they cause material and morale losses and can leave traumatic effects on individuals. Natural or man-made events that disrupt the normal flow of life and cause destruction and economic and social losses are called disasters (Erkal & Değerliuyurt,

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**Citation:** Karal, E., Kutlu, A., Bedel, A., & Kaçmaz, Ş. (2024). An investigation of the effect of an earthquake psychoeducation program on the perception of coping with trauma, psychological resilience, and the subjective well-being of high school students. *International Journal of Psychology and Educational Studies*, 11(3), 218-229. <https://dx.doi.org/10.52380/ijpes.2024.11.3.1265>

2009; Kadioğlu, 2008; Mağden et al., 2008). A disaster is defined as an event that develops suddenly, causes great damage and destruction in the society in which they occur, causes people to suffer, exceeds the capacity for intervention, and requires national/international assistance (Doğan, Keskin, & Dönmez, 2021). In order for an event to be considered as a disaster, it must cause great loss of life in the society and create circumstances that disrupt the flow of life (Ministry of Education, 2021).

The World Health Organization (2020) has divided disasters into natural disasters (earthquake, tsunami, flood, avalanche, landslide, and volcanic eruption) and man-made disasters (nuclear accidents, fires, and wars) in terms of occurrence. Earthquakes are one of the natural disasters that causes the most traumatic experiences and affects the lives of a very large number of people. Disruptive life events such as earthquakes can cause losses and traumas with their devastating effects. Karal & Atak (2022b) stated that earthquakes that interrupt the normal flow of life are a natural phenomenon that create seriously traumatize society. Psychological traumas experienced after the earthquake negatively affect the mental health of individuals and can lead to more severe consequences when psychological support is not provided (Özkan & Çetinkaya Kutun, 2021). It is known that young children and adolescents, in particular, are more affected by traumas like disasters (Kukuoğlu, 2018).

Trauma is a concept that has been known as long as human beings have existed and has a history as old as humanity. Although the word trauma can be used in the sense of injury, it is also used for situations that negatively affect the physical integrity and mental health of a person (Karal & Atak, 2022a). Hapke et al. (2006) stated that, for an event to be defined as a trauma, it must occur suddenly, cannot be brought under control, and has negative effects. In the DSM-5, the concept of trauma was defined as “actual death or threat of death, serious injury, or exposure to sexual violence” (APA, 2014). Herman (2016) stated that traumatic events disrupt social relationships such as the family, friends, and society of the individual. Özen (2018) stated that, today, both naturally occurring and man-made traumas have increased in number. These traumas affect a large part of society and constitute an important mental health problem (Pfefferbaum et al., 2014). It can be said that traumas have many psychological, cognitive, physical, and behavioral effects. Traumas cause a feeling of insecurity, a feeling of being startled, overstimulation, fear, and guilt (Neria, Nandi, & Galea, 2007). It can be said that one of the most common psychological problems after trauma is post-traumatic stress disorder (O'Donnell, Creamer, & Pattison, 2004). In addition, anxiety disorders (Grant et al., 2008) and depression (Franklin & Zimmerman, 2001) are among the psychological problems seen after trauma. In addition to all these, Gizir (2007) stated that earthquakes, which are social traumas, are also a risk factor for psychological resilience, which is used to protect the individual's existing well-being in challenging life events. It is also known that the individual's ability to cope with post-traumatic stress is a protective factor in psychological resilience (İkizer, Karancı, & Doğulu, 2016).

People face many difficulties, risks, and stressful experiences in their lives (Eminağaoğlu, 2006). Losses and psychological distress experienced during the earthquake can affect the psychological resilience of a person (Carter et al., 2016). Psychological resilience is the ability of the individual to adapt to negative life events and to cope with negative life events (Block & Kremen, 1996; Karal & Biçer, 2020). According to Ramirez (2007), psychological resilience expresses the individual's ability to recover from various bad situations in a short time, to adapt in a short time after stressful life events, and to return to one's old self. Psychological resilience, in the most general sense, is explained as an individual's ability to endure a difficult process (Jackson et al., 2007). Being able to endure difficult life events also contributes to post-traumatic development, which emphasizes positive psychological developments (Chen, Liu, Shi, Chen, & Fan, 2022). Naturally, it is observed that the psychological resilience of adolescents in regions with severe earthquakes is lower than in regions with low earthquakes (Liu, He, Jang, & Zhou, 2013). Psychological resilience has an important role in the long-term psychological well-being of the individual (Prayag, Ozanne, & Spector, 2021).

Another factor affected by the experiences during the earthquake is the level of well-being of the individual (Rask et al., 2002). Subjective well-being has three different components: life satisfaction, positive affect, and negative affect. The positive affect component includes feelings such as contentment about past experiences, satisfaction, pride, optimism about future life, hope, trust, and cheerfulness and joy related to the present moment (Diener, 2006; Seligman, 2002). The negative affect component includes emotions such as shame, anger, depression, hatred, sadness, and guilt, which are symptoms of a stressful life (Lyubomirsky et al., 2005). The life satisfaction component includes cognitive evaluations of the individual's satisfaction in various areas

of life. Life satisfaction is the cognitive component of subjective well-being, and positive and negative affect is the emotional component (Myers & Deiner, 1995; Eryılmaz, 2009). It is known that life satisfaction has a positive and protective effect on resilience (Karairmak, 2007; Liu et al., 2013). Subjective well-being is positive mental health, which is the manifestation of subjective judgments containing cognitive and emotional components related to general life satisfaction (Deiner, 2000). It is seen that earthquake preparedness is effective in the level of psychological well-being (Olivia, 2021).

No study was found in the literature on the effect of a psychoeducation program of psychosocial support regarding earthquakes on high school students. It is thought that the results of the study will make important contributions to studies on the post-traumatic coping skills, psychological resilience, and psychological well-being of individuals. In addition, the Ministry of National Education expects the implementation of earthquake psychosocial support programs from psychological counselors working in the field in the psychosocial support action plans. The social-emotional, cognitive, and behavioral responses of individuals after an earthquake are in the field of study of psychological counselors. It is important for individuals to benefit from psychosocial support activities, not only in the earthquake area but also in the regions where they migrated to with their families. In this direction, the aim was to examine the effect of a psychoeducation program regarding earthquakes on the perception of coping with trauma, psychological resilience, and subjective well-being of high school students. Depending on the general purpose, the hypotheses of the research are as follows:

- The participants' perceived ability to cope with trauma scores are significantly higher than their pre-test scores.
- The participants' psychological resilience post-test scores are significantly higher than their pre-test scores.
- The Participants' adolescent subjective well-being post-test scores are significantly higher than their pre-test scores.

## **2. Methodology**

### **2.1. Research Model**

In this research, a one group pretest-posttest model, one of the experimental research types, was used. The individuals participating in the research were determined by the purposive sampling method. Before starting the research, the Perception of Coping with Trauma Scale, the Brief Resilience Scale, and the Adolescent Subjective Well-Being Scale were applied to the participants as a pre-test. Then, 11 sessions of training titled "High School-Earthquake Psychoeducation Program" were given to the participants. At the end of the training program, the pre-test scales were re-applied to the participants as a post-test.

### **2.2. Participants**

This study was carried out in a high school affiliated with the Ministry of National Education in Şırnak Province. The education started after the school administration was informed of the work to be done, and permission letters were received from the parents of the students. In the research, the data collection tools were selected as the 11 students who came to the Silopi district of Şırnak after the earthquake in 2023 and who were affected by the earthquake, had different demographic structures, had permission from their families, volunteered, and accepted the rules of the group. Information about the demographic characteristics of the students in the participants is given in Table 1.

When Table 1 is examined, 8 (72.7%) of the 11 people in the participants are girls and 3 (27.3%) are boys. Of the students in the participants, 3 (27.2%) were in 9th grade, 2 (18.2%) were in 10th grade, and 6 (54.5%) were in 11th grade. In addition, the mean age of the participants was 15 ( $M=15,7, S=1.35$ ). The financial situation of 2 (18.2%) of the 11 people in the participants was low, and the financial situation of 9 (81.8%) was moderate. Of 11 people in the participants, 1 (9.0%) had 1 sibling, 1 (9.0%) had 3 siblings, 3 (27.2%) had 4 siblings, 2 (18.2%) had 6 siblings, 3 (27.2%) had 7 siblings. The education levels of the participants' mothers was: 2 (18.2%), illiterate; 4 (36.3%), primary school; and 5 (45.4%), middle school. The education levels of the participants' fathers was: 1 (9.0%), illiterate; 3 (27.2%), primary school; 4 (36.3%), middle school; and 3 (27.2%), high school. The distribution of the students in the participants in terms of the earthquake regions were: 2 (18.2%) from Hatay, 2 (18.2%) from Kahramanmaraş, 4 (36.3%) from Gaziantep, 2 (18.2%) from Malatya, and 1 (9.0%) from

Adıyaman. Among the losses experienced by the participants in the earthquake, 1 person each (9.0%) lost their aunt, grandmother, cousin, and grandfather (and his house), and 3 people each (27.2%) lost their teacher and a friend.

**Table 1.** Demographic Characteristics of the Participants

	Variable	Frequency (f)	Percentage (%)
Gender	Female	8	72.7
	Male	3	27.3
Class	9	3	27.2
	10	2	18.2
	11	6	54.5
Age	14	1	9.0
	15	4	36.3
	16	3	27.2
	17	3	27.2
Economic Status	Very Low	0	0,0
	Low	2	18.2
	Moderate	9	81.8
	High	0	0,0
	Very High	0	0.0
Sibling Count	1	1	9.0
	3	1	9.0
	4	3	27.2
	6	2	18.2
	7	3	27.2
	11	1	9.0
Education Status of Mother	Illiterate	2	18.2
	Primary School	4	36.3
	Middle School	5	45.4
Education Status of Father	Illiterate	1	9.0
	Primary School	3	27.2
	Middle School	4	36.3
	High School	3	27.2
Earthquake Region	Hatay	2	18.2
	Kahramanmaraş	2	18.2
	Gaziantep	4	36.3
	Malatya	2	18.2
	Adıyaman	1	9.0
Loss	Aunt	1	9.0
	Grandmother	1	9.0
	Cousin	1	9.0
	Friend	3	27.2
	Grandfather	1	9.0
	House	1	9.0
	Teacher	3	27.2
	N	11	100

### 2.3. Data Collection Tools

*Personal Information Form:* A personal information form was prepared by the researchers which included information about gender, class, age, sibling count, economic status, and the education status of parents of the participants.

*Perceived Ability to Cope with Trauma Scale:* The Perceived Ability to Cope with Trauma Scale is a 5-point Likert type scale developed by Bonano et al. (2011) to evaluate the perception of coping with traumatic experience. It consists of a total of 20 items and two sub-dimensions. Adaptation of the scale to Turkish and reliability and validity studies were carried out by Arı & Soysal (2019). Obtaining high scores according to the scale scoring result indicates that the perception of coping with trauma is high.

*The Brief Resilience Scale* : The Brief Resilience Scale was developed by Smith, Dalen, Wiggins, Tooley, and Christopher and Jennefer Bernard in 2008 to measure the psychological resilience of individuals. It was translated to Turkish by Doğan (2015) and tested for validity and reliability. The scale consists six items where the second, fourth, and sixth are reverse coded. Obtaining high scores according to the scale scoring result indicates that the level of psychological resilience is high.

*Adolescent Subjective Well Being Scale*: In the study, the Adolescent Subjective Well-Being Scale, developed by Eryılmaz (2009), was used to determine the subjective well-being levels of the participants. The scale has 15 items and four sub-dimensions (satisfaction with life, satisfaction with family relationships, satisfaction with relationships with important people, and positive emotions). High scores obtained from the sub-dimensions of the scale indicate a high level of adolescent subjective well-being.

#### **2.4. Procedure**

The survey study of the research was carried out in the second half of the 2022–2023 academic year. The application of the scales to the students was carried out by the researchers. Before the scales were applied, the students were given examples of how the scale should be filled out. In accordance with the confidentiality principle, the answers they gave will not be shared with the school administration in any way, so the students were asked to give honest answers in order to achieve the purpose of the research. The students were informed about the educational work to be carried out. At the end of the information, 11 students who came to Şırnak from the earthquake region were selected.

“High School-Earthquake Psychoeducation Program” is a psychoeducation program developed by experts working at the Ministry of National Education, General Directorate of Special Education and Guidance Services. The Earthquake Psychoeducation Program consists of the following sessions: Meeting, Group Rules Session, Let's Get to Know Our Feelings, Coping With Fear, Coping With Anxiety, Coping With Anger, Coping With Sadness, Being Optimistic, I'm Valuable, I'm Not Alone/My Sources of Support, What Motivates Me, My Future Expectations, and Ending. The psychoeducation program consists of eight modules and 11 sessions, with a termination session. Necessary tools and materials were prepared in line with the methods and techniques used in the sessions. In the psychoeducation program, question-answer, brainstorming, educational games, large group work, visualization, drawing, animation, and narration methods were used. Each session of the training program consists of one lesson hour (40 minutes). The content of the psychoeducation program of earthquake is as follows:

Module 1: Expression of Emotions

Session 1: Meeting, Group Rules

Session 2: Let's Get to Know Our Feelings

General Purpose: Helping students who have experienced an earthquake to distinguish their emotions that they cannot make sense of

Sub-Purposes:

1. To enable students to meet or reconnect with other students in the class after the earthquake
2. To ensure that students understand some rules to be taken and followed during psychoeducation
3. To enable them to express their feelings after the earthquake

Module 2: Coping With Emotions 1

Session 3: Coping With Fear

Session 4: Coping With Anxiety

General Purpose: Helping students who have experienced an earthquake to cope positively with the emotions they experience

Sub-Purposes:

1. Supporting students to learn ways to positively cope with feelings of anxiety and fear

### Module 3: Coping With Emotions 2

#### Session 5: Coping With Anger

#### Session 6: Coping With Sadness

General Purpose: Helping students who have experienced an earthquake to cope positively with the emotions they experience

Sub-Purposes:

1. Supporting students to learn ways to positively cope with feelings of anger and sadness

### Module 4: Optimism

#### Session 7: Being Optimistic

General Purpose: To increase the skills of students who have experienced earthquakes to cope with unplanned life events

Sub-Purposes:

1. To increase the optimism levels of the students

### Module 5: Self Esteem

#### Session 8: I'm Valuable

General Purpose: Supporting the development of self-perceptions of students who have experienced an earthquake

Sub-Purposes:

1. To help students realize how they perceive themselves
2. To support students to realize that they are valuable as they are.

### Module 6: Social Relations

#### Session 9: I'm Not Alone/My Support Sources

General Purpose: Developing support resources and help-seeking skills of students who have experienced earthquakes

Sub-Purposes:

1. Making students realize that they are not alone
2. To make students aware of the sources of support
3. To help them understand how and from whom to seek help when needed.

### Module 7: Motivation

#### Session 10: Things That Motivates Me

General Purpose: Supporting students who experienced earthquake to increase their motivation about academic and personal issues

Sub-Purposes:

1. Helping students realize their motivational sources

### Module 8: Goal Setting

#### Session 11: My Future Expectations

#### Session 12: Ending/Termination

General Purpose: Supporting students who experienced earthquake to set goals for the future

Sub-Purposes:

- 1.To help students put forward their general expectations from life
- 2.To support students to plan what they can do for the future.

## 2.5. Data Analysis

For the statistical analysis of the data obtained as a result of the research, non-parametric analyzes were used because the number of subjects in the participants was less than 30 and the scores of the groups in the measurements did not have a normal distribution (Bayram, 2009). Before the "High School Earthquake Psychoeducation Program" began, participants took a pre-test, and after the training was over, a post-test was administered. The Wilcoxon Signed Rank Test was used to test whether there was a significant difference between the participants's Perceived Ability to Cope With Trauma, Psychological Resilience, and Adolescent Subjective Well Being Scale pretest-posttest scores. The data obtained from the pre-test and post-test of the participants were analyzed with the SPSS-WINDOWS 25.0 package program.

## 2.6. Ethical

Ethical approval was obtained from Maltepe University Ethics Committee with the date of 08.06.2023 and number 2023/12-01

## 3. Findings

The findings obtained as a result of the research are presented below. Before moving on to the findings of the study, descriptive statistics regarding the pre-test and post-test scores of the participants regarding the scale of perceived ability to cope with trauma, psychological resilience and adolescent subjective well being scale are given in Table 2.

**Table 2.** *Perceived Ability to Cope with Trauma, Psychological Resilience and Adolescent Subjective Well-Being Scale Pre-Test Post-Test Mean and Standard Deviation Values of the Participants*

Scale	Test	<i>n</i>	<i>M</i>	<i>SD</i>
Perceived Ability to Cope with Trauma	Pretest	11	88.45	18.71
	Posttest		97.90	18.06
Psychological Resilience	Pretest	11	15.09	3.23
	Posttest		17.18	1.99
Adolescent Subjective Well-Being	Pretest	11	43.36	7.01
	Posttest		44.81	5.65

The Wilcoxon Signed Rank Test was used to test the significance of the pretest-posttest scores of the participants (Büyüköztürk, 2014b). Wilcoxon Signed Rank Test results are given in Table 3.

**Table 3.** *Wilcoxon Signed Rank Test Results on Pretest-Posttest Difference Scores for Perceived Ability to Cope with Trauma, Psychological Resilience, and Subjective Well-Being Scales*

	<i>Posttest Pretest</i>	<i>n</i>	Mean Rank	Sum of Ranks	<i>z</i>	<i>p</i>
Perceived Ability to Cope with Trauma	Negative rank	0	0.00	.00	-2.949	.003
	Positive rank	11	6.00	66.00		
	Equal	0				
Psychological Resilience	Negative rank	2	2.50	5.00	-2.084	.037
	Positive rank	7	5.71	40.0		
	Equal	2				
Adolescent Subjective Well-Being	Negative rank	6	5.83	35.0	-.178	.858
	Positive rank	5	6.20	31.0		
	Equal	0				

When Table 3 is examined, as a result of the research, there is a significant difference between the pretest and posttest scores of the participants from the perceived ability to cope with trauma and psychological resilience scale ( $z=-2.949$   $p<.01$ ;  $z=-2.084$   $p<.05$ ). There is no significant difference between the pretest and posttest scores of the participants from the subjective well-being scale ( $z= -.178$   $p>.05$ ). According to these results, it can be said that the psychoeducation program of earthquake applied was effective in increasing the coping with trauma and psychological resilience scores of the participants. It can be said that the psychoeducation program of earthquake applied in increasing the subjective well-being scores of the participants was not effective

#### **4. Discussion, Conclusion, and Recommendations**

Natural disasters which have a wide impact area cause material and morale losses and have traumatic effects on individuals. Hapke et al. (2006) stated that, for an event to be defined as a trauma, it must occur suddenly, cannot be brought under control, and have negative effects. Therefore, it is natural that the physical, social, emotional, and cognitive integrity of individuals, especially those who directly experienced the earthquake that took place on February 6, 2023, would be affected (APA, 2014).

The findings obtained as a result of the research show that the psychoeducation program of earthquake was effective in increasing the perception of coping with trauma of high school students affected by the earthquake. It is thought that handling the emotions experienced in the process during the training program including evaluating and normalizing the post-traumatic stress and anxiety and fear situations along with the participants' perceptions of social support due to the activities and the inclusion of cognitive flexibility are thought to be effective. In the research conducted by Fu, Chow, Li, & Cong (2018) and Fu (2013), it was concluded that cognitive flexibility is important in coping with trauma. It is seen that the cognitive reassessment made during the training program is effective in the development of individuals' perception of coping with trauma (Itzhaky, Weiss-Dagan, & Taubman-Ben-Ari, 2018). Studies show that increased coping skills are effective in post-traumatic development (He, Xu, & Wu, 2013).

Another finding of the study shows that the earthquake psychoeducation program was effective in increasing the psychological resilience of high school students affected by the earthquake. Losses and psychological distress experienced during the earthquake can affect the psychological resilience of the person (Carter et al., 2016). It is known that earthquakes constitute a risk factor for psychological resilience (Gizir, 2007). Psychological resilience is also known to be a protective factor in individuals' ability to cope with post-traumatic stress (İkizer, Karancı, & Doğulu, 2016). It is thought that activities aimed at optimism, self-esteem, social support resources, goals and future expectations with students within the scope of psychoeducation are effective in achieving this result. In the study conducted by Berger, Abu-Raiya, & Benatov (2016), it was concluded that school-based resilience training improves the self-efficacy levels, hope for the future, and positive coping strategies of individuals affected by the earthquake. It is seen that the trainings are an important factor in the psychological resilience of individuals (Akar, 2018; Chen et al., 2014). Participants' increased ability to cope with trauma also supports their psychological resilience (Chen et al., 2014). In addition, as individuals' psychological resilience increases, post-traumatic stress symptoms decrease (Mesidor, & Sly, 2019).

In the last finding of the study, it was concluded that although the psychoeducation program of earthquake increased the psychological well-being of high school students affected by the earthquake, this increase was not at a significant level. Life satisfaction and positive and negative affects are components of subjective well-being. The increase in negative emotions of people and the decrease in their satisfaction with life are the symptoms of post-traumatic stress. It is very natural for an earthquake of this magnitude to affect the level of well-being of individuals (Rask et al., 2002). In a sudden, life-threatening earthquake, people need time to feel better. It is thought that with the continuation of the support to individuals and their return to their normal lives and routines, their satisfaction with life will improve over time. It is expected that sustainable social support to be given to adolescents affected by the earthquake will contribute to their well-being and development (Jia, Liu, Ying, & Lin, 2017). Studies have shown that earthquake preparedness is effective in the level of psychological well-being (Olivia, 2021).

When the results of the research were evaluated, it was concluded that, in general, the earthquake psychoeducation program that was applied was effective in increasing the perceptions of coping with trauma and psychological resilience of high school students affected by the earthquake. One of the most important achievements of psychoeducational studies is the social support network formed within the group. Thanks to this support, group members seeing that other members are also experiencing the problems they are experiencing contributes to them not feeling alone. It has been seen, once again, that the perceived social support is important in reducing the symptoms of post-traumatic stress (Abellon, 2022; Jia et al., 2017). Observing that other members have successfully overcome similar difficulties is thought to be an important factor in instilling hope in themselves. It is thought that the specified group dynamic has an important contribution to obtaining these results. Studies conducted with individuals affected by earthquakes reveal that



social support (Jia et al., 2017; Zhou, Wu, & Zhen, 2017; Şakiroğlu, 2019) is an important factor in their coping with trauma and their post-traumatic development. One of the limitations of this study is that only one group was used in this study, and no control group was included. Due to the situation in the region, only a single group could be formed for the study. The inclusion of only high school students in this study is another limitation of the study. It is recommended that other members of the family also take part in new studies, if possible. At the same time, the inclusion of teachers in the training program is important for the social support to be provided to students. The implementation of earthquake psychoeducation programs within the scope of developmental, preventive, remedial guidance and psychological counseling services can be extended at pre-school, primary, secondary, and high school levels.

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