

Original Research

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The Level of Trauma and Hopelessness of Survivor Nursing Students of the February 6, 2023, Kahramanmaraş Earthquakes: The Case of Türkiye

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Abstract

Objectives: To assess the post-earthquake trauma and hopelessness levels of nursing students due to the earthquakes that occurred on February 6, 2023.

Methods: This study was conducted between April and May 2023 in the Nursing Department in a province located in Southeastern Türkiye using the face-to-face interview technique. The study was completed with 276 students in line with the power analysis. The data were collected using a questionnaire, the Scale that Determines the Level of Post-Earthquake Trauma (SDLPET), and the Beck Hopelessness Scale (BHS).

Results: The mean SDLPET and BHS scores of the students were 55.45 ± 13.58 and 9.38 ± 4.53 , respectively. Some 12.3% of the nursing students lost their friends due to the earthquake, 80.4% did not receive any earthquake training, 46% needed psychological support, 48.6% needed financial support, 49.6% needed social support, 37% had sleep problems, 72.8% experienced hopelessness, and the quality of life of 67.8% of the students was negatively affected due to the hopelessness they experienced.

Conclusions: It was found that the level of post-earthquake trauma and hopelessness of the students was moderate, and a positive and significant correlation was found between trauma and hopelessness scores.

Earthquakes rank first among the types of disasters that cause loss of life and property in Türkiye. On February 6, 2023, a state of emergency was announced in the area covering the provinces of Hatay, Gaziantep, Malatya, Diyarbakır, Kilis, Şanlıurfa, Adıyaman, Osmaniye, Adana, Elazığ, and Kahramanmaraş and was declared a disaster region due to the Kahramanmaraş (7.7 Mw and 7.6 Mw) earthquakes. According to official figures, 50 783 people lost their lives, 115 353 people were injured, and 37 984 buildings collapsed due to the earthquakes. These figures were higher than the losses reported in the 1939 Erzincan earthquake and the 1999 Kocaeli earthquake, 2 major earthquakes that occurred in Türkiye in the last century.¹

Natural disasters such as earthquakes are considered important life events because they cause trauma to individuals.² The effects of traumatic events may vary depending on individual differences. Not all traumatic events cause similar reactions in individuals, and those who are exposed to the same traumatic event may react differently.³ Even though psychological problems caused, particularly by earthquake trauma, may manifest themselves at the time of trauma, they may appear more frequently and recurrently in the future.² One of the variables closely related to trauma is hopelessness, which refers to expectations that desirable results will not be realized or unfavorable results will be obtained, and nothing will change the situation.⁴ Hopelessness includes one's lack of well-being, unwillingness, and aimlessness. In this respect, it covers a negative cognitive evaluation of the present and future in which life events are perceived negatively.^{5,6} A study conducted after the Van earthquake reported that 42.6% of students had mild traumatic stress symptoms, 36.7% had moderate traumatic stress symptoms, and 19.4% had moderate-severe traumatic stress symptoms.² In another study conducted after the February 6 earthquake, it was found that the mean score of post-earthquake trauma symptoms was high, and there was a significant negative correlation between hope and well-being and trauma symptoms.⁷ In line with this information, the aim of this study was to assess the post-earthquake trauma and hopelessness levels of nursing students due to earthquakes.

Methods

Study Location, Period, and Design

The study was conducted as descriptive cross-sectional on students who were studying at the Nursing Department of the Faculty of Health Sciences of a state university in a province located in the Southeastern Anatolia region of Türkiye and experienced the February 6, 2023, earthquake.

Population and Sample

The population of the study consisted of students of the Nursing Department of the Faculty of Health Sciences. The sample comprised 276 nursing students studying at this faculty in line with the power analysis (margin of error of 5% and confidence interval of 95%).

Inclusion Criteria

Inclusion criteria were being a student attending the department of nursing who experienced the February 6 earthquake, aged over 18 years, able to communicate, and agreeing to participate in the study voluntarily. Students who did not meet these criteria were excluded from the study.

Data Collection

The data were collected using a questionnaire that was prepared based on a literature review,²⁻⁷ the Scale that Determines the Level of Post-Earthquake Trauma (SDLPET), and the Beck Hopelessness Scale (BHS).

Questionnaire

The questionnaire consisted of 31 questions about the sociodemographic and earthquake-related characteristics of the nursing students.

Scale that Determines the Level of Post-Earthquake Trauma (SDLPET)

In 2013, Tanhan and Kayri developed the scale and conducted its validity and reliability study. This 5-point Likert-type scale has 20 items. The total score of the scale varies between 20 and 100 and a high score signifies a high level of trauma.⁸ The Cronbach's Alpha value of the scale was found as 0.873 in this study.

Beck Hopelessness Scale (BHS)

The BHS was developed by Beck, Lester, and Trexler, and its validity and reliability study was conducted by Seber (1991) and Durak (1993). Each item of the 20-item scale is answered as yes/no. Total score ranges from 0-20; 0-3 points indicate no or minimal hopelessness, 4-8 points indicate a low level of hopelessness, 9-14 points indicate a moderate level of hopelessness, and ≥ 15 points indicate a high level of hopelessness.^{9,10} In the present study, the Cronbach's Alpha value of the scale was found as 0.813.

Ethical Considerations

The study was conducted in accordance with the Declaration of Helsinki. The data were collected after receiving approval from Scientific Research Ethics Committee (2023/73), permission from the institution. Written consent was obtained from the students.

Statistical Analysis

Data were evaluated using a SPSS 25 computer program. Frequency, percentage, mean, and standard deviation were used as descriptive statistics, and the Shapiro-Wilk test was used to check the conformity of continuous variables to normal distribution. Student's *t* test, the Mann-Whitney *U* test, and the Kruskal-Wallis test were used to examine the differences between categorical

variables. Spearman's correlation test was used to examine the correlation between the scale scores. The level of statistical significance was accepted as $P < 0.05$.

Results

It was determined that the mean SDLPET and BHS scores of the students were 55.45 ± 13.58 and 9.38 ± 4.53 , respectively. The mean age of the nursing students was 21.38 ± 2.33 years, 73.2% were female, 51.4% resided in Gaziantep, and 41.7% had a slight damage to their houses due to the earthquake. (Table 1).

Students' Earthquake-related Characteristics and SDLPET and BHS Scores

In the study, it was determined that 80.4% received no earthquake training, 85.5% thought that the earthquake negatively affected their education process, 54.3% had problems in accessing any computer, and 46.7% had problems with accessing the internet. The students who did not live with their families after the earthquake, lost a friend due to the earthquake, and had problems in accessing the internet for education after the earthquake had higher mean SDLPET scores ($P < 0.05$). The students who had not received earthquake training, had problems in accessing computer and internet for education, and whose education was negatively affected by the earthquake had higher mean BHS scores ($P < 0.05$) (Table 2).

Effects of the Earthquake and SDLPET and BHS Scores

After the earthquake, 37% of the students had sleep problems, 72.8% experienced hopelessness, and the quality of life of 67.8% was negatively affected due to the hopelessness they experienced. The mean SDLPET and BHS scores were higher in students who needed psychological, financial, and social support after the earthquake; those who experienced hopelessness; and students with an impaired quality of life associated with hopelessness ($P < 0.05$) (Table 3).

Analysis of the Correlation Between Mean SDLPET and BHS Scores of the Students

There was a positive and significant correlation between the mean SDLPET and BHS scores of the students ($P < 0.05$) (Table 4).

Discussion

The earthquakes that occurred in Kahramanmaraş in Türkiye on February 6, 2023, negatively affected individuals both socially and economically, and in terms of health. It has been reported that individuals exposed to such disasters frequently experience trauma and hopelessness problems that negatively affect their psychological health. Earthquakes in particular bring about a psychologically traumatic situation and make it difficult for individuals to readjust to daily life. In this context, the post-earthquake trauma and hopelessness levels of nursing students who were survivors of the earthquake were evaluated in this study.

Disasters in various parts of the world cause significant losses at national and international levels and have dramatic effects on individuals. One of the most prominent examples of disasters is earthquakes, during which material and moral losses as well a long-term lack of fulfillment of basic needs can cause confusion, anxiety, and intense stress in victims of all age groups.¹¹ After the earthquakes

Table 1. Comparison of SDLPET and BHS Scores with some characteristics of the students

Characteristics	Number (%)	SDLPET	<i>P</i>	BHS	<i>P</i>
Age	21.38 ± 2.33				
Gender					
Female	202(73.2)	55.75 ± 13.40	0.660	9.34 ± 4.54	0.737
Male	74(26.8)	54.97 ± 14.15		9.51 ± 4.54	
Place of residence during university education					
At home with family	111(40.2)	53.85 ± 13.24	0.400	8.59 ± 4.51	0.105
At home with others	13(4.7)	57.15 ± 15.79		9.07 ± 3.98	
At dormitory	146(146)	56.82 ± 13.79		10.02 ± 4.59	
At home alone	6(2.2)	52.16 ± 6.82		10.00 ± 3.84	
Family income					
Income less than expenses	74(26.8)	57.55 ± 13.57	0.558	10.16 ± 4.76	0.281
Income equal to expenses	177(64.1)	54.61 ± 13.42		9.20 ± 4.46	
Income more than expenses	25(9.1)	56.20 ± 14.58		8.64 ± 4.62	
Employment status					
Employed	18(6.5)	58.72 ± 18.29	0.747	9.11 ± 4.72	0.641
Unemployed	258(93.5)	55.32 ± 13.21		9.42 ± 4.56	
The province where they were during the earthquake					
Adana	20(7.2)	54.75 ± 11.66	0.316	9.55 ± 4.17	0.428
Adiyaman	6(2.2)	62.50 ± 13.39		11.16 ± 2.56	
Osmaniye	7(2.5)	60.85 ± 13.89		9.00 ± 3.82	
Gaziantep	142(51.4)	53.90 ± 14.44		9.03 ± 4.59	
Kahramanmaraş	10(3.6)	60.20 ± 14.91		10.33 ± 4.97	
Kilis	15(5.4)	55.86 ± 13.66		11.86 ± 4.92	
Hatay	16(5.8)	58.18 ± 11.57		9.00 ± 3.82	
Malatya	6(2.2)	58.33 ± 17.86		11.50 ± 4.59	
Şanlıurfa	33(12.0)	58.96 ± 12.00		9.06 ± 4.78	
Elazığ	6(2.2)	55.00 ± 7.23		11.16 ± 6.14	
Diyarbakır	15(5.4)	52.20 ± 11.34		8.73 ± 4.65	
Damage to the house where their family lived due to the earthquake					
Undamaged	131(47.5)	53.79 ± 12.94	0.075	8.80 ± 4.70	0.064
Slightly	115(41.7)	56.00 ± 13.41		9.70 ± 4.35	
Moderately	22(8.0)	59.31 ± 13.89		11.23 ± 4.40	
Heavily	7(2.5)	63.71 ± 17.77		8.85 ± 3.18	
Collapsed	1(0.4)	92.00 ± 0.0		19.00 ± 0.0	
Total	276(100)	55.54 ± 13.58		9.38 ± 4.53	

*Mann Whitney U test

**Kruskal Wallis test

in Türkiye on February 6, 2023, approximately 380 000 students and 45 000 academic and administrative staff continued their educational activities in 16 universities in the earthquake zone where the present study was conducted. Dormitory buildings in the provinces affected by the earthquake were also damaged.¹² Accordingly, students encountered both the physical and psychological effects of the earthquake and problems related to their education process and housing. These negativities additionally affected the trauma and hopelessness levels of the students.

In the study conducted by Karabacak Çelik in Türkiye after the February 6 earthquake, it was reported that the mean post-earthquake trauma score was considerably higher than the threshold value,⁷ but the post-earthquake trauma level of university students after the Van earthquake was far below the average value.⁵ In a study conducted after the 8.0 magnitude earthquake in the Sichuan region of China, it was found that 14.1% of university students were diagnosed as having posttraumatic stress disorder (PTSD), and the prevalence of PTSD was significantly higher in

Table 2. Comparison of SDLPET and BHS Scores of the students with some characteristics related to the earthquake

Characteristics	Number (%)	SDLPET	<i>P</i>	BHS	<i>P</i>
Place of residence after the earthquake					
Own house	221(80.1)	55.01 ± 13.07	0.130	9.18 ± 4.64	0.223
Container-Tent	6(2.2)	71.16 ± 16.94		11.66 ± 4.08	
At home of another relative	5(1.8)	55.00 ± 13.89		12.40 ± 3.43	
Dormitory	44(15.9)	56.13 ± 14.80		9.83 ± 4.21	
Staying with family after the earthquake					
Yes	206(74.6)	54.70 ± 13.57	0.053	9.10 ± 4.59	0.132
No	70(25.4)	58.01 ± 13.40		10.28 ± 4.38	
Loss of life					
No loss	160(58.0)	52.98 ± 12.85	0.007	9.07 ± 4.89	0.437
First-degree loss	2(0.7)	50.50 ± 0.70		10.00 ± 0.0	
Loss of distant relatives	80(29.0)	59.01 ± 13.88		9.83 ± 3.83	
Loss of friends	34(12.3)	59.02 ± 14.14		9.88 ± 4.63	
Receiving training on the earthquake					
Yes	54(19.6)	55.87 ± 14.53	0.890	9.19 ± 4.76	0.034
No	222(80.4)	55.46 ± 13.37		9.96 ± 4.48	
Preparing an emergency kit after an earthquake					
Yes	98(35.5)	56.35 ± 12.90	0.515	8.86 ± 4.71	0.102
No	178(64.5)	55.09 ± 13.96		9.96 ± 4.47	
The most used source to get information about the earthquake					
Television/radio	83(30.1)	55.33 ± 13.41	0.520	9.66 ± 4.47	0.480
Social media	193(69.9)	55.63 ± 13.69		9.29 ± 4.61	
Negative effect of the earthquake on the education process					
Yes	236(85.5)	55.51 ± 13.20	0.936	9.64 ± 4.63	0.037
No	40(14.5)	55.72 ± 15.84		7.92 ± 3.84	
Problems in accessing computers for education after the earthquake					
Yes	150(54.3)	56.88 ± 13.36	0.079	10.48 ± 4.39	0.000
No	126(45.7)	53.94 ± 13.72		8.08 ± 4.37	
Problems in accessing the internet for education after the earthquake					
Yes	129(46.7)	58.17 ± 12.98	0.003	10.44 ± 4.22	0.000
No	147(53.3)	53.23 ± 13.72		8.46 ± 4.61	
Total	276(100)				

students living in the region severely affected when compared with those in the less affected region ($P < 0.001$). Also, students who were injured in the earthquake, lost a first-degree relative, those who were confronted with dead bodies, and male students were more likely to experience PTSD.¹³

In the present study, it was found that the mean SDLPET score of the students was above the threshold of 55.54±13.58 (medium). Female students; those who were living with people outside the family; had an income less than their expenses; had a collapsed house; lived in the provinces of Adiyaman, Osmaniye, and Kahramanmaraş; lived in container-tents after the earthquake; and students who had problems in accessing computers and the internet for education, and needed psychological, financial, and social support had higher levels of post-earthquake trauma. Although these results show that students living

in different regions experienced different levels of trauma, the higher levels of trauma reported in studies conducted after the February 6 earthquake may be associated with the fact that the destructive effects of this earthquake were significant and it affected a great number of people living in many provinces. Moreover, the negative changes in the students' lives after the earthquakes may have negatively affected them as much as the trauma itself.

In this sense, these results provide important clues for effective planning and implementation of disaster management and psychosocial support services especially after earthquakes. In particular, taking into account the different levels of trauma according to different types of disasters and the characteristics of the affected regions may help to better understand the post-disaster needs of communities and create appropriate support mechanisms.

Table 3. Comparison of the effects of the earthquake with SDLPET and BHS scores

Characteristics	Number (%)	SDLPET	<i>P</i>	BHS	<i>P</i>
Needing psychological support during the earthquake period					
Yes	127(46.0)	60.42 ± 12.25	0.000	10.27 ± 4.28	0.004
No	149(54.0)	51.38 ± 13.31		8.63 ± 4.62	
Receiving psychological support during the earthquake period					
Yes	18(6.5)	61.11 ± 12.42	0.035	9.44 ± 2.20	0.996
No	258(93.5)	55.15 ± 13.60		9.38 ± 4.66	
Needing financial support during the earthquake period					
Yes	134(48.6)	57.52 ± 13.31	0.046	10.24 ± 4.53	0.004
No	142(51.4)	53.67 ± 13.62		8.57 ± 4.40	
Receiving financial support during the earthquake period					
Yes	28(10.1)	56.75 ± 18.91	0.656	9.28 ± 4.32	0.829
No	248(89.9)	55.40 ± 12.89		9.39 ± 4.56	
Needing social support during the earthquake period					
Yes	137(49.6)	58.06 ± 12.84	0.005	10.05 ± 4.46	0.020
No	139(50.4)	53.05 ± 13.88		8.72 ± 4.53	
Receiving social support during the earthquake period					
Yes	28(10.1)	60.60 ± 14.01	0.033	8.92 ± 3.99	0.453
No	248(89.9)	54.97 ± 13.44		9.43 ± 4.60	
Problems experienced after the earthquake (n:120)					
Sleep problems	102(37.0)	58.69 ± 12.92	0.397	9.20 ± 4.61	0.375
Anxiety	10(3.6)	64.50 ± 13.93		8.50 ± 3.83	
Fatigue	8(2.9)	64.12 ± 16.22		11.62 ± 4.53	
Consulting a physician for problems					
Yes	9(3.3)	61.88 ± 17.24	0.124	12.00 ± 3.77	0.090
No	267(96.7)	55.32 ± 13.43		9.29 ± 4.54	
Using any method to cope with problems					
Yes	27(9.8)	57.96 ± 12.61	0.197	8.07 ± 4.26	0.109
No	249(90.2)	55.28 ± 13.68		9.53 ± 4.55	
The method used (n:27)					
Worship	2(0.7)	60.00 ± 2.82	0.443	7.50 ± 6.36	0.917
Trying not to think	7(2.5)	61.57 ± 13.04		7.85 ± 4.18	
Listening to music	6(2.2)	50.33 ± 18.05		6.83 ± 4.16	
Applying relaxation techniques	12(4.3)	59.33 ± 9.56		8.91 ± 4.50	
Causing hopelessness by earthquake					
Yes	201(72.8)	57.81 ± 13.26	0.000	9.84 ± 4.55	0.012
No	75(27.2)	49.46 ± 12.62		8.16 ± 4.29	
Negative effect of hopelessness on quality of life					
Yes	187(67.8)	59.05 ± 12.72	0.000	10.11 ± 4.49	0.000
No	89(32.2)	48.16 ± 12.38		7.86 ± 4.25	
Using any method to manage hopelessness					
Yes	51(18.5)	56.49 ± 11.57	0.578	7.82 ± 3.82	0.009
No	225(81.5)	55.32 ± 14.01		9.74 ± 4.61	

(Continued)

Table 3. (Continued)

Characteristics	Number (%)	SDLPET	P	BHS	P
Methods used for hopelessness (n:51)					
Living in the moment	6(2.2)	55.83 ± 8.54	0.889	7.33 ± 2.73	0.606
Positive thinking	22(8.0)	55.36 ± 11.49		7.31 ± 3.30	
Believing that bad days will pass	23(8.3)	57.73 ± 12.59		7.31 ± 3.30	
Total	276(100)				

Table 4. The correlation between SDLPET and BHS scores of students

	BHS <i>r</i>	<i>P</i>
SDLPET	0.248 **	0.000

Correlation is significant at the level of 0.01 (2-tailed)..

Among the survivors of the Marmara earthquake in our country, hopelessness was the most common depression symptom, and regarding hopelessness, the survivors stated that “tomorrow is a dead end for me” and “I am hopeless because I have nothing,” and some said that they could not make plans due to the possibility of dying in future earthquakes.¹⁴ It is also emphasized that disasters can leave victims with a deep sense of hopelessness and shock.¹⁵ In a study conducted after the Van earthquake, it was determined that university students had a low level of hopelessness. Contrastingly, a study conducted after the February 6 earthquake reported that the hope level of students was “medium.”^{6,7} In the present study, it was determined that the hopelessness level of the nursing students was “medium.” Male students; those who lived in dormitories; had an income less than their expenses; were living in the provinces of Kilis, Malatya, and Elazığ; had a collapsed house; were staying with another relative; lost a first-degree relative after the earthquake; stated that their education process was negatively affected; had problems in accessing computer and the internet; needed psychological, financial, and social support; and students who had an impaired quality of life associated with the hopelessness they experience, had high levels of hopelessness. These results reveal that post-earthquake hopelessness is a common situation.

The feeling of hopelessness may be associated with experiencing uncertainties and fears about the future. In particular, post-earthquake hopelessness may negatively affect the quality of life of individuals and increase their need for psychosocial support.

Therefore, understanding the effects of natural disasters on human psychology and developing strategies to cope with these effects are important steps for societies to cope with and recover from disasters. It is thought that the results of this study may help to design policies and interventions to reduce the psychological effects of disasters in a more effective way.

As a result of the devastating effects of the February 6 earthquakes, many students endured various losses and had to leave their homes and dormitories hurriedly. After the earthquake, the Turkish education system went through various changes and universities in the earthquake region switched to distance education, and some universities even transferred their students to other universities. Due to these changes and the effects of the earthquake, students encountered some negativities.

Although there are a limited number of studies in the literature examining the relationship between post-earthquake trauma and

hopelessness levels, these studies have generally revealed a positive relationship between these 2 conditions.^{6,16} Similarly, a significant positive correlation was found between mean trauma and hopelessness scores in the present study. This shows that traumatic experiences after earthquakes can increase students' hopelessness levels and cause a psychologically challenging process. This result once again reveals the importance of post-earthquake psychosocial support services. The effects of trauma and the level of hopelessness can be reduced, especially through psychological support and counseling services provided to earthquake victims.

Conclusion and Recommendations

It was determined that the post-earthquake trauma and hopelessness levels of nursing students were “moderate,” and hopelessness increased as the level of trauma increased. The students who were female; lived with people other than their families; had an income less than expenses; were living in the provinces of “Adiyaman, Osmaniye, and Kahramanmaraş;” had a collapsed house due to the earthquake; had to live in “container-tents;” lost a friend in the earthquake; had problems in accessing computers and the internet for education; needed psychological, financial, and social support; experienced anxiety and hopelessness after the earthquake; and stated that their quality of life was negatively affected as a result of the hopelessness they experienced had a high SDLPET mean score. In addition, the students who were male; were living in dormitories; had an income less than expenses; were living in the provinces of Kilis, Malatya, and Elazığ; had a collapsed house; were staying with another relative; lost a first-degree relative; stated that their education was negatively affected by the earthquake; had problems in accessing computer and internet for education; needed psychological, financial, and social support; were experiencing post-earthquake fatigue; and had an impaired quality of life due to the hopelessness they experienced had a high BHS. In accordance with the findings of this study, it is evident that the trauma and hopelessness levels experienced by nursing students following the earthquake are influenced by not only educational factors but also by various personal, social, and psychological dimensions. Therefore, the development and implementation of multifaceted support programs and educational policies are essential to facilitate the recovery of students affected by the earthquake and to enhance their preparedness for future disasters. It is recommended that countries establish context-specific organizational frameworks for earthquake preparedness, address urgent housing requirements, ensure the completion of infrastructure necessary for internet connectivity, and implement measures to guarantee the seamless continuation of educational activities.

Competing interest. The authors declare that they have no conflict of interest.

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Ethical standard. This study was conducted in accordance with the “Declaration of Helsinki” and the necessary permissions were obtained from the ethics committee (2023/73). Informed consent was obtained from the nursing students for data collection.

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