

## DETERMINATION OF THE POST-EARTHQUAKE TRAUMA LEVELS OF NURSING STUDENTS LIVING IN THE EARTHQUAKE AREA IN TURKEY: THE CASE OF KİLİS

### Türkiye’de Deprem Bölgesinde Yaşayan Hemşirelik Öğrencilerinin Deprem Sonrası Travma Düzeylerinin Belirlenmesi: Kilis Örneği

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#### ABSTRACT

This study was conducted to determine the trauma levels of nursing students after the great Kahramanmaraş earthquake in Turkey. This study is cross-sectional and descriptive. A total of 365 nursing students made up the study's sample. The "Post-Earthquake Trauma Level Determination Scale" and the "Introductory Characteristics Information Form" were used to gather data. The total score average of the Students' Post-Earthquake Trauma Level Determination Scale was found to be  $57.78 \pm 16.62$  for the current sample. In the study, it was determined that the post-earthquake trauma levels of female students, those whose homes were heavily damaged, those whose relatives were trapped under rubble, and those who had problems finding food and water immediately after the earthquake were statistically significantly higher ( $p < 0.05$ ). Among the scale sub-score averages, cognitive structuring, emotional limitation and affective sub-dimension average scores were found to be high. After the disaster, necessary trainings can be urgently planned in schools to reduce and prevent the trauma that may occur in students. It may also be recommended that psychological counseling and guidance services be provided effectively in schools.

**Keywords:** Disaster, Earthquake, Nursing, Nursing students, Trauma.

#### ÖZ

Bu çalışma, Türkiye’de meydana gelen büyük Kahramanmaraş depremi sonrası hemşirelik öğrencilerinin travma düzeylerini belirlemek amacıyla yapıldı. Tanımlayıcı ve kesitsel tipte bir çalışmadır. Araştırmanın örneklemini 365 hemşirelik öğrencisinden oluştu. Veriler “Tanıtıcı Özellikler Bilgi Formu ve “Deprem Sonrası Travma Düzeyini Belirleme Ölçeği” kullanılarak toplandı. Öğrencilerin Deprem Sonrası Travma Düzeyini Belirleme Ölçeği toplam puan ortalaması mevcut örneklem için  $57.78 \pm 16.62$  olarak bulundu. Araştırmada kız öğrencilerin, evleri ağır hasarlı olanların, yakınları enkaz altında kalan, depremden hemen sonra yiyecek ve su bulmada sorun yaşayan öğrencilerin deprem sonrası travma düzeylerinin istatistiksel olarak anlamlı seviyede daha yüksek olduğu belirlendi ( $p < 0.05$ ). Ölçek alt puan ortalamalarından bilişsel yapılandırma, heyecansal sınırlılık ve duyuşsal alt boyut puan ortalamaları yüksek olduğu tespit edildi. Afet sonrası, öğrencilerde oluşabilecek travmayı azaltmak ve önlemek için okullarda gerekli eğitimlerin acil olarak planlanması yapılabilir. Yine okullarda psikolojik danışmanlık ve rehberlik hizmetlerinin etkin olarak hizmet vermesi önerilebilir.

**Anahtar kelimeler:** Afet, Deprem, Hemşire, Hemşirelik öğrencileri, Travma.

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## INTRODUCTION

Disasters experienced all over the world are phenomena that significantly affect individuals and masses. For this reason, it is important for all units of society to be prepared for disasters and to take the necessary precautions on these issues (Arıca, Çakır & Kağnıcı, 2023). Disaster and Emergency Management Presidency (AFAD) defines a disaster as "a nature, technological or human-induced event that causes physical, economic and social losses for the whole or certain segments of the society, stops or interrupts normal life and human activities, and for which the affected society has insufficient coping capacity (AFAD, 2019). The definition of disaster by the World Health Organization (WHO) is "a sudden ecological phenomenon that is unexpected, exceeds the facilities and capacity of the institution, disrupts normal functioning, and requires external assistance." The most important feature for an event to be called a disaster is the need for external assistance. Foreign aid does not mean international aid. It is when the society where the disaster occurs cannot cope with the event and it is necessary to get help from outside that region or society (WHO, 2013). Other features are; The disaster causes significant losses, disrupts the daily lives of individuals, affects settlements, and local governments have difficulty coping with the disaster (Arıca, Çakır & Kağnıcı, 2023).

With technological developments in the world, disasters have increased in terms of quality and quantity in recent years. It can be said that social, economic and political facts are important, and urbanization also plays an important role in this increase (Baack & Alfred, 2013). Turkey is a nation situated on the very seismically active Anatolian plate, where more than 20 significant earthquakes have occurred during the 1900s due to its strategic location. Many lives and property were lost in the 269 earthquakes that occurred in our country between 1900 and 2023. On February 6, 2023, two major earthquakes occurred with the epicenter in the Elbistan (Mw7.6) and Pazarcık (Mw7.7) districts of Kahramanmaraş, causing great destruction and losses in a total of 11 provinces. This major disaster caused the death of more than 48 thousand people, damage to around half a million buildings, and significant financial losses. This disaster is the biggest disaster seen in our country in recent years (2023 Kahramanmaraş and Hatay earthquakes report, 2023). Because of its high rates of morbidity and mortality and the significant financial losses it causes, it becomes a major public health concern both in our nation and around the world (Kalanlar, 2013).

Disasters, create different effects on individuals and are traumatic events that negatively affect the normal course of life, both in people's lives and because of their sudden occurrence. The fact that the problems experienced by individuals continue after the earthquake shows that

the effects of the earthquake on people last a very long time. Although earthquake trauma is not very obvious in the first moments, it can lead to more frequent and recurring psychological problems in the future (Kurt & Gülbahçe, 2019). In psychological trauma, an individual may remain under the influence of an event she/he experienced. Sometimes, vital integrity may be threatened. What is expressed here with vital integrity is the spiritual and physical unity of the person. Traumatic experiences can have short or long-term effects on individuals or societies. As a result of natural disasters (house collapse, loss of life, etc.), various emotional, cognitive and behavioral reactions may develop in every individual of the society (Bağbancı, 2015).

Nurses, who constitute the majority of health professionals, have a great importance and role in disaster management. Nurses begin to learn the knowledge and equipment to manage the disaster process during their student years (Toraman & Konal, 2023).

Earthquakes; while it causes severe destruction in the areas where it occurs, it negatively affects individuals in many physical, spiritual and social areas and also causes psychological destruction in individuals. After the earthquake, especially children and young individuals are exposed to trauma, and social trauma is also experienced (Ataç & Özsezer, 2021). In this process, the fact that nursing students are young and well-intentioned compared to other individuals causes them to be more vulnerable and less sensitive to possible risks (Şahin, Lamba & Öztop, 2018).

Young people studying and graduating from the health department need to be aware of their knowledge and awareness about disasters, the extent of the trauma they experience, and how to cope and manage the process (Avcı, Kaplan & Ortabağ, 2020). This study was conducted to determine the trauma levels of nursing students after the Kahramanmaraş earthquake.

## **MATERIAL AND METHOD**

### **Design**

This study is cross-sectional and descriptive.

### **Setting and Participants**

The study was carried out among nursing students in the 2022–2023 academic year at a Turkish state university between May and July of that year. There were 469 nursing students in the research population. The G\* Power software was utilized to analyze sample size power. 212 students, with a 95% confidence interval and a 0.05 error level, were found to be the sample

size. 365 students who volunteered to participate in the research were included in the study at its conclusion.

### **Data Collection Tools**

Data was collected by creating web-based survey forms due to the earthquake. “Post-Earthquake Trauma Level Determination Scale” and “Introductory Features Information Form” were used in data collection. This form consists of information about the age, gender, education process of nursing students and 20 questions about the earthquake process (Avcı, Kaplan & Ortabağ, 2020; Kalanlar, 2013; Toraman & Konal, 2023).

### **Post-Earthquake Trauma Level Determination Scale (PETLDS)**

The scale developed by Tanhan and Kayri (2013) aims to measure the levels of trauma that may occur in individuals after an earthquake. There are twenty items total on the five-point Likert scale. As a result, "Behavior Problems" is the first factor, "Excitatory Limitation" is the second, "Affective" is the third, "Cognitive Configuration" is the fourth, and "Sleep Problems" is the fifth. Accordingly, the first factor is “Behavior Problems”; the second factor is “Excitatory Limitation”; The third factor is named "Affective", the fourth factor is "Cognitive Configuration" and the fifth factor is "Sleep Problems". For the first sub-dimension, the Cronbach's alpha internal consistency coefficient is 0.64; for the second sub-dimension, it is 0.75; and for the third sub-dimension, it is 0.61. For the fourth and fifth sub-dimensions, the coefficient was computed as 0.68 and 0.70, respectively. All of the PETLDS items had an internal reliability coefficient (Cronbach's alpha) of 0.87. A score on the scale between  $52.385 \pm 5.051$  corresponds to a threshold value that indicates traumatization in people. A number above or below this mark denotes a high or low degree of post-quake traumatic symptom (Tanhan & Kayri, 2013).

### **Data Analysis**

The Statistical Package for Social Science (SPSS) 25.0 was used to evaluate the data. The study employed number, percentage, mean, and min-max as descriptive statistics. The Kolmogorov-Smirnov distribution test was employed to investigate the presence of missing values and the presence of a normal distribution in the research group's data set. In order to investigate the correlation between descriptive characteristics that could be associated with the degree of trauma following an earthquake, based on the type of data and the normal distribution; Student T, Mann Whitney U., Kruskal-Wallis, Spearman, One-Way Anova Tests of correlation

were applied. The variables in the study were accepted to have a statistical significance level of  $p < 0.05$ .

### Limitations

Since the data of this research was collected only from students studying at the university where the research was conducted and living in the earthquake area, its generalizability is limited. In addition, the fact that the research was conducted after the earthquake is another limitation of this research. Therefore, the findings cannot be generalized to all nursing students.

### Ethics

For the research, ethics committee approval was obtained from a university's non-invasive clinical research ethics committee (Ethics Committee No: E.22857-2023/8), official institutional permission from the university where the research was conducted, and permission to use the scale was obtained from the authors via e-mail. Volunteerism was taken as a basis by writing the purpose and content of the research in the form prepared online. The principles of the Helsinki Declaration were followed in the conduct of this study.

### RESULTS

It was determined that the average age of the students participating in the research was 21.14 ( $\pm 1.729$ ), 66.6% were female, 33.2% were first graders, and 83.6% were of medium economic status. It was determined that 58.6% of the students had not experienced an earthquake before, 74.0% of the students did not participate in earthquake disaster education before the earthquake, and 94% did not volunteer at AFAD after the earthquake. It was determined that 93.2% of the participants' houses were not destroyed in the earthquake, 44.4% of their houses were slightly damaged, 60% sheltered in their own homes after the earthquake, and 95.6% were not injured in the earthquake. It was determined that 59.5% of the students had no problems finding food and 60.3% water immediately after the earthquake, 96.4% did not receive psychological support after the earthquake, and 62.2% of them had a moderate psychological state (Table 1).

**Table 1.** Distribution of Students' Descriptive Characteristics and Information About Earthquake Experiences

| Features (n=365) | mean $\pm$ SD     |
|------------------|-------------------|
| Age (years)      | 21.14 $\pm$ 1.729 |
| Features (n=365) | n (%)             |
| <b>Gender</b>    |                   |
| Male             | 243 (66.6%)       |
| Woman            | 122 (33.4%)       |
| <b>Class</b>     |                   |

|   |                    |
|---|--------------------|
| 1 <sup>st</sup> Class   | 121 (33.2%)        |
| 2nd Class   | 104 (28.5%)        |
| 3rd Class   | 82 (22.5%)         |
| 4th Class   | 58 (15.9%)         |
| <b>Economic situation</b>   |                    |
| Bad   | 37 (10.1%)         |
| Middle  | 105 (83.6%)        |
| Good  | 23 (6.3%)          |
| <b>Having experienced an earthquake before</b>  |                    |
| Yes   | 151 (41.4%)        |
| No  | 214 (58.6%)        |
| <b>Participation in earthquake disaster education before the earthquake</b>             |                    |
| Yes   | 95 (26.0%)         |
| No  | 270 (74.0%)        |
| <b>House collapse in earthquake</b>   |                    |
| Yes   | 25 (6.8%)          |
| No  | 340 (93.2%)        |
| <b>Damage level of the house in the earthquake</b>                                      |                    |
| undamaged   | 142 (38.9%)        |
| slightly damaged  | 162 (44.4%)        |
| moderately damaged  | 26 (7.1%)          |
| heavily damaged   | 35 (9.6%)          |
| <b>Place to shelter immediately after the earthquake</b>                                |                    |
| own house   | 219 (60.0%)        |
| Other (dorm, tent, relative's house)  | 146 (40.0%)        |
| <b>Injury in earthquake</b>   |                    |
| Yes   | 16 (4.4%)          |
| No  | 349 (95.6%)        |
| <b>Losing a first degree relative in an earthquake</b>                                  |                    |
| Yes   | 8 (2.2%)           |
| No  | 357 (97.8%)        |
| <b>Being trapped under debris in an earthquake</b>                                      |                    |
| Yes   | 2 (0.5%)           |
| No  | 363 (99.5%)        |
| <b>Witnessing someone being injured, trapped or dying in an earthquake</b>              |                    |
| Yes   | 142 (38.9%)        |
| No  | 223 (61.1%)        |
| <b>Situation of first degree relative(s) trapped under rubble during the earthquake</b> |                    |
| Yes   | 38 (10.4%)         |
| No  | 327 (89.6%)        |
| <b>Having trouble finding food immediately after the earthquake</b>                     |                    |
| Yes   | 148 (40.5%)        |
| No  | 127 (59.5%)        |
| <b>Having problems finding water immediately after the earthquake</b>                   |                    |
| Yes   | <b>145 (39.7%)</b> |
| No  | <b>220 (60.3%)</b> |
| <b>Receiving psychological support after the earthquake</b>                             |                    |
| Yes I still get it  | 6 (1.6%)           |
| Yes I bought it and completed it  | 7 (1.9%)           |
| No I didn't   | 352 (96.4%)        |
| <b>Your current psychological state</b>   |                    |
| Bad   | 58 (15.9%)         |
| Middle  | 227 (62.2%)        |
| Good  | 80 (21.9%)         |

It was determined that the post-earthquake trauma levels of nursing students who were female, whose homes were heavily damaged, whose first-degree relatives were trapped under

rubble, who witnessed someone being injured, stranded or dead in the earthquake were statistically significantly higher. Post-earthquake trauma levels of students who had problems finding food and water immediately after the earthquake and whose psychological status was poor were statistically significantly higher ( $p < 0.05$ ) (Table 2).

**Table 2.** Comparison of Descriptive Characteristics and Scale Score Averages

| Descriptive features  | Post-Earthquake Trauma Level Scale Scores |                 |
|---|---|-----------------|
|   | Mean±SD                                   | Median /Min-Max |
| <b>Gender</b>   |   |                 |
| Woman   | 60.7819±15.51                             | t=4.848         |
| Male  | 51.8197±17.21                             | <b>p=0.000*</b> |
| <b>Class</b>  |   |                 |
| 1st Class   | 59.25±15.96                               |                 |
| 2nd Class   | 56.69±16.69                               | F=1.768         |
| 3rd Class   | 59.62±16.63                               | p=0.153         |
| 4th Class   | 54.08±17.48                               |                 |
| <b>Economic situation</b>   |   |                 |
| Bad   | 64.0000/20.00-83.00                       |                 |
| Middle  | 59.0000/20.00-96.00                       | KW=3.424        |
| Good  | 49.0000/28.00-88.00                       | p=0.180         |
| <b>Having experienced an earthquake before</b>  |   |                 |
| Yes   | 61.0000/20.00-88.00                       | U=15191.500     |
| No  | 57.0000/20.00-96.00                       | p=0.331         |
| <b>House collapse in earthquake</b>   |   |                 |
| Yes   | 62.0000/30.00-81.00                       | U=4016.500      |
| No  | 58.5000/20.00-96.00                       | p=0.646         |
| <b>Damage level of the house in the earthquake</b>                                      |   |                 |
| undamaged   | 53.85±15.48                               |                 |
| slightly damaged  | 59.25±16.62                               | F=5.785         |
| moderately damaged  | 60.11±18.56                               | <b>p=0.001*</b> |
| heavily damaged   | 65.20±16.30                               |                 |
| <b>Place to shelter immediately after the earthquake</b>                                |   |                 |
| in my own house   | 57.0000/20.00-96.00                       |                 |
| in dormitory  | 59.5000/20.00-87.00                       | KW=4.938        |
| in the tent   | 72.0000/35.00-82.00                       | p=0.176         |
| At your relative's house  | 65.0000/30.00-84.00                       |                 |
| <b>Injury in earthquake</b>   |   |                 |
| Yes   | 73.5000/26.00-87.00                       | U=1998.000      |
| No  | 59.0000/20.00-96.00                       | p=0.054         |
| <b>Death of a first-degree relative in an earthquake</b>                                |   |                 |
| Yes   | 76.0000/31.00-85.00                       | U=929.000       |
| No  | 59.0000/20.00-96.00                       | p=0.091         |
| <b>Situation under rubble in an earthquake</b>  |   |                 |
| Yes   | 58.0000/55.00-61.00                       | U=352.500       |
| No  | 59.0000/20.00-96.00                       | p=0.944         |
| <b>Situation of first degree relative(s) trapped under rubble during the earthquake</b> |   |                 |
| Yes   | 70.5000/31.00-88.00                       | U=3871.500      |
| No  | 57.0000/20.00-96.00                       | <b>p=0.000*</b> |
| <b>Witnessing someone being injured, trapped or dying in an earthquake</b>              |   |                 |
| Yes   | 65.5000/31.00-96.00                       | U=10407.500     |
| No  | 53.0000/20.00-86.00                       | <b>p=0.000*</b> |
| <b>Having trouble finding food immediately after the earthquake</b>                     |   |                 |
| Yes   | 68.0000/31.00-96.00                       | U=9134.000      |
| No  | 52.0000/20.00-86.00                       | <b>p=0.000*</b> |
| <b>Having trouble finding water immediately after the earthquake</b>                    |   |                 |

|  |                     |                              |
|--|---------------------|------------------------------|
| Yes  | 67.0000/26.00-96.00 | U=9860.500                   |
| No   | 52.0000/20.00-86.00 | <b>p=0.000*</b>              |
| <b>Receiving psychological support after the earthquake</b>                |                     |                              |
| Yes I still get it   | 57.0000/29.00-88.00 | KW=0.248<br>p=0.883          |
| Yes I bought it and completed it   | 55.0000/37.00-77.00 |                              |
| No I didn't get it   | 59.0000/20.00-96.00 |                              |
| <b>Current psychological state</b>   |                     |                              |
| Bad  | 71.5000/40.00-96.00 | KW=84.499<br><b>p=0.000*</b> |
| Middle   | 61.0000/22.00-96.00 |                              |
| Good   | 44.0000/20.00-83.00 |                              |
| <b>Participating in earthquake disaster training before the earthquake</b> |                     |                              |
| Yes  | 57.97±15.24         | t=0.131                      |
| No   | 57.71±17.11         | p=0.896                      |
| <b>Voluntary participation in AFAD after the earthquake</b>                |                     |                              |
| Yes  | 59.0000/29.00-86.00 | U=3474.000                   |
| No   | 59.0000/20.00-96.00 | p=0.533                      |

Note: Min.: Minimum; Max.: Maximum; SD: Standard deviation

U: Mann Whitney U test, KW: Kruskal Wallis test, F: Anova test, t: Independent Sample t testi, \* p<0.05

PETLDS and the sub-dimensions of the scale; minimum, maximum, mean, standard deviation (SD) and Cronbach's alpha values are presented. According to this; "Behavior Problems" sub-dimension; Minimum: 4.00, Maximum: 20.00, Mean± SD: 9.86±3.57 and Cronbach's alpha: 0.715. "Excitatory Limitation" sub-dimension; Minimum: 5.00, Maximum: 25.00, Mean± SD: 13.69±5.23 and Cronbach's alpha: 0.863. "Affective" sub-dimension; Minimum: 4.00, Maximum: 20.00, Mean± SD: 11.77±3.56 and Cronbach's alpha: 0.644. "Cognitive Configuration" sub-dimension; Minimum: 4.00, Maximum: 20.00, Mean± SD: 14.08±4.30 and Cronbach's alpha: 0.870. "Sleep Problems" sub-dimension; Minimum: 3.00, Maximum: 15.00, Mean± SD: 8.36±3.66 and Cronbach's alpha: 0.859. The total score of the scale is; Minimum: 20.00, Maximum: 96.00, Mean± SD: 57.78±16.62 and Cronbach's alpha: 0.866 was calculated (Table 3).

**Table 3.** Values Associated with the Scale and Its Sub-dimensions

| PETLDS Sub-Dimension           | Min.  | Max.  | Mean±SD     | Cronbach Alfa |
|--------------------------------|-------|-------|-------------|---------------|
| <b>Behavior Problems</b>       | 4.00  | 20.00 | 9.86±3.57   | 0.715         |
| <b>Excitatory Limitation</b>   | 5.00  | 25.00 | 13.69±5.23  | 0.863         |
| <b>Affective</b>               | 4.00  | 20.00 | 11.77±3.56  | 0.644         |
| <b>Cognitive Configuration</b> | 4.00  | 20.00 | 14.08±4.30  | 0.870         |
| <b>Sleep Problems</b>          | 3.00  | 15.00 | 8.36±3.66   | 0.859         |
| <b>Total Score</b>             | 20.00 | 96.00 | 57.78±16.62 | 0.866         |

Note: Min.: Minimum; Max.: Maximum; SD: Standard deviation

## DISCUSSION

This study was conducted to determine the trauma level of nursing students after the great Kahramanmaraş earthquake in Turkey. Since there are limited studies in the literature using the post-earthquake trauma level determination scale, the findings were mostly discussed with



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studies conducted to determine the post-traumatic stress level. In present research, it was found that female students' post-earthquake trauma levels were statistically significantly higher than male students.

In the study of Ehring et al. (2011) investigating post-traumatic stress disorder, it was stated that women had higher levels of anxiety, depression, somatic symptoms and burnout, and that women had higher levels of post-traumatic stress disorder compared to men (Ehring, Razik & Emmelkamp, 2011). In China (2017); In a study conducted eight years later in Wenchuan, the region affected by the earthquake in 2000, it was stated that there were individuals suffering from post-traumatic stress disorder as a long-term effect of the earthquake. It is reported that women are more vulnerable to the negative effects of earthquakes (Guo et al., 2017).

A study found that the prevalence of post-traumatic stress disorder in university students was moderate (39.3%) and significantly higher in female students (Omaç Sönmez, Nazik & Pehlivan, 2017). In the study conducted by Kurt and Gülbahçe (2019); It has been determined that female students experience higher levels of post-traumatic stress disorder than male students (Kurt & Gülbahçe, 2019). In Wang et al.'s study; It has been stated that post-traumatic stress disorder is a risk factor for women and its prevalence is twice as high as in men (Wang et.al, 2011). This can be explained by the fact that women are naturally more emotional than men and reflect their emotions more. One of the strengths of present research is that these results are compatible with the literature.

It was determined that the post-earthquake trauma levels of students whose houses were severely damaged were statistically significantly higher. In the study of Omaç Sönmez et al., which supports the research finding; After the Van earthquake, the incidence of post-traumatic stress disorder in students was found to be higher in those whose location was damaged during the earthquake (Omaç Sönmez, Nazik & Pehlivan, 2017). However, unlike present research finding, in Kardaş's study with university students who experienced the Van earthquake, it was stated that 211 (19.9%) students had severe damage to their homes, but the level of damage was not seen as a variable related to post-traumatic stress in the study (Kardaş, 2013). Present research, the post-earthquake trauma levels of students whose first-degree relative(s) were trapped under the rubble during the earthquake, who witnessed someone being injured, stranded or died in the earthquake and experienced loss were found to be statistically significant. The frequency of Post Traumatic Stress Disorder was found to be very high and significantly higher in individuals who lost their loved ones and those who were buried under the rubble during the Elazığ earthquake (Gülmez, 2022). In the study of Omaç Sönmez et al., similar results were obtained with the results of current research (Omaç Sönmez, Nazik & Pehlivan, 2017). The

permanence of traumatic and sudden events (disasters, etc.) in the minds is related to the individuals' level/skills of using coping mechanisms and the frequency of re-experiencing the traumatic event. Other factors that make the earthquake more traumatizing are; The level of loss of property and life and damage to the person or his/her relatives is related to the trauma level of the individuals after the earthquake. Literature information supports the current study results.

It was determined that nursing students had problems finding food and water immediately after the earthquake, and these variables were statistically significantly higher with their trauma levels. In a study conducted; It was determined that the participants stayed out of their homes (64.4%) after the earthquake, and a significant subgroup of them needed shelter (41.9%) and food and water assistance (Ehring, Razik & Emmelkamp, 2011). In the Kahramanmaraş and Hatay Earthquakes Report, it was stated that 2.273.551 people directly faced housing problems after the major earthquake. The right to housing is guaranteed in our Constitution and is one of the most fundamental rights of individuals. In this context, it is necessary to meet the minimum basic needs of individuals affected by the earthquake (shelter, water, electricity, natural gas and nutrition) and to create a safe zone (2023 Kahramanmaraş and Hatay earthquakes report, 2023). It is thought that meeting these basic needs may have a small impact on the psychological well-being of earthquake victims.

A statistically significant difference was found in the post-earthquake trauma levels of students who expressed their psychological conditions as bad. In the literature, it has been determined that high school students who experienced the Van earthquake still experience the psychological effects of the earthquake even eight years later (Kurt and Gülbahçe, 2019). In the Kahramanmaraş and Hatay Earthquake Report, the importance of providing care and protection, financial aid, psychological support and consultancy to elderly individuals who lost their families and relatives and were left alone in the short term was emphasized as policy recommendations (2023 Kahramanmaraş and Hatay earthquake report, 2023). Regardless of the severity of the earthquake experienced by individuals, its physical, psychological and social effects are related to people's coping mechanisms. Among these, the trauma that has a long-term effect is psychological trauma. Therefore, it is important for individuals to receive psychological treatment in the post-earthquake period. When examined for the current sample in this study, it was seen that the scores students received from PETLDS were high.

According to Tanhan and Kayri's validity and reliability study, the range of scores  $52.385 \pm 5.051$  on the scale represents the threshold value at which people become traumatized; values below and above this threshold value denote low and high levels of traumatization

(Tanhan & Kayri, 2013). The PETLDS total score was found to be  $57.78 \pm 16.62$  for the present sample. In this context, it can be said that the students' trauma levels after the earthquake are high. In a study conducted after the Kahramanmaraş earthquake in our country; the total score average of the individuals from PETLDS was found to be 71.47 for the sample, and this value showed that the individuals were highly traumatized (Karabacak Çelik, 2023). The high scale scores of this study may be associated with the wide impact area of the Kahramanmaraş earthquake and the high loss of life and property.

When looking at the average values of the scale sub-scores from the study findings; It was determined that the average scores of the students from the cognitive structuring, emotional limitation and affective sub-dimensions were higher than the average scores of the behavior and sleep problems sub-dimensions. The reason why these sub-dimensions are high is; It can be thought that this may be due to reasons such as students having concerns about the future after the earthquake, thinking that life has no meaning, anxiety, helplessness, losing the sense of confidence, becoming emotional, and decreasing the desire to live. In addition, it should not be forgotten that the psychology of individuals may be primarily affected by the trauma they experience during the earthquake. The scale subscale score averages obtained in Karabacak Çelik's study examining the trauma symptoms of adult individuals after the earthquake support this study (Karabacak Çelik, 2023). In the study conducted with students affected by the Kahramanmaraş earthquake, it was stated that cognitive structuring and sleep problems were at a moderate level, while behavioral problems, excitability, affective structuring and scale total scores were at a high level (Dokuzoğlu & Ünalı, 2023). It is seen that earthquakes cannot be fully predicted in today's conditions, and although individuals take precautions and prepare, it is a very traumatizing situation for people due to reasons such as the size of the area affected by the earthquake and the magnitude of its destructive power. It was determined that this traumatic effect was also seen on young university students.

## CONCLUSION

In the study, the trauma level of nursing students was determined to be higher than the threshold value specified in the scale. The fact that earthquakes have different effects on individuals depending on their coping mechanisms varies depending on the severity and perception of the trauma experienced. For this reason, it becomes clear that students who experience an earthquake need to get professional help to ensure their psychological well-being. Establishing psychological counseling and guidance units in universities and having competent people work there to serve students can help students go through this process more easily.

It can be suggested that it would be beneficial for nursing students to be prepared for extraordinary situations such as earthquakes and to receive psychosocial support. The extra fear of the unknown makes people more susceptible to trauma. For this reason, the lack of knowledge should be eliminated by organizing training that will increase the knowledge and skills of nursing students regarding disasters.

The nursing profession is a profession integrated with society that requires sensitivity. This sensitivity should start during student years and continue later while working in the profession. For this reason, it is important for nurses, who have an important role in combating disasters, to be ready for disasters since their student years and to be empowered with undergraduate and graduate training and certificate programs on disaster nursing.

This study was conducted with students affected by the earthquake. It may be suggested that the study be conducted with students who study at different institutions, have no earthquake experience, and do not live in an earthquake zone. In addition, according to the results of the study, it is recommended to reduce the level of trauma of students after the earthquake and to plan training in schools to address the trauma experienced. Different studies can be carried out that include the rest of the society such as children, adults, elderly, pregnant women and individuals with special needs.

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