

# Trakya University Faculty of Medicine Interns' Assessment of Disaster Response Self-Efficacy: An Intervention Study

## Trakya Üniversitesi Tıp Fakültesi İntörn Hekimlerinin Afete Müdahale Öz-Yeterliliklerinin Değerlendirilmesi: Bir Müdahale Çalışması

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### Abstract

**Aim:** The World Health Organization defines a disaster as an "unexpected ecological phenomenon that exceeds the capacity and resources of an institution, disrupts normal functioning, and requires external assistance". The purpose of this study is to evaluate the impact of providing disaster training intervention to intern doctors at Trakya University Faculty of Medicine on their self-efficacy in disaster response, and to provide recommendations for enhancing their disaster response self-efficacy.

### Keywords:

Disasters, Medical Education, Internship

### Anahtar Sözcükler:

Afetler, Tıp Eğitimi, İntörnlük

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**Methods:** An intervention-type study was conducted with final-year students of Trakya University Faculty of Medicine. Following the Kahramanmaraş earthquake on February 6, 2023, disaster-related courses and public health services in disasters were added to the 6th Year Rural Medicine Internship curriculum. All 49 participants who attended these courses were included in the research. Before the disaster-related courses in the 6th-year rural medicine internship, participants were administered a sociodemographic questionnaire and the Disaster Response Self-Efficacy Scale (DRSES); only the DRSES scale was administered at the end of the rural medicine internship.

**Results:** The average age of interns participating in the study was 24.8±1.2 years, with 26 (53.1%) being female. Twenty-one (42.9%) of the participants reported experiencing a disaster in their lifetime, while 29 (59.2%) stated that there had been a disaster in their family. Twenty-nine (59.2%) participants indicated receiving disaster-related training during their medical education, while 47 (95.9%) expressed a need for disaster-related education. Eighty-five point seven percent (85.7%) of the participants rated their self-efficacy in disaster response as "poor." The mean pre-test score for the DRSES was 62.82±13.06, and the mean post-test score was 72.80±10.21, with a statistically significant difference between them (p<0.001). There was a statistically significant, positively correlated, moderate relationship between the pre-test and post-test scores of the DRSES for the individuals participating in the study (r=0.551, p<0.001).

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**Conclusions:** Approximately half of the participants had not received any disaster-related training, and nearly all expressed a need for disaster-related education. After disaster education for final-year medical students, a statistically significant increase was observed in their scores on the Disaster Response Self-Efficacy Scale (DRSES).

## Özet

**Amaç:** Dünya Sağlık Örgütü afeti “Beklenmeyen, kurumun olanakları ve kapasitesini aşan, normal işleyişi bozan, dışarıdan yardım gerektiren ani ekolojik olgu” olarak tanımlamaktadır. Bu çalışmanın amacı; Trakya Üniversitesi Tıp Fakültesi intörn hekimlerine afet konusunda eğitim müdahalesi yapılarak afetlere müdahale öz-yeterliliklerine etkisini değerlendirmek ve afete müdahale öz-yeterliliklerini artırmak için önerilerde bulunmaktır.

**Yöntem:** Müdahale tipindeki araştırma, Trakya Üniversitesi Tıp Fakültesi son sınıf öğrencileri ile yürütülmüştür. 6 Şubat 2023 Kahramanmaraş depremi sonrası 6. Sınıf Kursal Hekimlik Stajı ders programına afetler, afetlerde halk sağlığı hizmetleri ile ilgili dersler eklenmiştir. Bu derslere katılan 49 kişinin tamamı araştırmaya dahil edilmiştir. Tıp fakültesi 6.sınıf kursal hekimlik stajında yer alan “Afetler, Afetlerde Halk Sağlığı hizmetleri ile ilgili derslerin öncesinde katılımcılara sosyodemografik soru formu ve Afete Müdahale Öz-yeterlilik Ölçeği (AMÖYÖ) formu; kursal hekimlik stajı bitiminde ise sadece AMÖYÖ formu uygulanmıştır.

**Bulgular:** Araştırmaya katılan intörn hekimlerin yaş ortalaması 24,8±1,2 yıl olup 26’sı (%53,1) kadındır. Çalışmaya dahil olan kişilerin 21’i (%42,9) hayatları boyunca afet deneyimi yaşadıklarını; 29’u (%59,2) ise ailesinde afet deneyimi olduğunu belirtmiştir. Katılımcıların 29’u (%59,2) tıp eğitimi süresince afetlerle ilgili eğitim aldığını belirtirken, 47’si (%95,9) ise afetler konusunda eğitime ihtiyaç duyduklarını belirtmiştir. Katılımcıların 42’si (%85,7) kendilerini afetlere müdahale konusunda yeterlilik seviyelerini “kötü” olarak değerlendirmiştir. Katılımcıların AMÖYÖ ön test puanı ortalama değeri 62,82±13,06 ve son test puanı ortalama değeri 72,80±10,21 olup ön test ve son test puanları arasında istatistiksel olarak anlamlı fark saptanmıştır ( $p<0,001$ ). Araştırmaya katılan bireylerin AMÖYÖ ön test ile son test puanları arasında istatistiksel olarak anlamlı, pozitif yönlü, orta derece bir ilişki olduğu gözlenmiştir ( $r=0,551$ ,  $p<0,001$ ).

**Sonuç:** Katılımcıların yaklaşık yarısının afetlerle ilgili bir eğitim almadığı; tamamına yakının ise afetlere yönelik eğitime ihtiyaç duyduğu saptanmıştır. Tıp fakültesi son sınıf öğrencilerinin afet eğitimi sonrası AMÖYÖ’den aldıkları puanlarda istatistiksel olarak anlamlı bir artış bulunmuştur.

## INTRODUCTION

A disaster is defined in various ways, but according to the World Health Organization, it is characterized as “an unforeseen ecological phenomenon that exceeds the resources and capacity of an institution, disrupts normal functioning, and requires external assistance” (1). Additionally, a disaster can be defined as “a natural, technological, or human-induced event that causes physical, economic, and social losses for the entire community, disrupts normal life, and overwhelms the coping capacity of the affected community” (2).

Disasters can disturb both natural and human-made structures, as well as disrupt everyday life (3). Natural disasters comprise occurrences

such as earthquakes, tsunamis, floods, hurricanes, droughts, landslides and volcanic eruptions. Conversely, human-made disasters encompass events like wars, migrations, acts of terrorism, transportation accidents, fires, and acts of violence. While certain disasters like epidemics, storms and earthquakes happen suddenly, others, including droughts, resource depletion, uncontrolled urbanization, climate change, economic collapses, and political crises, unfold gradually over an extended period (4).

Based on information from the International Disaster Database (EM-DAT), the year 2022 witnessed 387 global natural disaster occurrences impacting over 185 million

individuals, leading to 30.704 fatalities, and causing an economic loss of around 223.8 billion dollars (5).

During disasters, the delivery of healthcare services may be disrupted, and healthcare institutions/workers may become unable to meet the increasing demand (6). In such situations, the professional knowledge, skills, and equipment levels of healthcare workers in disaster-related matters become critically important, highlighting the significance of disaster medicine training once again. According to the Pre-Graduation Medical Education National Core Curriculum; providing healthcare services in extraordinary circumstances is included in basic medical practices, and it is expected that a general practitioner will perform such practices in accordance with guidelines/directives in an emergency situation (7).

While there are numerous studies in the literature assessing the knowledge level and awareness of healthcare workers regarding disasters, the number of studies measuring the outcomes of an intervention training on disasters is quite limited. Our study is one of the few that measures the impact of a disaster training intervention on disaster response self-efficacy.

The aim of this study is to evaluate the effect of a disaster training intervention on the disaster response self-efficacy of intern doctors at Trakya University Faculty of Medicine and to provide recommendations for enhancing their disaster response self-efficacy.

## **METHODS**

The intervention type research was planned as part of the disaster medicine and public health services training program added to the 6th-year Public Health Clerkship curriculum following the Kahramanmaraş earthquake on February 6, 2023. After this change, all 49 intern doctors participating in the clerkship were included in the study.

The study was conducted between May 15, 2023, and September 1, 2023, at Trakya University Health Research and Application Center.

### ***Data Collection Instruments***

#### ***Questionnaire Form***

This form consists of 23 questions created by researchers by compiling information from the literature. It includes questions about the demographic characteristics of intern doctors (gender, marital status, age, etc.) and their education and experiences related to disasters.

#### ***The Disaster Response Self-Efficacy Scale (DRSES)***

Developed by Hong-Yan Li and colleagues in 2017 (8). The validity and reliability studies of the Turkish version of the scale were conducted by Koca and colleagues in 2018 (9). It consists of a total of 19 items and 3 subscales, and responses are collected using a 5-point Likert scale (1=No self-confidence at all, 2=Basically no self-confidence, 3=Some self-confidence, 4=Basically self-confident, 5=Completely self-confident). A high score indicates high self-efficacy in disaster response. The Cronbach's alpha coefficient of the scale is reported as 0.96. In our study, the Cronbach's alpha coefficient was found to be 0.94.

### ***Data Collection***

The data were collected through face-to-face interviews. Prior to data collection, the researchers provided information about the purpose of the study and obtained the participants' consent. The content of the training program was prepared within the framework of the Pre-Graduation Core Education Program and grouped under four headings: "Health Services and Public Health Practices in Disasters, Maternal and Child Health Services, Immunization Services and Management, Infectious Diseases in Disasters, and Environmental Health Services." Each lesson

lasted for 50 minutes, totaling 200 minutes of training. Before the training, participants were given a socio-demographic questionnaire and the Disaster Response Self-Efficacy Scale (DRSES); the DRSES was administered again at the end of the rural medicine clerkship. Participants were asked to choose a nickname for themselves, and pre-test and post-test responses were paired accordingly. It took 10-15 minutes to complete the questionnaire.

### Statistical Analysis

The data was analyzed using IBM SPSS (Statistical Package for Social Sciences) Statistics 21.0 software. Descriptive statistics were used to present the data, including numbers, percentages, means, and standard deviation values. For continuous variables, kurtosis and skewness levels were assumed to be within  $\pm 2$ , indicating a normal distribution (10).

Statistical analyses included descriptive statistics, the Mann-Whitney U test, paired

sample t-tests, Wilcoxon signed rank test and Pearson correlation analysis.

A significance level of  $p < 0.05$  was considered statistically significant in the results.

### Research Ethics Committee and Other Permissions

Approval for the research was obtained from the Trakya University Scientific Research Ethics Committee (date: 08-05-2023 and approval number: 2023/1932). Necessary permissions were also obtained from the Dean's Office of Trakya University Faculty of Medicine and Özlem ÇAĞAN, who adapted the scale, for conducting the research.

### RESULTS

The research included 49 intern doctors. The average age of the participants was  $24.8 \pm 1.2$  years, with 26 of them (53.1%) being female. The descriptive characteristics of the participants are presented in Table 1.

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

| Descriptive Characteristics | Number    | Percentages (%) |
|-----------------------------|-----------|-----------------|
| <b>Gender</b>               |           |                 |
| Woman                       | 26        | 53.1            |
| Man                         | 23        | 46.9            |
| <b>Marital status</b>       |           |                 |
| Married                     | 2         | 4.1             |
| Single                      | 47        | 95.9            |
| <b>Residence</b>            |           |                 |
| Alone                       | 30        | 61.2            |
| Roommate/Partner            | 9         | 18.4            |
| Family                      | 5         | 10.2            |
| Sudent dormitory            | 5         | 10.2            |
| <b>Total</b>                | <b>49</b> | <b>100</b>      |

Of the participants, 21 (42.9%) stated that they had experienced a disaster in their lifetime, and 29 (59.2%) mentioned that someone in their family had experienced a disaster. When asked if they wanted to work in a disaster-affected area, 37 participants (75.5%) responded

affirmatively. However, only 5 individuals (10.2%) had actually served in a disaster-affected area. Regarding their knowledge of their faculties' disaster plans, 6 participants (12.2%) indicated awareness. Similarly, when asked about their awareness of the gathering

point within the campus in case of a disaster, 8 participants (16.3%) answered "yes."

When asked if they were prepared for disasters, 44 participants (89.8%) responded negatively, and 48 participants (98%) believed that their communities were not prepared for disasters. 35 participants (71.4%) had not made personal preparations for disasters. In terms of their education, 29 participants (59.2%) reported receiving training related to disasters during their medical education, while 47 participants (95.9%) expressed a need for further education

on disaster-related topics. Additionally, 35 participants (71.4%) stated that they did not know how to access information about healthcare services that should be provided during disasters. Furthermore, 42 participants (85.7%) assessed their own competence in disaster response as "poor." When asked about the medical specialties they believed had a role in post-disaster healthcare service delivery, the top three responses were Orthopedics (69.4%), Emergency Medicine (67.3%), and Public Health (63.3%). (Table 2)

**Table 2.** Participants' Disaster Training, Experiences and Preparedness

|   | Number | Percentages (%) |
|---|--------|-----------------|
| <b>Disaster experience</b>                                |        |                 |
| Yes   | 21     | 42.9            |
| No  | 28     | 57.1            |
| <b>Disaster Experience of Relatives</b>                   |        |                 |
| Yes   | 29     | 59.2            |
| No  | 20     | 40.8            |
| <b>Loss of a relative due to a disaster</b>               |        |                 |
| Yes   | 3      | 6.1             |
| No  | 46     | 93.9            |
| <b>Serve in a disaster-affected area</b>                  |        |                 |
| Yes   | 5      | 10.2            |
| No  | 44     | 89.8            |
| <b>Want to work in a disaster-affected area</b>           |        |                 |
| Yes   | 37     | 75.5            |
| No  | 12     | 24.5            |
| <b>Knowledge of their faculties' disaster plans</b>       |        |                 |
| Yes   | 6      | 12.2            |
| No  | 43     | 87.8            |
| <b>Awareness of the gathering point within the campus</b> |        |                 |
| Yes   | 8      | 16.3            |
| No  | 41     | 83.7            |
| <b>Preparedness for disasters</b>                         |        |                 |
| Yes   | 5      | 10.2            |
| No  | 44     | 89.8            |
| <b>Communities preparedness for disasters</b>             |        |                 |
| Yes   | 1      | 2.0             |
| No  | 48     | 98.0            |
| <b>Personal preparedness for disasters</b>                |        |                 |
| Yes   | 14     | 28.6            |
| No  | 35     | 71.4            |

|   | Number | Percentages (%) |
|---|--------|-----------------|
| <b>Receiving training related to disasters during their medical education</b> |        |                 |
| Yes   | 29     | 59.2            |
| No  | 20     | 40.8            |
| <b>Need for further education on disaster-related topics.</b>                 |        |                 |
| Yes   | 47     | 95.9            |
| No  | 2      | 4.1             |
| <b>Access information about healthcare services in disasters</b>              |        |                 |
| Yes   | 14     | 28.6            |
| No  | 35     | 71.4            |
| <b>Own competence in disaster response</b>                                    |        |                 |
| Good  | 7      | 14.3            |
| Poor  | 42     | 85.7            |
| <b>Medical specialties, having role after a disaster*</b>                     |        |                 |
| Orthopedics   | 34     | 69.4            |
| Emergency Medicine  | 33     | 67.3            |
| Public Health   | 31     | 63.3            |
| Psychiatry  | 21     | 42.9            |
| General Surgery   | 19     | 38.8            |
| Family Medicine   | 16     | 32.7            |
| Internal Medicine   | 16     | 32.7            |
| Pediatrics  | 16     | 32.7            |
| Cardiology  | 9      | 18.4            |
| Radiology   | 7      | 14.3            |
| <b>Total</b>  | 49     | 100             |

\*Participants have given multiple responses to this question.

The relationship between participants' pre-training scores on the DRSES and various parameters is presented in Table 3. The average score that participants obtained from the DRSES was  $62.82 \pm 13.06$ . Accordingly, participants with disaster experience had higher average scores on the scale compared to those without experience ( $p=0.038$ ). Participants who stated that they worked in disaster areas after disasters had higher scores compared to those who didn't ( $p=0.022$ ). Those who knew the

location of the gathering point on the campus where they received training had higher scores on the scale compared to those who didn't know ( $p=0.030$ ). Participants who claimed to be prepared for disasters had higher scores on the scale compared to those who claimed to be unprepared ( $p=0.030$ ). Participants who rated their disaster response self-efficacy level as good had higher scores on the scale compared to those who rated it as poor ( $p=0.000$ ).

**Table 3.** Scores From The Scale based on Some Sociodemographic Characteristics of the Participants Before the Training

|                       |                | Scale average score | <i>p</i> |
|-----------------------|----------------|---------------------|----------|
| <b>Gender</b>         | <b>Woman</b>   | $60.89 \pm 12.51$   | 0.311    |
|                       | <b>Man</b>     | $65.00 \pm 13.60$   |          |
| <b>Marital status</b> | <b>Married</b> | $59.00 \pm 9.9$     | 0.551    |
|                       | <b>Single</b>  | $62.98 \pm 13.23$   |          |

|  |      | Scale average score | <i>p</i>     |
|--|------|---------------------|--------------|
| Disaster experience  | Yes  | 67.76±11.31         | <b>0.038</b> |
|  | No   | 59.11±13.23         |              |
| Disaster Experience of Relatives                                       | Yes  | 64.59±12.04         | 0.258        |
|  | No   | 60.25±14.33         |              |
| Loss of a relative due to a disaster                                   | Yes  | 67.67±7.51          | 0.621        |
|  | No   | 62.50±13.33         |              |
| Serve in a disaster-affected area                                      | Yes  | 73.40±18.58         | <b>0.022</b> |
|  | No   | 61.61±11.99         |              |
| Want to work in a disaster-affected area                               | Yes  | 64.57±12.37         | 0.133        |
|  | No   | 57.42±14.16         |              |
| Knowledge of their faculties' disaster plans                           | Yes  | 63.66±13.92         | 0.941        |
|  | No   | 62.67±13.10         |              |
| Awareness of the gathering point within the campus                     | Yes  | 72.00±6.26          | <b>0.030</b> |
|  | No   | 61.02±13.32         |              |
| Preparedness for disasters   | Yes  | 74.00±7.87          | <b>0.030</b> |
|  | No   | 61.55±12.97         |              |
| Communities preparedness for disasters                                 | Yes  | 76.00±0.00          | 0.204        |
|  | No   | 62.54±13.05         |              |
| Personal preparedness for disasters                                    | Yes  | 65.43±15.02         | 0.103        |
|  | No   | 61.77±12.27         |              |
| Need for further education on disaster-related topics.                 | Yes  | 62.96±12.21         | 0.718        |
|  | No   | 59.50±36.06         |              |
| Receiving training related to disasters during their medical education | Yes  | 65.14±12.76         | 0.093        |
|  | No   | 59.45±13.06         |              |
| Own competence in disaster response                                    | Good | 76.42±11.47         | <b>0.001</b> |
|  | Poor | 60.55±11.98         |              |

*Mann Whitney U test*

The average score for participants' DRSES' pre-test was 62.82±13.06, while the post-test score had an average of 72.80±10.21. A statistically significant difference was observed between the pre-test and post-test scores ( $p<0.001$ ). There was also a statistically significant, moderately positive correlation between participants' pre-test scores and post-test scores in the DRSES ( $r=0.551$ ,  $p<0.001$ ).

The distribution of scores obtained from the scale by participants' socio-demographic

characteristics before and after the training is presented in Table 4. According to the table, the scores of both genders and individuals who were single increased after the training ( $p<0.05$ ). The scores of participants who had experienced disasters themselves or through their relatives and those who had not experienced disasters increased after the training ( $p<0.05$ ). Participants who had not lost a relative due to any disaster experienced an increase in scores after the training ( $p<0.05$ ).

The scores of participants without prior experience working in disaster areas increased after the training ( $p<0.05$ ). The scores of participants who expressed a desire to work in disaster areas after the training were higher compared to those who did not express such a desire before the training ( $p<0.05$ ). Participants who were not informed about the faculty's disaster plan, did not know the gathering point on campus, and believed that they and their surroundings were not prepared for disasters experienced an increase in scores after the

training( $p<0.05$ ). The scores of all participants, regardless of whether they had personal preparation for disasters, increased after the training ( $p<0.05$ ). The scores of participants who received education on disasters during their medical education and those who did not increased after the training ( $p<0.05$ ). Participants who expressed a need for training on disasters and rated their competence in disaster response as poor experienced an increase in scores after the training ( $p<0.05$ ).

**Table 4.** Scores Obtained from the Scale According to Some Sociodemographic Characteristics of the Participants Before And After the Training

|  |         | Scale average score |               | p             |
|--|---------|---------------------|---------------|---------------|
|  |         | Pre-training        | Post-training |               |
| Gender   | Woman   | 60.89±12.51         | 72,61±11,83   | <b>0,000</b>  |
|  | Man     | 65.00±13.60         | 73,00±8,24    | <b>0,002</b>  |
| Marital status                                     | Married | 59.00±9.9           | 75,50±13,43   | 0,180         |
|  | Single  | 62.98±13.23         | 72,68±10,22   | <b>0,000*</b> |
| Disaster experience                                | Yes     | 67.76±11.31         | 73,38±10,39   | <b>0,038</b>  |
|  | No      | 59.11±13.23         | 72,35±10,23   | <b>0,000</b>  |
| Disaster Experience of Relatives                   | Yes     | 64.59±12.04         | 73,10±9,48    | <b>0,0001</b> |
|  | No      | 60.25±14.33         | 72,35±11,42   | <b>0,002</b>  |
| Loss of a relative due to a disaster               | Yes     | 67.67±7.51          | 73,77±10,01   | 0,109         |
|  | No      | 62.50±13.33         | 72,73±10,32   | <b>0,000*</b> |
| Serve in a disaster-affected area                  | Yes     | 73.40±18.58         | 73,40±18,58   | 0,686         |
|  | No      | 61.61±11.99         | 72,22±10,20   | <b>0,000</b>  |
| Want to work in a disaster-affected area           | Yes     | 64.57±12.37         | 74,78±10,07   | <b>0,000</b>  |
|  | No      | 57.42±14.16         | 66,77±8,24    | <b>0,007</b>  |
| Knowledge of their faculties' disaster plans       | Yes     | 63.66±13.92         | 77,83±9,70    | 0,116         |
|  | No      | 62.70±13.10         | 72,09±10,18   | <b>0,000*</b> |
| Awareness of the gathering point within the campus | Yes     | 72.00±6.26          | 74,37±9,68    | 0,733         |
|  | No      | 61.02±13.32         | 72,49±10,39   | <b>0,000*</b> |
| Preparedness for disasters                         | Yes     | 74.00±7.87          | 78,80±11,10   | 0,279         |
|  | No      | 61.55±12.97         | 72,11±10,00   | <b>0,000*</b> |
| Communities preparedness for disasters             | Yes     | 76.00±0.00          | 95,00±0,00    | -             |
|  | No      | 62.54±13.05         | 73,33±9,78    | <b>0,000*</b> |
| Personal preparedness for disasters                | Yes     | 65.43±15.02         | 75,78±9,45    | <b>0,004</b>  |
|  | No      | 61.77±12.27         | 71,60±10,38   | <b>0,000*</b> |

|   |             | Scale average score |               | <i>p</i>      |
|---|-------------|---------------------|---------------|---------------|
|   |             | Pre-training        | Post-training |               |
| <b>Need for further education on disaster-related topics.</b>                 | <b>Yes</b>  | 62.96±12.21         | 72,74±9,80    | <b>0,000*</b> |
|   | <b>No</b>   | 59.50±36.06         | 74,00±24,04   | 0,180         |
| <b>Receiving training related to disasters during their medical education</b> | <b>Yes</b>  | 65.14±12.76         | 75,10±9,76    | <b>0,000</b>  |
|   | <b>No</b>   | 59.45±13.06         | 69,45±10,13   | <b>0,001</b>  |
| <b>Own competence in disaster response</b>                                    | <b>Good</b> | 76.42±11.47         | 80,57±10,27   | 0,398         |
|   | <b>Poor</b> | 60.55±11.98         | 71,50±9,71    | <b>0,000</b>  |

\* Paired samples *t*-test

## DISCUSSION

This study presents the levels of disaster response among intern doctors at Trakya University Faculty of Medicine before and after disaster training. In our study, 42.9% of participants reported having experienced any disaster situation, while in the studies conducted by Yiğit et al., Kortak, and Gümüş Şekerci et al., the rates were found to be 52.8%, 57.9%, and 53.4%, respectively (11-13). The variations in the rates of disaster experience across different studies in different regions and times in Turkey are attributed to the diversity in the occurrence of disasters.

While 42.1% of participants in Yiğit et al.'s study reported receiving education on disasters during their education, the percentage was 59.2% in our study (11). The higher percentage in our study may be attributed to the sample being selected from a medical faculty.

More than half of the participants in our study (59.2%) reported not attending any courses or training related to disasters, and these findings are consistent with previous studies conducted with healthcare workers (14-22). However, 95.9% expressed a need for disaster training. Regardless of whether they received disaster education during their medical education, an increase in disaster response self-efficacy was observed among those expressing a need for

training. These findings highlight the necessity for the development and implementation of training or courses on disaster response and demonstrate the effectiveness of educational interventions. While the most effective types of training for preparing healthcare workers for disasters are not clearly defined, previous studies have emphasized the importance of emergency or disaster drills, basic and advanced life support training, infection control training, and first aid training in increasing preparedness and confidence during disaster response (14-20).

In Yiğit et al.'s study, 78.8% of students did not consider themselves prepared for potential disasters, and 94.3% did not have a disaster kit (11). Similarly, Arslan et al. found that 86% of medical faculty students were not personally prepared for disasters, and 88.2% did not have a home disaster kit (23). In our study, 89.8% of participants did not consider themselves prepared for potential disasters, and 71.4% did not have a disaster kit.

In all stages of the disaster cycle, healthcare workers are expected to utilize their knowledge and skills systematically and possess basic competencies. 85.7% of participants in our study reported feeling inadequate in disaster response.

Hospital disaster plans are important for guiding healthcare workers during emergency events.

Doctors and other healthcare workers should be aware of the existence of such a plan in their workplace and understand its contents, their roles during a disaster, and how to fulfill these roles (14). In our study, only 12.2% of intern doctors were aware of the hospital disaster plan. Previous studies have shown that although many nurses are aware of the existence of hospital disaster response plans, most do not have sufficient knowledge of their roles and responsibilities during an actual disaster (14). Similarly, Pamuk Cebeci and Arberk found that 62% of participants reported that their workplace did not have a hospital disaster plan (24). In our study, an increase in disaster response self-efficacy was observed among participants who were not informed about the hospital disaster plan after the educational intervention.

While Çirifş Yıldız and Yıldırım's study found a significant increase in the Disaster Response Self-Efficacy Scale (DRSES) scores of the intervention group after the training program, a similar increase was observed in our study after the training (25). Studies in the literature have shown that students who receive education on disasters demonstrate high levels of preparedness and self-efficacy in disaster response (23,26-28).

The most significant limitation of our study is that its scope only includes final-year students of the Trakya University Faculty of Medicine, hence the results cannot be generalized to all final-year medical students. Also, students who had previously taken public health courses were not included in the research due to the addition of disaster-themed courses to the curriculum following the 2023 Kahramanmaraş earthquake. Participants' disaster response self-efficacy beliefs were assessed using the Disaster Response Self-Efficacy Scale (DRSES), therefore, the comprehensive evaluation of disaster response self-efficacy expected to be gained by a medical student throughout their education under the National Core Curriculum

for Pre-Graduation Medical Education (UÇEP) may not have been fully assessed (7).

Although the long-term effects of this study have not been evaluated, it was found that students' levels of disaster response self-efficacy significantly increased after the training. In the future, we believe that studies conducted with smaller groups, developed with student-centered and educator-supported interactive presentations, and implemented in a practical manner will significantly contribute to the knowledge levels of students. Additionally, we believe that such practices may be attractive in terms of enhancing learning effectiveness and developing recommendations for different learning techniques.

## CONCLUSIONS

This study aims to evaluate the impact of disaster training intervention on the disaster response self-efficacy of final-year medical students and to provide recommendations for enhancing their disaster response self-efficacy. It was found that approximately half of the participants did not receive any training on disasters, yet almost all expressed a need for such training. There was a statistically significant increase in the scores of final-year medical students on the Disaster Response Self-Efficacy Scale after disaster education.

Approximately two-thirds of the participants were found to lack knowledge about the disaster plan and emergency gathering areas of their faculties and campuses. About one-third of participants felt they had inadequate access to information sources regarding disaster response and healthcare services during disasters. Most participants did not have personal preparations for disasters. These findings suggest that even future healthcare professionals neglect essential precautions before disasters.

Given Turkey's geography and the potential for future disasters due to climate change, it is crucial to prepare for such events. There is a need for new action plans to meet the current

needs of disaster preparedness and response and to develop curricula for disaster education.

The Pre-Graduation Medical Education National Core Curriculum includes the provision of healthcare services in extraordinary circumstances as part of basic medical practices. Therefore, the medical education curriculum could be enhanced by developing the "healthcare services in extraordinary circumstances" section, emphasizing practical fieldwork for students. Various symposiums and congresses on disasters should be organized, with the participation of medical students.

To increase awareness of disasters, drills should be conducted within university campuses and hospitals, and gathering areas should be indicated with warning signs. Hospital Disaster Plans should be demonstrated to students in a practical manner, and students should be included in preparations for potential disasters.

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The research protocol was approved by Trakya University Scientific Research Ethics Committee (Protocol Code: TUTF-BAEK 2023/193).

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### ***Conflict of Interest***

The authors declare no conflict of interest.

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