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Disaster Awareness of University Students and Their Crisis Management Skills During a Disaster Situation: The Case of the Vocational School of Health Services

Üniversite Öğrencilerinin Afet Farkındalığı ve Afet Durumda Kriz Yönetim Becerileri: Sağlık Hizmetleri Meslek Yüksekokulu Örneği

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Abstract: This study aims to determine the university students' levels of disaster awareness and to examine how they demonstrate crisis management skills in the case of a disaster and how they vary in terms of their level of disaster awareness. Data collected by the survey method were analysed by statistical analysis methods. The students' levels of disaster awareness and crisis management skills in the event of a disaster were moderate. Variables such as gender, department, disaster training, attendance at disaster drills, and disaster volunteerism were effective in disaster awareness and crisis management skills in the event of a disaster, and the variable of the place of residence was also effective on disaster awareness. The results showed that disaster awareness positively and significantly affected crisis management skills in the event of a disaster.

Keywords: Disaster Awareness, Crisis Management Skills, University Students.

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Öz: Bu araştırmanın amacı, üniversite öğrencilerinin afet farkındalık düzeylerini belirleyerek afet durumunda kriz yönetim becerilerinin nasıl olduğunu ve afet farkındalık düzeyi açısından nasıl değişkenlik gösterdiğini incelemektir. Araştırma kapsamında öğrencilerden anket yöntemiyle elde edilen veriler istatistiki analiz yöntemleriyle incelenmiştir. Öğrencilerin afet farkındalık ve afet durumunda kriz yönetim beceri düzeylerinin orta seviyede olduğu belirlenmiştir. Cinsiyet, bölüm, afet eğitimi, afet tatbikatına katılım ve afet gönüllülüğü değişkenlerinin afet farkındalığı ve afet durumunda kriz yönetim becerileri üzerinde etkili olduğu ve ayrıca yaşanılan yer değişkeninin afet farkındalığı üzerinde etkili olduğu saptanmıştır. Afet farkındalığının afet durumunda kriz yönetim becerilerini olumlu yönde ve anlamlı düzeyde etkilediği ortaya konulmuştur.

Anahtar Kelimeler: Afet Farkındalığı, Kriz Yönetim Becerileri, Üniversite Öğrencileri.

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1. Introduction

It is possible to describe a natural, human, or technological hazard as a disaster only when this event has resulted in physical, social, environmental, and economic losses (Altun 2018: 2). Disaster is a sociological event caused by nature, humans, or technology that leads to physical, social, psychological, economic, cultural, and environmental losses in a certain part or all of society, adversely affects political conditions, lacks a capacity enough to cope with the consequences, and requires external assistance at national and international levels (Pokhrel, 2020: 2; AFAD, 2014).

Since it cannot be predicted when and where a disaster will strike, countries' taking preventive and mitigation measures that minimize social, environmental and economic loss, especially physical loss for living things in case of a disaster occurs depends on the effective sustainability of disaster policies (Bekler et al., 2022: 75). Today, it is widely acknowledged that the ability to cope with disasters and to recover quickly to normal life after disasters are only possible by taking necessary precautions and conducting studies on possible scenarios and their effects (Karakuş and Önger, 2017: 484). Reducing the adverse effects of disasters can only be achieved through successful disaster risk management and strengthening the resilience of society against disasters. As an individual and as a society, it is required to take the necessary precautions and measures for minimizing the harmful effects of disasters and to raise awareness thereof (Tan et al., 2017: 1).

Türkiye has been threatened by major disasters, in particular earthquakes, due to its tectonic, seismic, topographic, and climatic structure. Especially when we analyze the earthquake hazard map of Turkey, it is known that the country may shake with an earthquake at any moment (Ersoy and Koçak, 2015: 1308). Therefore, it is always necessary to be prepared for disasters. To be fully prepared for disasters, all members of society should be well-informed and aware of them. It is important to make society prepared and resilient to disasters through advancing technology, and to develop systems that can withstand disasters. Therefore, the studies often emphasise raising social awareness toward disasters (Başıbüyük, 2004: 1; Gerdan, 2019: 164; Öcal, 2007: 109). From this perspective, it can be stated that disaster training is important.

Disaster training is a strategy that aims to reduce the vulnerability of society and raise awareness against disasters at every stage of disasters (preparation, mitigation, response, recovery, and reconstruction) by informing society about the hazards and their consequences (Özmen and İnce, 2017: 22). Disaster training is considered a key for society to be fully prepared for disasters and strong enough to cope with the consequences (Gerdan, 2019: 161). It is necessary to organise disaster training at all levels in a widespread and accurate manner in order to build a society that is sensitive and resilient to disasters.

In the scope of the disaster management, primarily disaster awareness in social terms is carried out and risk management approach is addressed through many other activities, in order to reduce the loss of life and property during disasters (Sonkaya et al., 2019: 56). The process of crisis management initiates following a disaster or emergency, but it is directly correlated with risk management. In other words, if the necessary significance is given to risk management, the crisis management process will also succeed. Therefore, studies on creating or raising disaster awareness among individuals directly affect crisis management skills in the event of a disaster. Hence, when a possible crisis arises, the process of identifying and assessing the indicators of the crisis and taking and implementing the necessary measures to put an end to the crisis with minimum damage can be successfully managed (Can, 2002: 338). Based on this information, this study aims to determine the disaster awareness levels of university students and examine how they react to a crisis, the factors they perceive the cause of the crisis, their levels of crisis management skills, the success of their strategies to prevent or resolve the crisis, the challenges they experience in crisis, how they demonstrate their crisis management skills, and how they vary by their level of disaster awareness.

2. Literature Review

The literature contains important studies on how to determine or raise disaster awareness. However, no studies have been found to identify crisis management skills at the time of disaster and to describe the relationship between crisis management skills and disaster awareness. Nevertheless, there have been some studies conducted to identify crisis management skills. When the reviewed studies are considered, it appears that they were either conducted on a certain segment of society, such as students, teachers, and health workers, or on the entire society by observing some criteria in order to determine or raise the level of disaster awareness. Likewise, studies aiming to identify crisis management skills focused on individuals or school administrators by observing some criteria in society. The study conducted by Dökmeci and Merinç (2018: 110) to determine the level of disaster awareness and consciousness of students enrolled in undergraduate and associate degree programs revealed that the level of disaster awareness and consciousness of undergraduate students was higher than that of associate degree students. The study conducted by Sapsağlam (2019: 290) to determine the knowledge and awareness levels of preschool children about natural disasters, showed that the age factor was effective in recognizing natural disasters, and the awareness levels of older children increased. The study conducted by Gezer and Aksu (2022: 406) to determine the disaster awareness levels of the prospective teachers of social studies and to examine them by various variables, reported that the disaster awareness levels of the prospective teachers of social studies were at a moderate level. Moreover, the disaster awareness levels of the prospective teachers differed significantly according to the variables of gender, maternal education level, paternal education level, whether or not they had previously experienced a disaster, and whether or not they had participated in a disaster-themed activity. In the study conducted by Ünal et al., (2022: 124) to determine the disaster awareness and preparedness levels of the people of Uşak and to determine whether or not they need any training accordingly, they identified that studies such as utilizing disaster simulators to raise disaster awareness of the people of Uşak and conducting more drills for disaster preparedness should be prioritized. The study conducted by Teo et al., (2018: 1128) to determine disaster awareness and information-seeking behavior among residents of low socio-economic level in Australia indicated that disaster awareness at low socio-economic level tended to decline and that English language proficiency and profession were the most important factors affecting disaster awareness. It was also stated that the most reliable source of information, regardless of socio-economic status, was generally television.

In the study conducted by Memduhoğlu and Ayyürek (2014: 182) to determine the crisis management competences of teachers regarding the Van earthquake, three separate groups of teachers at the kindergarten, primary, and high school levels were examined. Accordingly, it was stated that primary and high school teachers held more negative opinions on crisis management than kindergarten teachers. In their study, Bandrova et al,. (2010: 361) mentioned the development of the European Disaster Training Network. Based on the study, a questionnaire was conducted in four countries (Austria, Bulgaria, the Czech Republic, and Slovakia) among students enrolled in secondary school, high school, and university in order to assess their levels of knowledge, accumulation, skills, and preparedness for crisis management. The analyses have resulted in a debate on the competences of students in the field of crisis management. Accordingly, it has been suggested that mapping and cartography studies would support students in the improvement of their crisis management skills to a great extent. The study by Rayburn et al., (2021: 1) analyzed the pre-crisis and post-crisis evaluations of the students of the business administration department on the maintenance of university's sustainability against possible crises and the development of strategies for crises, as well as the findings derived from the interpretation of the factors affecting personal learning success during the crisis. This study analyzed the issues to be followed in terms of the protection of learning sustainability against the crises arising from the COVID-19 pandemic. The study by Sirivanasandha et al., (2022: 13) involved a survey study to assess situational awareness and decision-making variables of fifth-year medical students in terms of crisis management. This study showed that while the students had higher scores on all three levels of the situation awareness variable, they were competent on the first and second levels of the decision-making variable and had lower scores on the third level.

In Türkiye, there have been many crises such as earthquakes, mining disasters, terrorist incidents, etc. in terms of disasters, as well as floods, floods, landslides that occur every year. Crises are chaotic situations

that can be encountered in the lives of individuals and societies, but they can also bring chaos. In case of any disaster, every individual affected by the crisis tries to cope with the crisis. In this direction, the research focuses on the question of the relationship between individuals' disaster awareness and their coping skills for crises experienced in case of any disaster.

Sub-problems of the Study:

1. What is the level of disaster awareness among university students?
2. What is the level of crisis management skills of university students during a disaster?
3. What are the related factors affecting the disaster awareness of university students?
4. What are the related factors affecting university students' crisis management skills at the time of disaster?
5. Disaster awareness of university students has a positive effect on their crisis management skills at the time of disaster.

3. Method

This research is a descriptive and cross-sectional study to determine the relationship between disaster awareness levels and crisis management skills of university students.

The population of the study consisted of students enrolled in the Vocational School of Medical Services at Erzincan Binali Yıldırım University (EBYU) in the spring semester of the 2022–2023 academic year. The reasons for choosing EBYU Vocational School of Health Services for the research are as follows: Firstly, Erzincan province has a high potential in terms of natural disasters (earthquake, landslide and flood etc.), and secondly, there are both disaster-related programmes (Emergency and Disaster Management) and non-disaster-related programmes. No sample selection was used, and the study aimed to reach a sufficient number of participants with the convenience sampling method and was completed with the participation of 471 students. Students aged 18 years and over who were enrolled in the university and studied in a formal program were invited to participate in the study on a voluntary basis. No conflict of interest exists between the participants and the researcher that would affect the study. The data were collected electronically through Google Forms between April and May of 2023. Socio-demographic information form, "Disaster Awareness Scale" and "Scale of Crisis Management Skills in Disaster Situation" were used as data collection tools. The socio-demographic section includes questions about age, gender, department, university year, income status, and longest lived place of residence so far, disaster experience, disaster training, attendance at disaster drills, and disaster volunteerism. Kırıkkaya and Gerdan (2019: 393) developed the Disaster Awareness Scale a five-point Likert-type assessment tool with 23 items. The scale having a five-factor structure: disaster information, pre-disaster, during disaster, post-disaster, and awareness of non-structural risks, had a variance explanatory level of 57% in total. The Cronbach's Alpha reliability coefficient of the scale was calculated as α=.86. Acar and Özbaşı (2022: 89) developed the Scale of Crisis Management Skills in Disaster Situation a five-point Likert-type assessment tool with 40 items. The scale with a four-factor structure (post-disaster crisis management skills, strategy skills during a disaster, action skills during a disaster, and pre-disaster crisis management skills) had a variance explanatory level of 40.3% in total. The Cronbach's Alpha reliability coefficient of the scale was calculated as α=.94.

The independent variables of the study were the demographic characteristics of the students (age, gender, department, university year, income status, place of residence) and characteristics related to disaster background (disaster training, disaster experience, disaster drill, and disaster volunteerism). The dependent variables were the total and subscale mean scores of the Disaster Awareness Scale and the Scale of Crisis Management Skills in Disaster Situation. The data were analyzed using the licensed SPSS 23 software. Skewness and kurtosis coefficients were analyzed for the normality of the total and subscale scores on the Disaster Awareness Scale and the Scale of Crisis Management Skills in Disaster Situation.

According to Tabachnik and Fidell (2013: 68), if the skewness and kurtosis values are between -1.50 and +1.50, then it is accepted to be normally distributed. Accordingly, it was concluded that the levels of the disaster awareness scale and the scale of crisis management skills in disaster situation were normally distributed, and therefore parametric tests would be run for comparison, correlation, and difference analyses. Also, it was revealed that it was convenient to do Pearson's correlation analysis for the causality analysis. Finally, the internal consistency coefficient Cronbach's Alpha test statistic was analyzed for the reliability of both scales. Accordingly, it was determined that the internal consistency coefficient of the disaster awareness scale was highly reliable with a value of 0.798, and the internal consistency coefficient of the scale of crisis management skills in disaster situation was highly reliable with a value of 0.926.

Before beginning the study, ethics committee approval was obtained from the Human Research Ethical Committee of the Erzincan Binali Yıldırım University (approval no and date: 02/14 - 22/02/2023). Then, an application was filed with the Directorate of Vocational School for Medical Services with a petition to do a survey, and institutional authorization was obtained (permission no and date: E-35848429-200-245252 - 06/03/2023). Permission was obtained from the authors of the scales used in the study via e-mail. Before the study, the student gave consent that they voluntarily participated in the study, and they were informed that their data would be kept confidential in accordance with ethical rules and they could withdraw from the study at any time.

4. Findings

The findings of the study obtained by analyzing the data are presented in the tables and statistical analysis results.

Table 1: Socio-demographic and Disaster-Related Characteristics of the Students

Characteristics	**Number**	**Percentage**
Age		
20 years and below	264	56.1
Over 20 years	207	43.9
Gender		
Female	350	74.3
Male	121	25.7
Department		
Emergency and disaster management	86	18.3
First and emergency aid	85	18.0
Anesthesia	32	6.8
Child Development	41	8.7
Medical imaging techniques	49	10.4
Oral and dental health	54	11.5
Pharmacy services	48	10.2
Medical documentation and secretariat	33	7.0
Nursing care at home	43	9.1
University year		
First year	260	55.2
Second year	211	44.8
How would you describe your income status?		
Low	101	21.4
Moderate	363	77.1
High	7	1.5
Where have you spent most of your life?		
Province	214	45.4
District	132	28.0
Village	125	26.5
Have you experienced a disaster before?		
Yes	323	68.6

No	148	31.4
Have you been trained in disasters?		
Yes	220	46.7
No	251	53.3
Have you attended a disaster drill before?		
Yes	370	78.6
No	101	21.4
Are you a disaster volunteer?		
Yes	131	27.8
No	340	72.2
Total	471	100

Table 1 shows the socio-demographic and disaster-related characteristics of the participants. 74.3% of the students were female and 56.1% of them were aged between 18 and 20 years. 18.3% of the participants were students enrolled in the Department of Emergency and Disaster Management, and the rate of first-year students was higher (55.2%). The income status of the participants was medium (77.1%), and the rate of those who spent most of their lives in a province was higher (45.4%). When the characteristics related to disasters were analyzed, 68.6% of the participants had experienced a disaster before and 53.3% had never been trained in disasters. Moreover, 78.5% of the participants had attended a disaster drill before, while the rate of disaster volunteers was lower (72.2%).

Table 2: Distribution of Total Score and Subscale Mean Scores of the Scales Used in the Study

Scales	**Mean±sd**	**Min.**	**Max.**
Total Score of DAS	74.17±11.32	46	113
Disaster information	17.27±1.95	8	20
Pre-disaster	15.63±5.59	6	30
During a disaster	10.35±2.72	3	15
Post-disaster	17.96±3.20	8	30
Awareness of non-structural risks (ANSR)	12.93±3.53	4	20
Total Score of SCMSD	154.53±21.00	68	200
Post-disaster crisis management skills	41.82±5.38	22	50
Strategy skills during disaster	45.94±7.63	12	60
Action skills during a disaster	52.02±7.79	28	70
Pre-disaster crisis management skills	14.73±2.82	4	50

Table 2 shows information about the total and subscale mean scores of the participants in disaster awareness scale and scale of crisis management skills in disaster situation. Accordingly, the total mean scores of the students in the disaster awareness scale were 74.17±11.32 and their total mean scores in the scale of crisis management skills in disaster situation were 154.53±21.00.

Table 3: Distribution of the Mean Scores of the Disaster Awareness Scale and its Subscales Based on Socio-demographic and Disaster-Related Characteristics of Students (n=471)

Characteristics	**DA Scale**	**Disaster information**	**Pre-disaster**	**During a disaster**	**Post-disaster**	**ANSR**
Age						
20 years and below	74.17±10.79	17.25±1.96	15.69±5.49	10.31±2.62	17.90±3.21	13.00±3.37
Over 20 years	74.16±11.99	17.29±1.95	15.55±5.72	10.41±2.85	18.05±3.20	12.84±3.73
Statistics	t:.009 p=.993	t:-.230 p=.818	t:.272 p=.787	t:-.399 p=.690	t:-.509 p=.611	t:.494 p=.626
Gender						
Female	72.95±10.93	17.18±1.93	15.40±5.49	9.75±2.53	17.95±3.05	12.64±3.42
Male	77.70±11.72	17.52±2.00	16.28±5.82	12.09±2.49	18.00±3.60	13.77±3.72

Statistics	t:-4.041 **p=.000***	t:-1.651 p=.106	t:-1.496 p=.135	t:-8.782 p=.000*	t:-.160 p=.883	t:-3.060 p=.004*
Department						
Emergency and disaster management	80.05±9.56	17.90±1.82	17.29±5.62	12.56±2.20	18.41±2.97	13.87±3.19
First and emergency aid	74.81±11.71	17.67±1.74	15.50±5.92	10.37±2.67	18.34±3.19	12.91±3.61
Anesthesia	69.21±8.60	17.40±1.82	14.53±4.60	9.12±2.63	16.81±2.63	11.34±3.10
Child Development	72.78±11.85	16.95±1.92	15.02±6.03	9.63±2.210	17.82±3.89	13.34±3.19
Medical imaging techniques	71.51±10.93	16.91±2.10	14.95±5.06	10.14±2.38	17.71±3.71	11.77±3.47
Oral and dental health	72.61±9.35	16.77±1.92	15.85±4.78	9.64±2.35	17.29±3.01	13.03±3.22
Pharmacy services	75.57±13.11	16.85±2.18	15.81±5.82	10.00±2.70	18.97±2.97	13.39±3.85
Medical documentation and secretariat	72.57±13.11	17.03±2.21	14.87±6.28	10.03±2.97	18.03±3.22	12.60±3.96
Nursing care at home	71.41±10.77	17.13±1.79	14.86±5.48	9.30±2.64	17.27±2.80	12.83±3.87
Statistics**	F:5.003 **p=.000***	F:2.800 p=.005*	F:1.461 p=.169	F:11.453 p=.000*	F:2.107 p=.034*	F:2.501 p=.011*
Significance**	1-2, 1-3, 1-4, 1-5, 1-6, 1-8, 1-9,					
University year						
First year	73.93±11.19	17.33±1.97	15.73±5.57	10.13±2.66	17.48±3.19	13.20±3.53
Second year	74.51±11.49	17.20±1.94	15.50±5.61	10.63±2.78	18.55±3.12	12.60±3.52
Statistics	t:-.583 p=.560	t:.673 p=.501	t:.446 p=.656	t:-1.953 p=.052	t:-3.652 p=.000*	t:1.827 p=.068
How would you describe your income status?						
Low	72.17±11.26	17.35±1.99	14.61±5.80	10.03±3.08	17.52±3.15	12.64±3.07
Moderate	74.66±11.19	17.25±1.94	15.86±5.43	10.41±2.59	18.09±3.16	13.03±3.64
High	77.42±16.62	17.14±2.19	18.28±8.80	11.85±3.53	17.85±5.33	12.28±4.23
Statistics**	F:2.213 p=.111	F:.120 p=.887	F:2.807 p=.061	F:1.844 p=.159	F:1.250 p=.287	F:.592 p=.554
Where have you spent most of your life?						
Province	75.72±11.53	17.61±1.89	16.48±5.63	10.61±2.739	17.93±3.33	13.07±3.58
District	73.82±11.29	16.83±2.01	15.56±5.57	10.07±2.745	18.14±2.87	13.21±3.57
Village	71.88±10.64	17.16±1.91	14.26±5.28	10.22±2.663	17.84±3.33	12.40±3.37
Statistics**	F:4.688 **p=.010***	F:7.009 p=.001*	F:6.363 p=.002*	F:1.795 p=.167	F:.309 p=.734	F:2.024 p=.133
Significance**	1-3,					
Have you experienced a disaster before?						
Yes	73.75±11.41	17.38±1.91	15.37±5.56	10.36±2.84	17.86±3.13	12.77±3.66
No	75.08±11.11	17.04±2.04	16.20±5.63	10.34±2.46	18.19±3.34	13.29±3.22
Statistics	t:-1.177 p=.235	t:1.771 p=.077	t:-1.512 p=.131	t:.077 p=.936	t:-1.044 p=.297	t:-1.474 p=.124
Have you been trained in disasters?						
Yes	77.78±11.11	17.52±1.90	16.85±5.77	11.27±2.66	18.56±3.17	13.56±3.46
No	71.00±10.54	17.05±1.97	14.56±5.20	9.55±2.52	17.44±3.14	12.38±3.51
Statistics	t:6.785 **p=.000***	t:2.623 p=.009*	t:4.523 p=.000*	t:7.168 p=.000*	t:3.829 p=.000*	t:3.679 p=.000*
Have you attended a disaster drill before?						
Yes	74.91±11.25	17.29±1.93	15.81±5.64	10.56±2.69	18.09±3.19	13.15±3.54
No	71.44±11.21	17.21±2.03	14.99±5.35	9.59±2.70	17.50±3.20	12.13±3.39
Statistics**	t:2.751 **p=.007***	t:.337 p=.737	t:1.308 p=.191	t:3.213 p=.001*	t:1.642 p=.101	t:2.573 p=.009*
Are you a disaster volunteer?						
Yes	79.54±10.18	17.80±1.88	17.41±5.55	11.86±2.55	18.72±3.02	13.73±3.48
No	72.10±11.06	17.07±1.94	14.94±5.45	9.77±2.56	17.67±3.22	12.62±3.51
Statistics	t:6.686 **p=.000***	t:3.718 p=.000*	t:4.383 p=.000*	t:7.902 p=.000*	t:3.213 p=.001*	t:3.062 p=.002*

Note: (*p<0.05; **Tukey Test)

Table 3 shows the distribution of the variables related to the socio-demographic and disaster-related characteristics of the students and the total and subscale mean scores of the disaster awareness scale. Accordingly, a statistically significant difference was found between the total scores of the disaster awareness scale and the variables of gender, department, longest lived place of residence so far, disaster training, attendance at disaster drills, and disaster volunteerism. The gender variable had a significant effect on disaster awareness. The disaster awareness level of male students (77.70±11.72) was higher than that of female students ($p<0.05$). The department variable had a significant effect on disaster awareness ($F = 5.003$; $p<0.05$). The results of the Tukey test run to determine which department differed between the disaster awareness levels of the students showed that the disaster awareness level of the students enrolled in the Department of Emergency and Disaster Management (80.05±9.56) was higher than the students enrolled in the other departments. The variable of the longest lived place of residence so far had a significant effect on disaster awareness ($F=4.688$; $p<0.05$). The results of the Tukey test run to determine which place of residence differed between the disaster awareness levels of the students showed that the disaster awareness level of the students who lived in a province was higher than that of the students who lived in a district or village. The variable of disaster training had a significant effect on disaster awareness. The disaster awareness level of the students who had been trained in disaster was higher than that of those who had not been trained ($p<0.05$). The variable of attendance to disaster drills had a significant effect on disaster awareness. The disaster awareness level of the students who attended the disaster drill was higher than that of those who did not ($p<0.05$). Finally, the variable of disaster volunteerism had a significant effect on disaster awareness. The disaster awareness level of the students who volunteered for disaster was higher than that of those who did not volunteer ($p<0.05$).

Table 4: Distribution of the Mean Scores of the Scale of Crisis Management Skills in Disaster Situation and its Subscales Based on Socio-demographic and Disaster-Related Characteristics of the Students (n=471)

Characteristics	**SCMSD Scale**	**Post-Disaster Crisis Management Skills**	**Strategy Skills During Disaster**	**Action Skills During Disaster**	**Pre-Disaster Crisis Management Skills**
Age					
20 years and below	154.09±20.75	41.90±5.36	45.92±7.57	51.62±7.58	14.64±2.77
Over 20 years	155.08±21.35	41.71±5.43	45.97±7.73	52.54±8.04	14.85±2.87
Statistics	t:-.504 p=.616	t:.397 p=.691	t:-.071 p=.943	t:-1.278 p=.205	t:-.791 p=.429
Gender					
Female	152.95±21.12	41.73±5.49	45.59±7.66	51.13±7.77	14.48±2.71
Male	159.08±20.04	42.06±5.09	46.95±7.50	54.60±7.28	15.46±3.00
Statistics	t:-2.785 **p=.006***	t:-.578 p=.549	t:-1.687 p=.092	t:-4.293 p=.000*	t:-3.308 p=.002*
Department					
Emergency and disaster management	166.60±18.13	44.47±4.15	49.15±7.22	57.00±6.95	15.97±2.82
First and emergency aid	159.31±19.56	42.71±5.21	47.02±7.47	54.24±6.79	15.32±2.57
Anesthesia	145.06±24.40	39.96±5.92	43.50±9.25	47.78±7.93	13.81±2.96
Child Development	150.09±20.25	40.48±5.43	45.29±7.07	49.97±7.54	14.34±2.55
Medical imaging techniques	148.63±18.38	40.26±4.94	44.16±6.03	50.24±7.25	13.95±2.88
Oral and dental health	146.09±19.04	39.70±5.42	43.42±7.42	48.77±6.60	14.18±2.72
Pharmacy services	153.81±20.07	41.72±5.36	46.25±7.53	51.47±7.80	14.35±2.62
Medical documentation and secretariat	153.06±22.91	42.03±5.48	45.48±8.86	50.90±8.57	14.63±3.00
Nursing care at home	151.44±20.06	41.76±5.68	45.02±6.97	50.39±7.06	14.25±2.70

Statistics**	F:7.638 **p=.000***	F:5.671 p=.000*	F:3.909 p=.000*	F:9.927 p=.000*	F:4.297 p=.000*
Significance**	1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9.				
University year					
First year	154.16±20.68	42.09±	45.96±7.57	51.50±7.60	14.61±2.73
Second year	154.97±21.42	41.48±	45.91±7.72	52.67±8.00	14.89±2.92
Statistics	t:-.414 p=.679	t:1.211 p=.227	t:.072 p=.943	t:-1.633 p=.103	t:-1.087 p=.278
How would you describe your income status?					
Low	153.45±21.75	41.23±5.65	45.43±7.74	52.27±7.86	14.50±2.74
Moderate	154.61±20.80	41.92±5.33	46.01±7.58	51.89±7.77	14.77±2.83
High	165.85±19.52	44.71±2.56	49.71±8.59	55.42±8.07	16.00±2.94
Statistics**	F:1.154 p=.316	F:1.678 p=.188	F:1.091 p=.337	F:.771 p=.463	F:1.084 p=.339
Where have you spent most of your life?					
Province	155.96±21.16	42.08±5.31	46.31±7.32	52.73±8.15	14.83±2.83
District	152.59±21.97	41.62±5.87	45.10±8.13	51.31±7.60	14.54±2.93
Village	154.12±19.61	41.57±4.98	46.19±7.61	51.57±7.32	14.78±2.68
Statistics**	F:1.083 p=.339	F:.467 p=.627	F:1.111 p=.330	F:1.650 p=.193	F:.441 p=.644
Have you experienced a disaster before?					
Yes	154.04±22.23	41.83±5.59	45.61±8.09	51.85±8.18	14.74±2.91
No	155.58±18.04	41.79±4.91	46.66±6.50	52.39±6.89	14.72±2.61
Statistics	t:-.739 p=.425	t:.066 p=.945	t:-1.385 p=.134	t:-.699 p=.457	t:.047 p=.962
Have you been trained in disasters?					
Yes	161.13±19.52	42.97±5.08	47.98±7.14	54.67±7.31	15.50±2.73
No	148.74±20.57	40.80±5.45	44.15±7.61	49.70±7.47	14.07±2.73
Statistics	t:6.681 **p=.000***	t:4.443 p=.000*	t:5.611 p=.000*	t:7.262 p=.000*	t:5.658 p=.000*
Have you attended a disaster drill before?					
Yes	155.90±20.65	42.14±5.17	46.37±7.58	52.45±7.74	14.91±2.80
No	149.51±21.61	40.63±5.99	44.35±7.66	50.44±7.80	14.07±2.81
Statistics	t:2.727 **p=.007***	t:2.514 p=.022*	t:2.367 p=.018*	t:2.311 p=.021*	t:2.668 p=.008*
Are you a disaster volunteer?					
Yes	164.81±19.56	43.76±4.88	48.90±7.39	56.33±7.13	15.80±2.89
No	150.56±20.20	41.07±5.39	44.80±7.42	50.36±7.40	14.32±2.68
Statistics	t:6.919 **p=.000***	t:4.975 p=.000*	t:5.385 p=.000*	t:7.917 p=.000*	t:5.252 p=.000*

Note: (*p<0.05; **Tukey Test)

Table 4 shows the distribution of the variables related to the socio-demographic and disaster-related characteristics of the students, the scale of crisis management skills in disaster situation, and its total and subscale mean scores. Accordingly, a statistically significant difference was found between the variables of gender, department, disaster training, attendance to disaster drills, and disaster volunteerism and the total score of the scale of crisis management skills in disaster situation. The gender variable had a significant effect on crisis management skills in disaster situation. The crisis management skill level of male students in the event of a disaster was higher than those of female students ($p<0.05$). The department variable had a significant effect on crisis management skills in the event of a disaster ($F = 7.638$; $p<0.05$). The results of the Tukey test run to determine which department differed between the crisis management skill levels of the students in the event of a disaster showed that disaster awareness levels of the students in the event of a disaster who were enrolled in the Department of Emergency and Disaster Management were higher when compared to the students enrolled in other departments. The variable of disaster training had a significant effect on crisis management skills in the event of a disaster. The crisis management skill level of the students

in the event of a disaster who had been trained in disaster was higher than those of that who had not been trained ($p<0.05$). The variable of attendance to disaster drills had a significant effect on crisis management skills in the event of a disaster. The crisis management skill level in the event of a disaster was higher in the students who attended the disaster drill compared to those who did not ($p<0.05$). Finally, the variable of disaster volunteerism had a significant effect on crisis management skills in the event of a disaster. The crisis management skill levels in the event of a disaster were higher in those who volunteered in the disaster compared to those who did not volunteer ($p<0.05$).

Table 5: Table of Correlation Analysis of the Students' Levels of Disaster Awareness and Crisis Management Skills in a Disaster

		Mean Scores of the Disaster Awareness	**Mean Scores of the Crisis Management Skills in a Disaster**
Mean Scores of the Disaster Awareness	Pearson Correlation (r)	1	.547**
	p		.000
	n	471	471
Mean Scores of the Crisis Management Skills in a Disaster	Pearson Correlation (r)	.547**	1
	p	.000	
	n	471	471

Table 5 shows the information on the correlation analysis about students' levels of disaster awareness and crisis management skills in a disaster. The analysis results revealed that since the p value was less than 0.05, the correlation between them was significant, and there was a strong and positive correlation ($r=0.547$) between disaster awareness and crisis management skills in the event of a disaster.

5. Discussion

Disaster awareness is important for creating individual disaster awareness about the hazards and risks that may be exposed in disasters, minimizing disaster risks with the measures to be taken, and managing the crises that may arise after disasters. This study tried to determine how they react to a crisis in the case of a disaster, the factors they perceive to be the cause of the crisis, their levels of crisis management skills, the success of their strategies to prevent or resolve the crisis, the challenges they experience in crisis, how their crisis management skills vary in terms of level of disaster awareness.

The study indicated that the disaster awareness level of the students and their crisis management skills in the event of a disaster were moderate. The literature contains studies on disaster awareness yielding similar results to the findings of this study. For example, in their study Kırıkkaya, et al., (2011: 36) aimed to determine teachers' opinions on the topics of disaster training in the elementary curriculum of science and technology and found that a great majority of the participant teachers held a moderate (sufficient) level of knowledge on disaster. Likewise, the study conducted by Gezer and Aksu (2022: 400) to determine the disaster awareness levels of the prospective teachers of social studies and to examine them by various variables, reported that the prospective teachers of social studies had a moderate level of disaster awareness.

Many factors affect individuals' disaster awareness. It has been reported that factors such as disaster training and experience, economic capability, risk perception and awareness, and the vulnerability level of people are effective in raising disaster awareness (Richert et al., 2017: 342; Cai et al., 2018: 844; Tekeli-Yeşil et al., 2011: 427). The results of this study showed that the variables of gender, department, longest lived place of residence so far, disaster training, attendance at disaster drills, and disaster volunteerism are effective in raising disaster awareness. A study conducted by Kiraz and Karademir (2021: 73) reported that the disaster awareness levels of the participants showed a significant difference by gender. The results of the Tukey test run for the department variable indicated that the disaster awareness level of the students

enrolled in the Department of Emergency and Disaster Management was higher than that of other departments, suggesting that it is significant. It is obvious that their two-year training played an important role in raising disaster awareness. The results of the Tukey test run for the variable of the place of residence indicated that the disaster awareness level of the students who lived in a province was higher. It is considered significant that such a conclusion comes out due to the easier access of the individuals who live in a province to the activities related to disasters or the existing resources. It is indicated that it is possible to raise individuals' knowledge, risk perception, awareness, and preparedness for disasters through disaster training (Adiyoso and Kanegae, 2012: 165). For example, a study conducted by Ünal et al., (2022: 118) to determine the disaster awareness and preparedness levels of the people of Uşak indicated that individuals who were trained in disasters had higher levels of disaster awareness. A similar study found that the theoretical or practical effect of the training provided by individuals at school, family, community, or individually increased (Codreanu et al., 2014: 1). Another study reported a significant correlation between disaster preparations and training in the regions where disasters struck (Muttarak and Pothisiri, 2013: 50). Disaster drills represent one of the important steps to raising disaster awareness. The information learned through training (information about before, during, and after disasters) becomes permanent by turning into practice through drills. In this sense, the results of this study show that disaster drills are an important predictor of disaster awareness. Finally, disaster volunteerism is an important action that covers all activities such as search and rescue, sheltering, medical and psychological assistance, and feeding that are needed before and after the disaster at every stage of a possible disaster. The results of this study revealed that the disaster awareness levels of the students who volunteered for disasters were higher. From this perspective, it can be asserted that becoming a disaster volunteer has an important effect on disaster awareness.

The literature contains a limited number of studies that analyze the crisis management skills of individuals in the event of a disaster. These studies have indicated that there are some variables affecting crisis management skills (Adıgüzel, 2007: 72; Memduhoğlu and Ayyürek, 2014: 183; Atabay, 2019: 87; Acar and Özbaşı, 2022: 90). According to the results of this study, the variables of gender, department, disaster training, attendance at disaster drills, and disaster volunteerism were found to be effective in crisis management skills in the event of a disaster. The study conducted by Memduhoğlu and Ayyürek (2014: 181) on the crisis management capabilities of teachers concerning the Van earthquake indicated a significant difference by gender variable. The results of the Tukey test run for the department variable indicated that the crisis management skills level in the event of a disaster was higher in those who enrolled in the emergency and disaster management department than that of the other departments, suggesting that it was significant. Both their theoretical and practical training for two years are considered to be effective in emergence of such a consequence. Disaster training fosters people's resilience against disasters and improves the effectiveness of response and recovery phases by supporting them in preparing for disasters (Ronan and Towers, 2014: 2). From this perspective, the results of this study showed that disaster training was an important predictor of crisis management skills in the event of a disaster. Likewise, Atabay (2019: 87) indicated that there was a significant difference based on the variable of the attendance of individuals employed in a state hospital to training on crisis management and the crisis management competences of the employees who were trained were higher. Learning by action in disaster management is a highly effective method of acquiring knowledge and skills (Siriwardena et al., 2013: 183). Given the results of this study in this respect, disaster drills were found to be effective for improving crisis management skills in the event of a disaster. Similarly, the study conducted by Acar and Özbaşı (2022: 91) reported that the participants who attended disaster-related drills were more qualified in their action skills after the disaster, during the disaster, and in their crisis management skills before the disaster. Finally, this study found that crisis management skills in the event of a disaster differed by disaster volunteerism. Activities such as search and rescue, sheltering, medical and psychological assistance, and feeding in disasters are mostly carried out with the support of volunteers (Auf der Heide, 2006: 45). Hence, disaster volunteerism occupies an important place in the disaster management process. This study puts forward the importance of disaster volunteerism.

This study found a strong positive ($r=0.547$) and significant ($p<0.05$) correlation between disaster awareness and crisis management skills in the event of a disaster. In other words, the students' disaster awareness and crisis management skills in the event of a disaster grow significantly together, with a strong correlation. The variance that the variables explained for each other was 29.92%. In other words, 29.92% of crisis management skills in the event of a disaster may result from disaster awareness. Nowadays, we acknowledge that it is impossible to know the exact time and place of a natural or human-induced hazard beforehand and to prevent these destructive natural events. However, the prevention of losses resulting from disasters in societies where disaster awareness has been established and a certain level of preparedness has been reached is possible by producing systematic solutions. Therefore, all layers of society should be trained on disasters. Individuals with disaster awareness are better prepared for disasters, and they know how to respond to disasters, how to protect themselves from disasters, and how to restore themselves quickly after disasters. Since the entire society should respond to disasters, the more educated the society is, the more successful the disaster response will be. While people help the professional teams until the arrival of the emergency response team to the disaster site or during the response process, their level of knowledge about disasters would have a positive impact on the crisis management processes at the time of the disaster.

6. Conclusion and Recommendations

It is seen that the findings obtained in line with the purpose of the study are important. The fact that the participants' disaster awareness and crisis management skill levels are above the average is an important result for university students studying in a city where significant disasters, especially earthquakes, have occurred in the past. Both study findings and literature studies show that individuals' disaster awareness levels have a key role on their crisis management skills during disasters. It is thought that especially the existence of a programme related to disaster and emergency situations in the vocational college where the research was conducted and the disaster awareness formed with various trainings on disaster are effective on crisis management skills in case of disaster. In this context, in our country where young population density is predominant, university students should be trained on disaster risk perception and awareness in order to reduce disaster damages and to improve crisis management skills during disasters. Considering the effects of disasters seen in a complex manner in recent years, this will be one of the important steps towards creating a disaster-resilient society.

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