DISASTER ATTITUDE AND INDIVIDUAL DISASTER RESILIENCE AMONG UNİVERSITY STUDENTS AND INFLUENCING FACTORS: A DISASTER ZONE SAMPLE

ÜNİVERSİTE ÖĞRENCİLERİNİN AFET TUTUMLARI İLE BİREYSEL AFET DAYANIKLILIĞI ARASINDAKİ İLİŞKİ: BİR AFET BÖLGESİ ÖRNEĞİ

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ABSTRACT

The aim of this study is to determine the level of disaster attitudes and disaster resilience among university students and to evaluate the factors affecting them. This descriptive and relational study was conducted with 411 university students studying in a disaster-affected province. The students, with an average age of 21.71±2.02, revealed that 80.3% had previously been exposed to a disaster, 16.1% had experienced disaster-related losses and 44% had received disaster training, The average disaster attitude scores and individual disaster resilience levels of university students were evaluated as moderate. The study found that having a personal disaster plan, having received disaster training, and being informed about environmental disaster risks were significant predictors of disaster attitude and individual disaster resilience (p<.05). Factors such as receiving disaster education and having a personal disaster plan, positively influenced the disaster attitudes and the disaster resilience of university students. In light of these results, it is recommended that disaster education be provided to university students, who represent an informed segment of society, to reduce the potential risks of disasters and to enhance the capacity to cope with disaster risks. It is also suggested that disaster education programs include information on disaster risks, vulnerable areas of the cities, and the stages of disaster preparedness and response.

Keywords: Disaster, Disaster Attitude, Resilience, Health, Student.

ÖZET

Bu araştırmada amaç, üniversite öğrencilerinde afet tutumu ile afet direnci arasındaki ilişkiyi değerlendirmektir. Tanımlayıcı ve ilişkisel türden olan araştırma, afet bölgesi bir ilde öğrenim gören 411 üniversite öğrencisi ile yürütüldü. Yaş ortalaması 21.71±2.02 olan öğrencilerin %80.3'ünün daha önce bir afete maruz kaldığı, %16.1'inin afete bağlı kayıp yaşadığı ve %44'ünün afet eğitimi almış olduğu görüldü. Üniversite öğrencilerinin afet tutum puan ortalamaları ve bireysel afet direnç düzeyleri orta düzeyde değerlendirildi. Kişisel afet planına sahip olma, afet eğitimi almış olma, çevresel afet riski hakkında bilgi sahibi olmanın, afet tutumu ve bireysel afet direncinin yordayıcıları olduğu görüldü (p<.05). Afet eğitimi almış olmak ve kişisel afet planına sahip olmak üniversite öğrencilerinin afet tutumlarını ve afet direncini olumlu yönde etkilemiştir. Elde edilen sonuçlar doğrultusunda, afetlerin olası risklerini azaltmak ve afet riskleriyle mücadele etmek amacıyla, toplumun bilinçli kesimini oluşturan üniversite öğrencilerine afet eğitimi verilmesi önerilmektedir. Afet eğitim programlarının, afet riskleri, yaşanılan şehirlerin riskli bölgeleri, afetlere hazırlık ve müdahale aşamaları hakkında bilgilendirme içermesi önerilmektedir.

Anahtar Kelimeler: Afet, Afet Tutumu, Dayanıklılık, Sağlık, Öğrenci.

1. INTRODUCTION

Disasters are defined by the World Health Organization as "an event that disrupts the normal conditions of existence and causes a level of suffering and distress that exceeds the affected community's capacity to cope" (Alshakka et al., 2022). Both natural and human-made disasters are increasingly prevalent on a global scale. Biological terrorism, nuclear leaks, pandemics, floods, earthquakes, and similar disasters continue to cause loss of life and property, as well as social and psychological issues (Li et al., 2022; Mansour et al., 2020). These events often undermine individuals' ability to utilize their own resources, thereby necessitating external support (Akil & Inal Onal, 2022).

Disasters can occur in any society and can lead to devastating effects. However, the impact of disasters is often more severe in countries with lower socioeconomic levels (AlQahtany & Abubakar, 2020). While disasters affect individuals of all ages, their negative effects are particularly pronounced for disadvantaged groups such as children, women, the elderly, people with disabilities, and youth (Türkan et al., 2019). Disasters have caused the loss of thousands of children and young people, as well as physical, psychological, and social problems (Fan et al., 2016). Increasing resilience levels contributes to overcoming the negative effects of risk exposures and aids individuals in coping with trauma by preventing negative impacts (Zhang et al., 2021). In this context, enhancing individual disaster resilience will play a crucial role in reducing the negative effects of disasters on children and adolescents. It is essential to increase knowledge, awareness, and capacity regarding disaster preparedness and coping strategies (Hamdan-mansour & Hamdan-Mansour, 2015; Varol & Buluş Kırıkkaya, 2017; Freebairn et al., 2020). Generally, the sensitivity of young people to disasters depends on their financial access, housing conditions, and knowledge about the socio-environmental conditions of their region. However, a high level of resilience in adolescents indicates a higher level of psychological preparedness for disasters (Setyo Palupi & Noor Rahman Himawan, 2020). University students are typically considered a low-risk group, assuming they know how to prepare for disasters. However, it has been observed that some university students are not sufficiently aware of disasters, are inadequately prepared for them (Hasan et al., 2022) and have low levels of knowledge and attitudes regarding disaster preparedness and prevention (Alrazeeni, 2015). Therefore, among young people who have experienced disasters, the level of disaster resilience may be a significant determinant in managing and coping with the disaster and its aftermath.

Turkey is a country with a high earthquake risk, frequently experiencing disasters. Each year, earthquakes of magnitude 5 to 6 occur, with significant loss of life and property approximately every five years (AFAD, 2018; Gerdan, 2014). The earthquake that struck Kahramanmaraş on February 6, 2023, affected 11 provinces and resulted in the loss of 50,339 lives. Shortly after the earthquake, a total of six additional cities, including the city where this study was conducted, were declared disaster zones (World Health Organization, 2023). In this high-risk country with a large youth population, it has been observed that many university curricula do not include disaster management education. The university where this research was planned also lacks disaster-related content in many of its programs. Therefore, evaluating the disaster attitudes and individual disaster resilience of university students becomes crucial. Awareness, positive attitudes, and resilience are essential for disaster prevention and effective risk management. Thus, this study was conducted to determine the disaster attitudes and individual disaster resilience levels of university students living in disaster-prone areas and to evaluate the factors influencing these aspects.

Nazan GÜRARSLAN BAŞ, Gülnaz KARATAY & Nilgün SÖYLEMEZ

Disaster Attitude And Individual Disaster Resilience Among University Students And Influencing Factors: A Disaster Zone Sample

2. METHOD

2.1. Design

This study is a descriptive and correlational research.

2.2. Sample

The study population consisted of students from the Faculty of Health Sciences (including Nursing, Midwifery, Child Development, Nutrition and Dietetics, and Social Work departments) studying in a disaster-affected province in eastern Turkey. Power analysis was used to calculate the sample size (Alpha = 0.05, Effect Size = 0.5, Power = 0.80), resulting in a required sample size of 393 students. A total of 411 students voluntarily participated in the study.

2.3. Data collection instruments

Data for the study were collected using the "Student Demographic Information Form," the Disaster Attitude Scale, and the Individual Disaster Resilience Assessment (IDRA) Scale.

2.3.1. Student Demographic Information Form: This form included a total of 14 questions: 5 questions related to demographic characteristics such as age, gender, and class, and 9 questions concerning disaster knowledge and experiences.

2.3.2. Disaster Attitude Scale (DAS): This scale was developed by Türkan and Kılıç in 2017. It consists of 23 items divided into three dimensions: cognitive (7 items), affective (9 items), and behavioral (7 items), using a 5-point Likert scale. The highest possible average item score is 5, while the lowest is 1. The Cronbach's Alpha coefficient for the scale was reported as .82 (Türkan & Kılıç, 2017). In this study, the Cronbach's Alpha coefficient was calculated to be .85.

2.3.3. Individual Disaster Resilience Assessment (IDRA) Scale: The IDRA Scale, developed by (Ditirro, 2018) and adapted into Turkish by (Yayla, 2020), consists of four dimensions: Knowledge, Information, Sociology, and Emotionality. Each dimension includes 5 questions, totaling 20 questions in the scale. Four questions in the Emotionality dimension (items 16, 17, 18, and 19) are scored reversely. The Cronbach's Alpha coefficient for the IDRA Scale was reported as 0.839 (Yayla, 2020). In this study, the Cronbach's Alpha coefficient was calculated to be .849.

2.4. Data collection

Prior to data collection, the necessary official permissions were obtained from the university. Data were collected from students who were accessible and voluntarily participated in the study between March and May 2024. Face-to-face interviews were used for data collection, and the process took approximately 15-20 minutes.

2.5. Data analysis

The data obtained from the study were entered into and analyzed using the SPSS software package. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used in the data evaluation. Before conducting comparative statistics, a normality test was applied to the data. For normally distributed data, the Student's t-test was used; for non-normally distributed data, the Mann-Whitney U test was applied. Linear regression and correlation tests were also performed. Results were considered statistically significant at a 95% confidence interval and a p-value of <.05.

2.6. Ethical considerations

Before commencing the research, approval was obtained from the university's "Non-Invasive Human Research Ethics Committee" (Number: E-30603717-050.04-2400006290, Decision No: 2024/01-01). The study adhered to the norms outlined for individuals in the Helsinki Declaration.

3. RESULTS

The students, with an average age of 21.71±2.02 (Min=18, Max=38), were 80% female. Of these students, 27.5% were from the Nursing program. The students reported that 80.3% had previously experienced a disaster themselves, 84.7% had relatives who had been exposed to a disaster, and 16.1% had lost a relative due to a disaster. Furthermore, 46.0% of the students obtained disaster information from social media, 44.0% had received disaster training, 24.1% had an individual disaster plan, 77.9% were aware of the disaster risk in their environment, only 5.1% considered their environment to be well-prepared for disasters, and 7.1% found their environment to be conscious of disaster risks (Table 1).

Table 1. Characteristics that May Affect Students' Disaster Attitudes and Individual Disaster Resilience

Characteristics	Category	N	%
Age	21.71±2.02 (Min=18, Max=38)		
Gender	Female	329	80
	Male	82	20
Field of study	Emergency Disaster and First Aid	30	7.3
	Nutrition and Dietetics	95	23.1
	Child Development	88	21.4
	Midwifery	60	14.6
	Nursing	117	27.5
	Social Work	21	5.1
Class	1	90	31.9
	2	139	33.8
	3	94	22.9
	4	88	21.4
Previous exposure to disasters	Yes	330	80.3
	No	81	19.7
Exposure to disasters among relatives	Yes	348	84.7
	No	63	15.3
Experience of loss due to disasters	Yes	66	16.1
	No	345	83.9
Disaster training status	Yes	181	44.0
	No	230	56.0
Possession of an individual disaster plan	Yes	99	24.1
	No	312	75.9
Knowledge of environmental disaster risks	Yes	320	77.9
	No	91	22.1
Perception of environmental preparedness for disasters	Yes	21	5.1
	No	390	94.9

Nazan GÜRARSLAN BAŞ, Gülnaz
KARATAY & Nilgün SÖYLEMEZ

Disaster Attitude And Individual Disaster Resilience Among
University Students And Influencing Factors: A Disaster Zone
Sample

Perception of environmental awareness regarding disasters	Yes		29	7.1
	No		382	92.9

The students' mean score for the DAS was 71.20±10.94. The mean scores for the subscales were as follows: Cognitive Subscale, 19.34±5.02; Affective Subscale, 36.14±6.22; and Behavioral Subscale, 15.72±5.11.The mean score for the IDRA was 60.85±10.19. The mean scores for the subscales of the IDRA were: Knowledge Subscale, 15.10±3.83; Information Subscale, 14.08±3.84; Sociology Subscale, 18.68±3.29; and Emotionality Subscale, 12.98±3.63 (Table 2).

Table 2. Mean Scores for the DAS and IDRA Scales

Scale/Subscale	M±SD	Min-Max
Total DAS Score	71.20±10.94	23-109
Mean score for the Cognitive Subscale	19.34±5.02	7-35
Mean score for the Affective Subscale	36.14±6.22	9-45
Mean score for the Behavioral Subscale	15.72±5.11	7-32
Total IDRA Score	60.85±10.19	24-92
Mean score for the Knowledge Subscale	15.10±3.83	5-25
Mean score for the Information Subscale	14.08±3.84	5-25
Mean score for the Sociology Subscale	18.68±3.29	5-25
Mean score for the Emotionality Subscale	12.98±3.63	5-25

There was no statistically significant difference in the mean scores for the DAS based on students' gender and their perception of environmental preparedness for disasters (p>.05). However, students who had previously experienced a disaster, experienced disaster-related loss, received disaster training, had an individual disaster plan, were aware of the disaster risks in their environment, and considered their environment to be disaster-conscious had higher DAS mean scores, which were statistically significant (p<.005).Similarly, male students, those who had experienced a disaster, received disaster training, had an individual disaster plan, were aware of the disaster risks in their environment, and considered their environment to be disaster-conscious had higher mean scores on the IDRA, which were statistically significant (p<.005). However, no statistically significant differences in IDRA mean scores were found based on previous exposure to disasters, experiencing loss of a relative due to a disaster, and perception of environmental preparedness (p>.005) (Table 3).Although not shown in the table, a statistically significant positive correlation was found between the total mean scores of the DAS and IDRA (r = .460, p = .000).

Table 3. Mean Scores for the DAS and IDRA According to Selected Variables

Characteristics	Category	DAS	IDRA
		M±SD	M±SD
Gender	Female Male	71.01±10.13 71.97±13.78	60.27±1012 63.20±10.17
Test and p		t=-.713,p=.476	t= -2.345,p=.020
Previous exposure to disasters	Yes No	71.73±10.75 69.06±11.49	61.44±10.38 58.45±9.04
Test and p		t=1.973, p=.049	t=2.380,p=.018
Exposure to disasters among relatives	Yes No	71.88±10.64 67.46±11.86	61.27±10.50 58.58±7.93
Test and p		t=2.979, p=.003	t=1.929, p=.059
Experience of loss due to disasters	Yes No	73.87±12.35 70.69±10.59	61.56±11.24 60.72±9.98
Test and p		t= 2.176, p=.030	t=.610, p=.542
Disaster training status	Yes No	75.01±11.42 68.20±9.56	64.71±10.10 57.82±9.21
Test and p		t= 6.579, p=.000	t= 7.210,p=.000
Possession of an individual disaster plan	Yes No	78.26±10.63 68.96±10.06	66.09±9.39 59.19±9.88
Test and p		t= 7.896, p=.000	t= 6.117,p=.000
Knowledge of environmental disaster Risks	Yes No	73.21±10.45 64.12±9.65	62.47±9.70 55.17±9.87
Test and p		t= 7.446, p=.000	t= 6.306, p=.000
Perception of environmental preparedness for disasters	Yes No	74.52±11.01 71.02±10.92	63.00±12.62 60.74±10.05
Test and p		MU= 3397.50, p=.188	MU= 3633.00, p=.383
Perception of environmental awareness regarding disasters	Yes No	75.96±12.81 70.84±10.72	66.20±7.43 60.45±10.26
Test and p		MU= 4281.50, p=.041	MU= 3479.50, p=.001

Multiple linear regression analysis was conducted to identify the variables influencing the DAS and the IDRA. Dummy variables were used for categorical data. The multiple regression analysis for DAS (F= 24.961, p = 0.05) and IDRA (F= 24.329, p< 0.05) revealed that possessing a personal disaster plan, having received disaster training, knowledge of the city's disaster risk, and knowledge of environmental disaster risk were significant predictors of disaster attitudes (p< .005), explaining 23.6% of the variance in the scale scores (Adj. R^2 = .236). For IDRA, the predictors included male gender, possession of a disaster plan, having received disaster training, and knowledge of the city's disaster risk (p< .005), explaining 19.3% of the variance in the scale scores (Adj. R^2 = .193). The statistical results indicate that the findings of the study are reliable (DW = 1.968) (Table 4).

Nazan GÜRARSLAN BAŞ, Gülnaz KARATAY & Nilgün SÖYLEMEZ

Disaster Attitude And Individual Disaster Resilience Among University Students And Influencing Factors: A Disaster Zone Sample

Table 4. Multiple Analysis of Variation in DAS and IDRA

Variables	Variation in DAS						
	β	t	p	F	Sig.	Adj. R2	DW
Fixed (Constant)	60.668	22.923	.000	24.961	.000	.236	1.968
Possession of a personal disaster plan	6.488	5.473	.000				
Having received disaster training	3.759	3.643	.000				
Knowledge of the city's disaster risk	5.859	4.797	.000				
Knowledge of environmental disaster risk	2.919	2.190	.060				
	Variation in IDRA						
Variables	β	t	p	F	Sig.	Adj. R2	DW
Fixed (Constant)	53.691	53.463	.000	24.329	.000	.193	1.890
Male gender	2.379	2.087	.037				
Possession of a disaster plan	4.109	3.644	.000				
Having received disaster training	4.594	4.669	.000				
Knowledge of disaster risks	4.724	4.078	.000				

4. DISCUSSION

Disasters are multifaceted calamities that impact society and necessitate preparation and preventive measures. The attitudes of communities toward disasters, their level of preparedness, and resilience play a key role in mitigating the effects of such events. In this context, the disaster attitudes and resilience of young people, who constitute a significant portion of the population, become crucial. In this study, it was found that more than four-fifths of university students and/or their relatives had previously been exposed to a disaster. Approximately one-fifth (16.1%) had lost a relative due to a disaster, fewer than half had received disaster training, less than a quarter had a personal disaster plan, and three-quarters had knowledge about environmental disaster risks. However, more than 90% of students did not consider their surroundings to be adequately prepared for disasters and did not view their environment as disaster-conscious. Previous studies on disaster preparedness have reported that the proportion of individuals who had previously been exposed to a disaster ranged from 39% (Türkan & Kılıç, 2017) to 50.8% (Akil & Inal Onal, 2022) and the percentage of students who had lost a relative due to a disaster was around 6% (Türkan & Kılıç, 2017). Other studies reported that approximately one-fifth of individuals had a personal disaster plan (Akil & Inal Onal, 2022; Zhang et al., 2021). The rates of receiving disaster training have been reported as 12.89% (Zhang et al., 2021), 40% (Ekşi, 2020) and 51.3% (Türkan & Kılıç, 2017). Some studies have indicated that the perception of environmental disaster risk ranged from 47.3% (AlQahtany & Abubakar, 2020) to 90% (Ekşi, 2020). These findings suggest that university students 'experiences with disasters, disaster preparedness, and receipt of disaster training are similar to those reported in other studies.

In this study, the disaster attitudes of university students can be assessed as moderate. Students who had previously experienced a disaster, suffered disaster-related losses, received disaster training, had a personal disaster plan, were aware of the disaster risks in their environment, and perceived their surroundings as disaster-conscious exhibited higher levels of disaster attitudes. Other studies on disaster attitudes among university students have shown that the disaster attitude levels among students in certain health-related fields are either insufficient (Alrazeeni, 2015) or moderate (Mansour et al., 2020). Research also indicates that knowledge, positive attitudes, and preparedness levels regarding disaster management and preparation are moderate (Alshakka et al., 2022). Gender, age, attitudes, and knowledge are considered important predictors in the disaster preparedness process (Li et al., 2022). However, one study observed that while cognitive disaster attitudes are similar between men and women, women tend to have higher emotional disaster attitudes, while men have higher behavioral disaster attitudes (Türkan et al., 2019). Studies suggest that disaster attitudes and awareness are higher among students who have received disaster training (Hung et al., 2021; Mansour et al., 2020). Another study highlighted that 89% of participants emphasized the importance of preparedness and training in the disaster management process in terms of attitude and awareness (Mansour et al., 2020). Additionally, having a disaster plan before an event, identifying risky situations beforehand, and conducting simulation exercises within the community are considered important (Mansour et al., 2020). The research demonstrates that students 'attitudes towards disasters play a crucial role in disaster planning and response processes (Mideksa et al., 2019).

Resilience is defined as a crucial concept for overcoming long-term effects following disasters, particularly within the youth population. It reflects an individual's ability to cope with stress. This coping mechanism plays a significant role in the resilience process for young survivors during a disaster (Laksmita et al., 2020). In this study, the average score for the IDRA was 60.85±10.19, indicating a moderate level of resilience. Other studies have reported university students' average resilience scores as 65.38±13.19 (Laksmita et al., 2020), 69.7 (Hamdan-mansour & Hamdan-Mansour, 2015), and 69.7±15.8 (Akil & Inal Onal, 2022). These findings suggest that university students generally exhibit moderate levels of disaster resilience.In this study, students who were male, had experienced a disaster, received disaster training, had a personal disaster plan, were aware of disaster risks in their environment, and perceived their surroundings as disaster-conscious showed higher levels of disaster resilience. It has been reported that there is a positive linear relationship between resilience and psychological preparedness for disasters, with higher levels of resilience associated with increased psychological preparedness (Setyo Palupi & Noor Rahman Himawan, 2020). Another study found that adolescents with high levels of stress had lower resilience levels and higher mental health issues (Fan et al., 2016). This study, along with others (Park & Yang, 2017), demonstrates a positive correlation between disaster attitudes and individual disaster resilience.

5. CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, a significant portion of university students has experienced disasters and possesses a moderate level of disaster attitude and resilience. As the level of disaster attitude increases, so does the resilience of university students. Factors such as having a personal disaster plan, receiving disaster training, and being aware of the disaster risk in their city are significant predictors of disaster attitude and resilience. University students represent a dynamic segment of the global population. Given their age and educational level, they are well-positioned to access information, implement it, and serve as role models within the community. Their disaster attitudes and resilience play a crucial role in disaster management. Disaster

management is a process that requires effective handling, and the preparation phase is particularly critical for mitigating potential damage and anticipating risks. Therefore, involving university students in disaster management processes from this point onward will be crucial for developing positive attitudes towards disasters and strengthening disaster resilience. In this context, it is recommended to implement disaster education programs at regular intervals, covering pre-disaster, during-disaster, and post-disaster risks and interventions for university students.

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