IJETS@R

(ISSN: 2587-0238)

Işık Mercan, S. (2022). The effect of disaster training on attitudes towards disaster in cognitive, emotional and behavioral dimensions, *International Journal of Education Technology and Scientific Researches, 7(19), 1925-1937.*

DOI: http://dx.doi.org/10.35826/ijetsar.510

Article Type (Makale Türü): Research Article

THE EFFECT OF DISASTER TRAINING ON ATTITUDES TOWARDS DISASTER IN COGNITIVE, EMOTIONAL AND BEHAVIORAL DIMENSIONS

Sibel IŞIK MERCAN

Asst. Prof. Dr., Kutahya Dumlupinar University, Faculty of Education, Kutahya, Turkey, sibel.mercan@dpu.edu.tr

ORCID: 0000-0001-5174-5692

Received: 26.05.2022 *Accepted: 17.08.2022* *Published: 02.09.2022*

ABSTRACT

The purpose of the present study was to examine the effects of the disaster training provided to university students in the scope of the Contemporary World Problems (CWPs) Course on cognitive, affective and behavioral attitudes towards disasters. The study, which had a quasi-experimental design, was conducted with university students aged 18 and over who volunteered to participate in the study. A total of 111 (experimental group) and 114 (control group) students who were not trained on the CWPs course were included in the study. The efficiency of the training was measured with the Disaster Attitude Scale. In the cognitive dimension, the mean score of the experimental group was found to be higher at a statistically significant level than the control group (p=0.000). In the affective dimension, the mean score of the experimental group was significantly lower than that of the control group (p=0.006). In the behavioral dimension, the mean score of the experimental group was significantly higher than the control group (p=0.000). It was also found that disaster training provided to university students in the scope of the CWPs Course affects the cognitive and behavioral attitudes of the students towards disasters positively, and reduces the level of anxiety in the affective dimension.

Keywords: Attitudes, contemporary world problems, disaster training, university student.

INTRODUCTION

The number and effects of disasters in the world increase from year to year and millions of people become victims of disasters every year. According to the "The Human Cost of Disasters: An Overview of the Past 20 Years 2000-2019" Report of the United Nations Office for Disaster Risk Reduction [UNDRR], 4.212 natural disasters took approximately 1.19 million lives worldwide, and over one billion people were directly affected by disasters, with an economic loss of 1.63 trillion USD (UNDRR, 2020). Turkey ranks fourth in terms of 77 great earthquakes that occurred as of 1900 although it makes up only 0.05% of the world's total area, and is located in a geographical area of the world that can be described as high risk (Disaster and Emergency Management Presidency [AFAD], 2018). Many other disasters along with earthquakes threaten Turkey seriously, especially in recent years, with the effects of global warming being felt intensely (Akay, 2019). To prevent or minimize the devastating effects of possible disasters, disaster training aimed at increasing awareness are inevitable (Mızrak, 2018; AFAD, 2022).

Considering the past, it was seen that the 1980s were the years when then-present disaster management policies were questioned all over the world, and important steps were taken globally until the beginning of the 2000s. Despite these, the UNDRR Report published in 2021 highlights the low investment in disaster prevention and reduction of disaster risk for the world's most vulnerable countries and states that major disasters have doubled in the last 20 years, giving a global-scale alarm (UNDRR, 2021). Although the organization conducts independent and coordinated activities in the fight against disasters, the failure to achieve the desired outputs shows the awareness of disaster as an issue that must be considered more (Özesen-Çolak, 2016; Yılmaz, 2016). When the studies in this field and relevant institutions, which Turkey also supports, focused on crisis management, helping people, and wound-healing, after the 7.8 magnitude Marmara Earthquake in 1999, it evolved into risk management. One of the most important reflections of this was the increasing importance provided to disaster readiness and ensuring that the consequences of possible disasters are less costly in all respects (Yılmaz, 2016). Disaster training is among the most important things to be performed to be prepared for disasters and to minimize the effects of a possible disaster. Many projects were implemented on disaster training, and are continuing to be implemented. However, one of the important points here is that training is performed by the state, obligatory, in a certain program, and in a sustainable way (Development Plan, 2014; İnal et al., 2018). When the studies conducted on disaster training in Turkey were evaluated, it was seen that the training activities were performed by official institutions, non-governmental organizations, and various private organizations (Özesen Çolak, 2016; Yılmaz, 2016). With the announcement of 2021 as the Disaster Training Year in Turkey, cooperation was made with these organizations to raise awareness of disaster in the society, reduce the risk of disaster, and create a behavioral change in taking precautions. Also, with AFAD's "Turkey Ready for Disaster Project", training activities continue for all segments of the society, starting from the individual, to be prepared for the first 72 hours of disasters (AFAD, 2022a).

It is seen that the spatial distribution of the disaster training research is not usual because the types and order of importance of disasters all over the world vary from country to country. It was found that disaster training is

mostly concentrated in Europe, equally distributed in Asia and Africa, and scattered in North America.[5,12] The importance of disaster training has been emphasized in the international literature on dealing with natural disasters or awareness on disasters, especially in recent years.[12-16]

Importance of the Study

In recent years, when the training on disaster awareness is performed as optional online training in all universities in Turkey, it is included in the higher training program as a compulsory course in various departments. However, some of the knowledge, skills, and behaviors to be acquired regarding disaster awareness are included in the Contemporary World Problems (CWPs) course at universities (Özgen, 2012; Özey, 2001; Yazıcı & Arıbaş, 2011; Sayhan & Çamurcu, 2013). It was found that the studies conducted in the scope of CWPs or environmental problems in the sub-context are not adequate to develop disaster awareness (Uymaz, 2021; Tekin & Dikmenli, 2021; Turan et al., 2018, Bozyiğit & Kaya, 2017; Coşkun, 2011; Aydın, 2010; Cin, 2010). However, the more information individuals have about disasters, the more they will show the desired attitudes and behaviors. For this reason, it is extremely important to inform students on disasters and their effects that concern society at the national and international level, raise awareness, and encourage students to be involved actively in the solution of related problems (Uymaz, 2021). The ultimate target of disaster training is to help students understand the relations between natural disasters, the environment, and people, to ensure that they are aware of disaster prevention and reduction, and to make the right decisions to protect their safety when faced with disasters (Zhang & Wang, 2022). On the other hand, disaster training must also ensure that the lifestyles that students transform into behaviors are compatible with the sustainable environment concept. For this reason, disaster training must not only be knowledge training but also behavior training. The outputs of the experimental studies to be performed in this regard will make significant contributions to the literature.

METHOD

Study Aim and Hypothesis

In the present study, the purpose was to examine the effects of disaster training provided to university students in the scope of the CWPs course on cognitive, affective, and behavioral attitudes towards disasters. The hypothesis of the study is as follows: H0: The training provided in the scope of the CWPs course does not affect the Cognitive, Affective, and Behavioral attitudes of students regarding the disaster. H1: The training provided in the scope of the CWPs course affects the cognitive, emotional, and behavioral aspects of students regarding disaster attitudes.

Study Design

The present study, which was planned in the semi-experimental design, was conducted in Kütahya in the 2021-2022 Academic Year. The population of the study consisted of 2nd-year students studying at Kütahya

Dumlupınar University in different faculties, aged 18 and over, who volunteered to participate in the study. The minimum sample size was calculated as 210 (experimental group: 105, control group: 105) with α=0.05 and 95% power for the difference between the mean of two independent groups according to 0.50 effect size in the G*Power 3.1 Program (Faul et al., 2007).

To measure the efficiency of disaster training, all students were asked the question "Have you ever received disaster training?" and those who answered "No" were included in the study. Among these, 111 students who enrolled in the CWPs course in the relevant academic year were included in the experimental group, and 114 students who did not take this course were included in the control group. The Disaster Attitude Scale, which can measure attitudes in Cognitive, Affective, and Behavioral dimensions, was applied to the control group without any training (Türkan & Kılıç, 2017). The scale was applied to the control group before the training of the experimental group to prevent the students from contacting in terms of peer education. The disaster training to be provided to the experimental group was planned in the scope of the common elective course CWPs. The content of the training was determined under the headings of what disasters are and their formation processes, readiness, response, and improvement activities related to disasters. E-books, videos, and presentations that were prepared by AFAD (2021, 2021a) and Istanbul University (2016) were used as training materials. Training was provided interactively and online for three weeks, 2 hours a week. The efficiency of the training was measured with the Disaster Attitude Scale 4 weeks after the training to obtain the outputs related to the permanence of the knowledge obtained by the students and its transformation into behavior (Türkan & Kılıç, 2017).

Data Collection

The data were collected online through social media accounts by creating a Google Form. As the first question of the questionnaire, the participants were asked to confirm that they participated in the study voluntarily, and it was ensured that the students who voluntarily accepted to participate in the study answered the questionnaire. The questionnaire consisted of the Descriptive Form and Disaster Attitude Scale that were prepared by the researcher.

Descriptive Form

The form consisted of three questions that were developed by the researcher, including age, gender, and whether they had received disaster training before.

Disaster Attitude Scale

Disaster Attitude Scale (DAS) was developed by Türkan & Kılıç (2017) to determine the attitudes towards disasters in cognitive, affective, and behavioral dimensions. The scale had a 5-point likert style and consisted of 23 items with three sub-dimensions; Cognitive, Affective, and Behavioral. The Cronbach's Alpha Coefficients of the sub-dimensions were reported as 0.86, 0.89, and 0.85, respectively (Türkan & Kılıç, 2017). The Cronbach's

Alpha Coefficients for Cognitive, Affective, and Behavioral sub-dimensions were calculated as 0.89, 0.91, and 0.83, respectively in the study.

Study Analysis

Descriptive tests, number (n), percentage (%), mean, and Standard Deviation (SD) were used in the analysis. The normality of the distribution was tested with the Kolmogorov-Smirnov Test, and the reliability of the data was evaluated with the Cronbach's Alpha Coefficient. The Mann-Whitney U-test was used to compare the means of two independent groups in the data that showed nonparametric distribution. The data were analyzed in the SPSS 22.0 statistical package program, and the significance level was taken as $p<0.05$.

FINDINGS

The mean age of the Control Group, which consisted of 60.2% women, was found to be 20.85 ± 1.85 years, and the mean age of the Experimental Group, which consisted of 58.9% women, was 21.06 ± 1.52. No statistically significant differences were detected between the groups in terms of age and gender distribution ($p>0.05$) (not shown in the table).

Table1. The Descriptive Statistics of Participants' Attitudes Towards Disaster in Cognitive Dimension

Items	Experimental group (n=111)				Control group (n=114)				p-value
	None/ Mild %	Moderate %	A lot /Fully %	Mean ± SD	None/ Mild %	Moderate %	A lot /Fully %	Mean ± SD	
I have basic knowledge about disasters.	26.4	55.9	71.4	**3.13 ± 0.72**	73.6	44.1	28.6	**2.54 ± 0.81**	**0.000**
I know how to reduce and/or eliminate the risk factors regarding disasters.	27.9	52.1	77.5	**3.14 ± 0.76**	72.1	47.9	22.5	**2.47 ± 0.88**	**0.000**
I have adequate knowledge about family disaster plans.	31.1	59.5	76.3	**2.95 ± 0.94**	68.9	40.5	23.7	**2.17 ± 1.02**	**0.000**
I have sufficient knowledge about the disaster safety of the house/dormitory where I live.	38.8	61.2	69.0	**2.64 ± 1.00**	61.2	38.8	31.0	**2.10 ± 1.00**	**0.000**
I know what the non-structural risk factors are in the house/dormitory where I live.	42.4	49.4	87.0	**2.59 ± 1.07**	57.6	50.6	13.0	**2.16 ± 0.82**	**0.003**
I know what I must do to reduce the non-structural risk factors in my house/dormitory.	31.9	61.3	81.3	**2.87 ± 0.94**	68.1	38.8	18.8	**2.21 ± 0.78**	**0.000**
I know how to behave in crowded places (i.e. shopping malls, schools, public transportation vehicles, social activity areas, etc.) during a disaster.	29.4	52.1	59.0	**3.41 ± 0.91**	70.6	47.9	41.0	**2.95 ± 1.14**	**0.002**

The descriptive statistics of the participants' attitudes towards disaster in the cognitive dimension are provided in Table 1. For each item in the cognitive dimension, the mean item scores in the Experimental Group were found to be higher at a statistically significant level than in the Control Group ($p<0.01$).

Table 2. The Descriptive Statistics of the Participants' Attitudes Towards Disaster in Affective Dimension

Items	Experimental group (n=111)				Control group (n=114)				p-value
	None/ Mild %	Mode rate %	A lot /Fully %	Mean ± SD	None/ Mild %	Mode rate %	A lot /Fully %	Mean ± SD	
The possibility of disaster in the city where I live frightens me.	44.7	49.3	51.4	3.43 ± 1.11	55.3	50.7	48.6	3.45 ± 1.13	0.938
The possibility of disaster in the country where I live frightens me.	56.5	70.7	42.9	**3.68 ± 0.99**	43.5	29.3	57.1	**4.09 ± 1.09**	**0.000**
The fact that necessary precautions are not taken for a possible disaster makes me uneasy.	41.2	68.3	45.5	**3.88 ± 0.90**	58.8	31.7	54.5	**4.19 ± 1.04**	**0.002**
Being in crowded places (i.e. shopping malls, schools, public transportation vehicles, social activity areas, etc.) during a disaster worries me.	41.0	66.1	44.6	3.50 ± 0.97	59.0	33.9	55.4	3.70 ± 1.24	0.050
I am concerned that I can be reached in a short time during a possible disaster.	53.3	56.5	45.1	**3.53 ± 0.93**	46.7	43.5	54.9	**3.76 ± 1.07**	**0.041**
The possibility of Search & Rescue teams not being able to reach me in a short time after a possible disaster worries me.	52.4	58.2	45.6	**3.68 ± 0.90**	47.6	41.8	54.4	**3.93 ± 1.01**	**0.023**
The thought of not getting enough support (i.e. material, psychological, shelter) after a possible disaster worries me.	50.0	61.2	45.3	3.67 ± 0.99	50.0	38.8	54.7	3.85 ± 1.11	0.062
I am afraid of having communication problems with my close circle (i.e. family, friends, etc.) after a possible disaster.	50.0	50.0	49.0	3.68 ± 1.16	50.0	50.0	51.0	3.68 ± 1.10	0.936
It is worrying for me that social awareness in our country only increases in disaster situations.	16.7	65.2	47.3	4.01 ± 0.82	83.3	34.8	52.7	4.04 ± 1.11	0.227

The descriptive statistics of the participants' attitudes towards disaster in the affective dimension are given in Table 2. In the affective dimension, the mean score of the Experimental Group in the statements "The possibility of being exposed to a disaster in the country where I live in frightens me", "Not taking the necessary precautions before a possible disaster makes me uneasy", "I am worried that I can be reached in a short time during a possible disaster", and "I am worried that Search & Rescue teams may not be able to reach me in a short time after a possible disaster" was found to be lower at a statistically significant level than the mean score of the Control Group ($p<0.05$).

Table 3. The Descriptive Statistics of Participants' Attitudes Towards Disaster in the Behavioral Dimension

Items	Experimental group (n=111)				Control group (n=114)				p-value
	None/ Mild %	Moderate %	A lot /Fully %	Mean ± SD	None/ Mild %	Moderate %	A lot /Fully %	Mean ± SD	
I think I am prepared for a possible disaster.	34.1	65.9	82.4	**2.66 ± 0.99**	65.9	34.1	17.6	**1.93 ± 0.85**	0.000
I back up my personal information and documents for a possible disaster.	42.6	60.0	80.0	**2.23 ± 1.18**	57.4	40.0	20.0	**1.88 ± 0.90**	0.030
We have prepared our family disaster plan against any possible disaster.	41.7	70.0	100.0	**2.02 ± 1.12**	58.3	30.0	0.0	**1.43 ± 0.68**	0.000
I have a disaster and emergency kit.	45.0	76.9	52.6	**1.82 ± 1.22**	55.0	23.1	47.4	**1.45 ± 1.00**	0.005
Individual precautions e.g. a fire detector and a fire extinguisher have been taken in the house where I live with my family.	42.0	89.3	62.5	**1.96 ± 1.17**	58.0	10.7	37.5	**1.57 ± 0.88**	0.013
I have the necessary knowledge and training to protect myself during a disaster.	35.9	56.5	63.4	**2.92 ± 1.01**	64.1	43.5	36.6	**2.38 ± 1.07**	0.000
In emergencies, I provide the necessary communication correctly.	36.0	53.0	69.2	**2.98 ± 0.92**	64.0	47.0	30.8	**2.50 ± 0.84**	0.000

The descriptive statistics of the participants' attitudes towards disaster in the behavioral dimension are given in Table 3. For each item in the cognitive dimension, it was determined that the mean item scores in the Experimental Group were higher at a statistically significant level than the Control Group ($p<0.05$).

Table 4. The Comparison of Disaster Attitude Scale Sub-Dimension Mean Scores

Sub-dimensions	Experimental group (n=111)			Control group (n=114)			z value	p-value
	Mean ± SD	Mean rank	Min.-Max.	Mean ± SD	Mean rank	Min.-Max.		
Cognitive Dimension	20.73 ± 4.75	138.50	10-33	16.60 ± 4.83	88.17	8-26	-5.814	0.000
Affective Dimension	33.06 ± 6.37	100.96	16-45	34.69 ± 7.74	124.72	11-45	-2.743	0.006
Behavioral Dimension	16.59 ± 5.64	134.56	7-35	13.13 ± 3.73	92.01	7-22	-4.915	0.000

The mean scores in the comparison of the sub-dimension of the participants on the Disaster Attitude Scale are given in Table 4. In the cognitive dimension, the mean score of the Experimental Group (20.73 ± 4.75) was found to be higher at a statistically significant level than the Control Group (16.60 ± 4.83) (p=0.000). In the affective dimension, the mean score of the Experimental Group (33.06 ± 6.37) was significantly lower than that of the Control Group (34.69 ± 7.74) (p=0.006). In the behavioral dimension, the mean score of the Experimental Group (16.59 ± 5.64) was found to be higher at a statistically significant level than the Control Group (13.13 ± 3.73) (p=0.000).

CONCLUSION and DISCUSSION

The effects of disaster training provided to university students in the scope of CWPs course on attitudes towards disasters were investigated in this quasi-experimental study. It was found that training affected students' attitudes towards disasters in cognitive and behavioral dimensions positively, and reduced the level of anxiety in the affective dimension.

When the effects of disaster training provided to students on their cognitive attitudes towards disasters were examined, it was found that the mean scores of the experimental group students for each item were higher at a statistically significant level than the Control Group for each item when compared to the control group students. It is an expected result that the training provided will yield positive results in favor of the experimental group in the cognitive dimension. This result was supported by the article "The Effects of Disaster Training on Public Readiness and Mitigation for Earthquakes: A Cross-Country Comparison Between Fukui, Japan and the San Francisco Bay Area, California, USA" by Tanaka (2005). Similarly, some studies conducted in Turkey also support the results obtained in this study (Şahan & Dinç, 2021; Erdoğ, 2010; Özgüven, 2006). Also, in the study conducted by Gerdan and Kırıkkaya (2016) with the title "University Students Assess the Achievement of the E-Learning Outcomes of Disasters and Mitigation and Disaster Management Courses", it was determined that the learning outcomes of the 2 courses related to disaster training, which was performed with e-learning, were above the expected levels.

When the sub-items of the participants' affective attitudes towards disasters such as "The possibility of being exposed to a disaster in the country I live in frighten me", "Not taking the necessary precautions before a possible disaster makes me uneasy", "I am concerned that I can be reached in a short time during a possible disaster", the sub-items of the experiment were examined, the mean score of the experimental group was found to be lower at a statistically significant level than the mean score of the control group. As the level of knowledge increases, the fact that they see themselves as more competent in crisis management can be shown as the underlying reason for this outcome. Because Chou et al. (2015) reported that disaster prevention literacy affects attitudes towards disaster prevention positively. In their study, Tkachuck et al. (2018) investigated the readiness levels of university students for natural disasters and revealed that perceived and actual readiness were close to each other, but not completely equivalent. According to this result, the reflections of the affective attitude dimension of the disaster training must be investigated in more detail.

When the findings on the sub-items of the participants' attitudes towards disaster in the behavioral dimension were examined, it was found that the mean item scores of the experimental group were higher at a statistically significant level than in the control group. When the fact that the items in the behavioral dimension were skill-based was considered, it can be argued that disaster awareness studies achieved their purpose thanks to the transformation of knowledge into behavior, as stated by Zhang and Wang (2022). Similarly, according to the results of a study conducted by Baytiyeh and Öcal (2016), which investigated the disaster awareness of students in Turkey, it was found that Turkish students had more skills in disaster awareness than Lebanese students and the outcomes of disaster training were more positive for Turkish students. Syahril et al. (2021) reported a positive relationship between high school students' knowledge and readiness for disasters. An opposite finding was reported in the study of Türkan and Kılıç (2017). Similarly, in a study conducted at Midwestern University, Lovekamp et al. (2011) reported that although students were aware of risks, they took little action on the need to be better prepared for a disaster. When the study that was conducted by Collins (2017) was examined in behavioral terms, it was found that African-Americans were not personally prepared enough for a disaster. In a study, Turan et al. (2018) examined the disaster and emergency readiness studies and their effectiveness in a higher education institution in Turkey and found that the duties and responsibilities of all individuals in the institution in disaster and emergencies, as well as the level of readiness and knowledge, were not at the desired level.

The strongest side of the present study was that it was one of the rare studies in disaster training, which was planned as a quasi-experimental design. Although approximately one-third of the Control Group, who had never received any training in this respect, had basic knowledge, and the disaster training provided to university students in the scope of the CWPs course was more effective was another important strength.

It was shown that disaster training provided to university students in the scope of Today's World Problems Course affects students' cognitive and behavioral attitudes towards disasters positively, and reduced the level of anxiety in the affective dimension.

RECOMMENDATIONS

In general, increasing disaster readiness is important for university students coming from different regions in terms of being aware of local and global disasters. To achieve this, it is suggested that appropriate training approaches promoted through training institutions must be made compulsory. Also, it is considered that disaster training to be provided in schools according to the levels of the relevant age groups, starting from basic training, must be provided with serious importance. In addition, more efforts should be made in the disaster preparation phase to combat disasters, awareness activities on disaster risk and harm reduction should be increased, and they should be disseminated to the whole society through public service announcements.

ETHICAL TEXT

In this article, journal writing rules, publication principles, research and publication ethics rules, journal ethics rules have been followed. Responsibility for any violations that may arise regarding the article belongs to the authors. To conduct the study, the ethics committee approval was obtained on 16.03.2022 with the number 2022/02 from the Scientific Research an Publication Ethics Committee of Kütahya Dumlupınar University. Permission was obtained from the authors for the use of scales.

The permission of the ethics committee, the permission of the relevant institution and the permission of the authors for the use of the scale were obtained to conduct the study.

Author(s) Contribution Rate: In this study, the contribution rate of the author was 100%.

REFERENCES

Akay, A. (2019). Effects of Disasters Caused by Climate Change. Climate Change Training Modules Series 15. Supporting Joint Efforts in the Field of Climate Change (iklimİN). Retrieved from https://www.iklimin.org/moduller/afetmodulu.pdf

Aydın, F. (2010). The perceptions of primary education eighth grade students towards "earthquake": A phenomenographic analysis. International Periodical for the Languages, Literature and Historyof Turkish or Turkic, 5(3), 801-817. http://dx.doi.org/10.7827/TurkishStudies.1574

Baytiyeh, H., & Öcal, A. (2016). High school students' perceptions of earthquake disaster: A comparative study of Lebanon and Turkey. International Journal of Disaster Risk Reduction, 18, 56-63. https://doi.org/10.1016/j.ijdrr.2016.06.004

Bhuiya, M. M. R. & Shao, W. (2022). Perceptions of earthquake risks and knowledge about earthquake response among movement challenged persons in Dhaka city of Bangladesh. International Journal of Disaster Risk Reduction, 70, 102743. https://doi.org/10.1016/j.ijdrr.2021.102743

Bozyiğit, R. & Kaya, B. (2017). Determining the Cognitive Structures of Geography Pre-Service Teachers on Some Concepts Related to the Natural Disasters. Marmara Geographical Review, 35, 55-67. https://doi.org/10.14781/mcd.291146

Chou, J. S., Yang, K. H. & Ren, T. C. (2015). Ex-post evaluation of preparedness education in disaster prevention, mitigation and response. International Journal of Disaster Risk Reduction, 12, 188-201. https://doi.org/10.1016/j.ijdrr.2015.01.002

Cin, M. (2010). Prospective Classroom Teachers' Misconceptions about Natural Hazards. Marmara Geographical Review, 22, 70-81. Retrieved from https://dergipark.org.tr/en/pub/marucog/issue/469/3790

Collins, R. N. (2017). Disaster Preparedness Perception in a Predominantly African-American Community of a United States East Coast City [Unpublished doctoral dissertation]. Capella University.

Coşkun, Ş. (2011). Perception of disaster training: A practise study for the purpose of measure to perception of disaster training which is given to primary school students [Unpublished master's thesis]. Sakarya University Institute of Social Sciences.

Development Plan (2014). Efficiency in Disaster Management. Republic of Turkey Tenth Development Plan, 2014-2018, Special Expertise Commission Report.

Disaster and Emergency Management Presidency (AFAD) (2018). Disaster Management and Natural Disaster Statistics in Turkey. Retrieved from https://www.afad.gov.tr/kurumlar/afad.gov.tr/35429/xfiles/turkiye_de_afetler.pdf

Disaster and Emergency Management Presidency (AFAD) (2021). Disaster Awareness Training. Retrieved from https://www.youtube.com/watch?v=IPkQdDeW6Xg

Disaster and Emergency Management Presidency (AFAD) (2021a). "Disaster Awareness Education" Training Presentation. Retrieved from https://tekirdag.afad.gov.tr/kurumlar/tekirdag.afad/Egitim/Egitim-Sunu/Egitim-Sunumu-WEB.pptx

Disaster and Emergency Management Presidency (AFAD) (2022). Disasters. Retrieved from https://www.afad.gov.tr/afadem/insan-kaynakli-afetler

Disaster and Emergency Management Presidency (AFAD) (2022a). Disaster Prepared Turkey. Retrieved from https://www.afad.gov.tr/afete-hazir-turkiye

Erdoğ, S.T. (2010). The effects of active learning methods in teaching the subjects about the unit ?The Place We Live in? in social sciences in the fourth grade of the primary school [Unpublished master's thesis]. Gazi University Institute of Educational Sciences.

Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39(2), 175-191. https://doi.org/10.3758/bf03193146

Gerdan, S. & Kırıkkaya, E. B. (2016). University Students Assess the Achievement of the E-Learning Outcomes of Disasters and Mitigation and Disaster Management Courses. AJIT-e: Online Academic Journal of Information Technology, 7(25), 93-102. https://doi.org/10.5824/1309-1581.2016.4.005.x

Istanbul University (2016). Disaster Geography. Istanbul University Open and Distance Education Faculty Geography Undergraduate Program, Istanbul. Retrieved from http://auzefkitap.istanbul.edu.tr/kitap/cografya_lisans_ao/afetler_cografyasi.pdf

İnal E., Kaya E., Altıntaş, K. H. (2018). Evaluating the Formal Education in Terms of Sufficiency of Disaster Education in Turkey. Journal of Kazım Karabekir Education Faculty, 37, 114 - 127. Retrieved from https://dergipark.org.tr/en/pub/ataunikkefd/issue/41724/463823

Lovekamp, W. E. & McMahon, S. K. (2011). I have a snickers bar ın the trunk of my car: Student narratives of disaster risk, fear, preparedness, and reflections on union university. International Journal of Mass Emergencies and Disasters, 29(2), 132-148. Retrieved from http://www.ijmed.org/articles/562/download/

Marasco, S., Kammouh, O. & Cimellaro, G. P. (2022). Disaster resilience quantification of communities: A risk-based approach. International Journal of Disaster Risk Reduction, 70, 102778. https://doi.org/10.1016/j.ijdrr.2021.102778

Mızrak, S. (2018). Education, Disaster Education and Community Disaster Resilience. MSKU Journal of Education, 5(1), 56-67. https://doi.org/10.21666/muefd.321970

Özesen- Çolak, S. (2016). Non-Governmental Organizations in Disasters. Istanbul University Open and Distance Education Faculty Emergency and Disaster Management Undergraduate Completion Program. Retrieved from http://auzefkitap.istanbul.edu.tr/kitap/acilyardimveafetyonetimi_ao/astk.pdf

Özey, R. (2001). Contemporary World Problems. Active Publishing.

Özgüven, B. (2006). The effects of the basic hazard awareness education given to the elementary school students on the level of their knowledge [Unpublished master's thesis]. Dokuz Eylul University Institute of Health Sciences.

Özgen, N. (2012). Teacher candidates' attitudes towards environmental problems: The example of Turkey. Kastamonu Education Journal, 20(2), 403-422. https://dergipark.org.tr/en/pub/kefdergi/issue/48697/619535

Sayhan, H. & Çamurcu, H. (2013). Contemporary World Problems. Lisans Publishing.

Syahril, L., Doctor, S., Syamsul, B., Hari, U. D. & Eges, T. (2021). Relationship of knowledge and attitudes with disaster preparedness in high school students. Perspectives of Science and Education, 5(3), 261-272. https://doi.org/10.32744/pse.2021.3.18

Şahan, C., & Dinç, A. (2021). Investigation of the effect of disaster training in the disaster training centers on secondary school students. Mehmet Akif Ersoy University Journal of Education Faculty, (58), 478-500. https://doi.org/10.21764/maeuefd.804077

Tanaka, K. (2005). The impact of disaster education on public preparation and mitigation for earthquakes: a cross-country comparison between Fukui, Japan and the San Francisco Bay Area, California, USA. Applied Geography, 25(3), 201-225. https://doi.org/10.1016/j.apgeog.2005.07.001

Tekin, Ö. & Dikmenli Y. (2021). Analysis of Pre-Service Classroom Teachers' Disaster Awareness Perception and Earthquake Knowledge Level. Journal of Ahi Evran University Institute of Social Sciences, 7(1), 258-271. https://doi.org/10.31592/aeusbed.811043

Tkachuck, M. A., Schulenberg, S. E. & Lair, E. C. (2018). Natural disaster preparedness in college students: Implications for institutions of higher learning. Journal of American College Health, 66(4), 269-279. https://doi.org/10.1080/07448481.2018.1431897

Turan, M., Doğan, G., Bulut, Y., Öztürk, G. & Şahinöz, S. (2018). Higher Education Society Preparedness to Emergencies and Disasters Activities and Responsibilities in Gümüşhane University. Gümüşhane University Journal Of Health Sciences, 7(1), 1-11. Retrieved from https://dergipark.org.tr/en/pub/gumussagbil/issue/36260/373462

Türkan, A.H. & Kılıç, İ. (2017). A Description on Cognitive, Affective and Behavioral Dimensions of Attitudes of University Students towards Disasters. Journal of the Human and Social Sciences Researches, 6(1), 114-127. Retrieved from http://www.itobiad.com/tr/pub/issue/27443/290145

United Nations Office for Disaster Risk Reduction (UNDRR) (2020). The human cost of disasters: an overview of the last 20 years 2000-2019. UN Office for Disaster Risk Reduction, Geneva, Switzerland. Retrieved from https://www.undrr.org/media/48008/download

United Nations Office for Disaster Risk Reduction (UNDRR) (2021). International Cooperation in Disaster Risk Reduction: Target F. UN Office for Disaster Risk Reduction, Geneva, Switzerland. Retrieved from https://www.undrr.org/publication/international-cooperation-disaster-risk-reduction-target-f

Uymaz, M. (2021). The Investigation of Prospective Social Studies 'Teacher's Perceptions about the Today's World Problems. Gazi Journal of Educational Science, 7(1), 59-79. https://dx.doi.org/110.30855/gjes.2021.07.01.004

Yazıcı, H. & Arıbaş, K. (2011). Contemporary World Problems. Ankara: Pegem Academy.

Yılmaz, İ. (2016). National and International Disaster Legislation. Istanbul University Open and Distance Education Faculty Emergency and Disaster Management Undergraduate Completion Program. Retrieved from http://auzefkitap.istanbul.edu.tr/kitap/acilyardimveafetyonetimi_ao/uvuam.pdf

Zhang, M. & Wang, J. (2022). Trend Analysis of Global Disaster Education Research Based on Scientific Knowledge Graphs. Sustainability, 14(3), 1492. https://doi.org/10.3390/su14031492