

Research Article / Araştırma Makalesi

Relationship Between Disaster Literacy and the Factors Affecting it and the State-Trait Anxiety in the Elderly of West Turkey

Türkiye'nin Batısında Yaşlılarda Afet Okuryazarlığı ve Bunu Etkileyen Faktörler ile Durumluk-Süreklilik Kaygısı Arasındaki İlişki

Halide Yeşim Karakaş, Mustafa Tözün

İzmir Katip Çelebi Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, İzmir, Türkiye

Özet Bu çalışmanın amacı afetlerde savunmasız bir grup olan yaşlı bireylerin kaygı düzeylerinin ve bazı sosyodemografik özelliklerinin afet okuryazarlıkları üzerine etkisini ölçmektir. Bu çalışma kesitsel tipte bir araştırmadır. Çalışmanın evreni İzmir ili Buca ilçesinde yer alan İzmir Büyükşehir Belediyesi Sosyal Yaşam Kampüsü'nde 7 Mart – 2 Mayıs 2022 tarihleri arasında konaklayan huzurevi sakinleridir. Çalışma grubu olarak 210 kişiye ulaşıldı. Çalışmada oluşturulan anket formunda katılımcıların bazı sosyodemografik özellikleri ve afetlerle ilgili bilgileri sorgulandı, Durumluk-Süreklilik Kaygı Ölçeği, Afet Okuryazarlığı Ölçeği (AFOYÖ) kullanıldı. Toplam AFOYÖ puanının kategorilere ayrılmasıyla Multinomial Lojistik Regresyon Analizi modeli kuruldu. Ortalama AFOYÖ puanı 27,9±9,41 ile yetersiz düzeyde bulundu. Multinomial regresyon analiz sonuçlarına göre; sürekli kaygı durumu yüksekliği (OR: 1,058 (95% GA: 1,010-1,111)) "yetersiz" afet okuryazarlık düzeyi için risk faktörleri bulundu (p<0,05). Afet okuryazarlığı afetlerin risklerinden ve tehlikelerinden korunmada çok önemli bir kavramdır. Başarılı bir afet yönetimi sağlamak için toplumdaki tüm kırılganlıklar tespit edilerek okuryazarlık düzeyi artırılmalıdır.

Anahtar Kelimeler:Afetler, Afet tıbbı, Sağlık eğitimi

Abstract : The aim of this study is to measure the effect of anxiety levels and some sociodemographic characteristics of elderly individuals, who are a vulnerable group in disasters, on their disaster literacy. This study is a cross-sectional type study. March May 7 – 2, 2022 residents of the nursing home, located in İzmir Metropolitan Municipality Social Life Campus in Buca district of İzmir province, are the Decedents of the study. As a working group, 210 people were reached. In the questionnaire form created in the study, some sociodemographic characteristics of the participants and their knowledge about disasters were questioned, the State-Continuous Anxiety Scale, Disaster Literacy Scale (DLS) were used. Multinomial Logistic Regression Analysis model was established with categorized of DLS's total score. The mean score of the DLS was insufficient with a score of 27.9±9.41. According to the results of multinomial regression analysis, high trait anxiety state (OR: 1,058 (95% CI: 1,010-1,111)) were found to be risk factors for "insufficient" disaster literacy level (p<0.05). Disaster literacy is a very important concept in protecting against the risks and dangers of disasters. In order to achieve a successful disaster management, all vulnerabilities in the society should be identified and the level of literacy should be increased.

Keywords: Disasters, Disaster medicine, Health education

ORCID ID of the authors: [HYK, 0000-0001-8773-6683](https://orcid.org/0000-0001-8773-6683), [MT, 0000-0002-7557-432X](https://orcid.org/0000-0002-7557-432X)

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Correspondence: Mustafa TÖZÜN– İzmir Katip Çelebi Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, İzmir, Türkiye
e-mail: mtzn76@gmail.com

1. Introduction

Disasters have emerged as one of the primary challenges to achieving sustainable development worldwide, in the last years (1). In addition to the loss of life and property, disasters also result in significant economic damage every year. The majority of losses are caused by human unconsciousness, carelessness, and lack of control (2,3). Preparedness plays a critical role in reducing disaster damage in countries prone to disasters. While there are various approaches to disaster management, one common feature is that they are all geared toward prevention. The primary and most crucial component of the preventive approach is preparation and training (4,5). Sufficient knowledge and awareness can help prevent many deaths, injuries, and harmful outcomes during disasters. A society that is well-prepared for disasters is expected to experience minimal damage from such events. One of the targets of disaster literacy (DL) is to improve people's quality of life throughout their lives (6,7).

As individuals age, physiological, psychological, cognitive, and social changes occur. The cognitive and functional abilities of the person decrease, while the incidence of chronic diseases increases (8). Anxiety in the elderly may be related to changing social, mental, and physical conditions. The death of a spouse, chronic medical conditions, and physical limitations are common issues that the elderly face. As they age, they are more likely to experience health problems and loneliness, which can contribute to increased anxiety levels. Other risk factors for late-age anxiety disorders include experiencing new traumatic life events, having a history of psychiatric illness such as depression, a history of early-onset anxiety disorder, and being a woman. These factors can increase the likelihood of anxiety disorders developing in the elderly population (9). In a study from Turkey, the current prevalence for all types of anxiety disorder was found to be 17.1% overall and the lifetime prevalence was found to be 18.6% (10).

The target of high-level DL among the general population is to increase the preparedness capacity of society and reduce its vulnerability

to implement response plans for disaster risks and hazards in communities at risk (6).

The purpose of the study was to measure the effect of anxiety levels and some sociodemographic characteristics of elderly individuals, who are a vulnerable group in disasters, on their DL, in West Turkey.

2. Material and Method

2.1. Type of Research

This is cross-sectional. The relational survey model, one of the quantitative research methods, was preferred for the study. In this model, the relationships between concepts and the variables that are thought to affect the concepts are examined.

2.2 Place and Period of the Study

The study was carried out in Izmir Metropolitan Municipality Social Life Campus Nursing Home located in Buca district of Izmir province in Turkey between 7 March – 2 May 2022.

2.3.Sampling

The target population was the residents in the nursing home located in the Izmir Metropolitan Municipality Social Life Campus. For this study, using the G*Power 3.1.9.7 program, 5% error and 80% power were determined in both directions. Due to the weak correlation expected between State-Trait Anxiety Inventory (STAI) score and the Disaster Literacy Scale (DLS) score, the correlation coefficient was accepted as 0.2 (11), and the sample size was calculated as 193 people. During the date of the study, the number of elderly people staying in nursing homes was 353. Persons over 60 years of age, their mother tongue Turkish and volunteers to participate in the study were included. Those with cognitive impairment to the extent that they could not answer the questions and those doing professional work related to disasters were excluded from the study. As the study group, 210 people were reached.

2.4. Data Collection Tools

2.4.1. Demographic Data Collection Form

In this questionnaire form, 13 questions are open-ended and divided into groups while analyzing. Age and length of stay in a nursing home were considered continuous variables and were not grouped. Participants evaluated the income level question as “High”, “Medium” and “Low” according to their perceptions.

2.4.2. State-Trait Anxiety Inventory (STAI)

The anxiety levels of the elderly were determined using Spielberger's State-Trait Anxiety Inventory (STAI-I, STAI-II), which includes a 20-item State Anxiety Inventory (STAI-I), and a 20-item Trait Anxiety Inventory (STAI-II) (12). It was translated into Turkish by Oner & Le Compte (13) and its validity and reliability study was conducted. After the total weights of the direct and reversed statements are found separately, the total weight score of the reverse statements is subtracted from the total weight

score obtained for the direct statements. For both (STAI-I, and STAI-II), the highest score is 80, and the lowest score is 20. The higher the total anxiety score, the higher the anxiety level of the person filling the inventory (14).

2.4.3. Disaster Literacy Scale (DLS):

The Disaster Literacy Scale (DLS) was used to measure the DL of the elderly. DLS is a self-report scale developed to assess DL (15). The conceptual framework of the 61-item scale consists of 16 areas. Each item is scored and graded as 1 point (High difficult), 2 points (Difficult), 3 points (Undecided), 4 points (Easy), and 5 points (High easy). There is no reverse item in the scale.

Zero indicates the lowest DLS and 50 points indicates the highest DLS.

DLS Scale score categories are as follows: 0-29 Insufficient; 30-35 Limited; 36-41 Sufficient; 42-50 Excellent disaster health literacy.

DLS sub-dimension items conceptual framework was presented in Table 1.

Table 1. Disaster Literacy Scale (DLS) sub-dimension items conceptual framework.

Disaster-related information processes					
Sub-dimensions about disaster management	Accessing information	Understanding information	Evaluating information	Apply or use knowledge	
Harm reduction/Prevention	Ability to access information on hazard prevention and risk reduction	Ability to understand and derive meaning from hazard prevention and risk reduction	Ability to evaluate and interpret hazard prevention and risk reduction	Ability to make informed decisions about hazard prevention or risk reduction	
Preparation	Ability to access information on actions to limit damage and loss in disasters	Ability to understand and derive meaning from actions that limit damage and loss in disasters	Ability to evaluate and interpret actions that limit damage and loss in disasters	Ability to make decisions about actions that limit damage and loss in disasters	
Intervention	Ability to access information to respond quickly and effectively to disasters	Ability to understand and derive meaning from activities to respond quickly and effectively to disasters in a timely manner	Ability to evaluate and interpret activities for a timely and effective response	Ability to make the decision to respond to disasters in a timely and effective manner	

			disasters	
Improvement/Rehabilitation	Ability to access knowledge of reconstruction applications	Ability to understand healing information and derive meaning	Ability to evaluate and interpret improvement practices	Ability to make decisions to use knowledge of improvement practices

2.5. Method of Application of Data Collection Tools

After obtaining the consent of those who accepted to participate in the study, the questionnaire forms prepared in advance were collected by the researchers by face-to-face interview method. There were 116 questions in the survey, and an average of 2 hours of interview was conducted per participant.

2.6. Analysis

The analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 25.0 software. "Enter" method was used as significant coefficients were reached between dependent and independent variables in multiple linear regression analysis. The reason why multiple linear regression analysis is preferred is that the scores in the sub-dimensions of DLS are continuous data. Multinomial Logistic Regression Analysis model was established with categorized of DLS's total score. Variables with $p < 0.10$ in bivariate analysis were included in the model. The goodness of fit was evaluated with the Hosmer-Lemeshow test. The statistical significance level was accepted as $p < 0.05$.

2.7. Permissions

This study was approved by the Izmir Katip Çelebi University Non-Interventional Clinical Research Ethics Committee (Date: 24.02.2022; No: 93).

This study was produced from the Public Health specialization thesis.

3. Results

3.1. Descriptive Findings:

The study group comprised 210 elderly individuals, aged between 60 to 97 years with a mean age of 75.46 ± 6.91 years. The average duration of their stay in the nursing home was 4.39 ± 4.43 years, ranging from 1 month to 30 years. Among the participants, 49% (n: 103) were women, 83.3% (n: 175) were single, and 71.9% (n: 151) were primary school and lower.

The study revealed that the majority of participants, 63.3% (n: 133), had a moderate income level. Additionally, 29,0% (n: 61) housewives, 16,6% (n: 35) officers, and 60.0% (n: 126) of the participants had at least one physical illness, while 13.3% (n: 28) reported having a mental illness.

Out of the total study group, 60.9% (n: 128) had a history of experiencing disasters, while 15,6% (20 in 128 individuals) had suffered the loss of life and property due to disasters. Moreover, 13.8% (n: 29) of the participants had received disaster training, and only one participant (n: 1; 0.5%) had membership in civil society related to disasters.

3.2. The mean scores obtained from the scales and Percentages of DL levels

The mean STAI-I was 34.16 ± 9.98 , and the mean STAI-II was 46.28 ± 8.70 .

The mean DLS total score was 27.29 ± 9.41 . According to this mean score, the DL of the participants was found to be insufficient.

Of the participants, 128 (61.0%) were inadequate, 43 (20.5%) were limited, 28 (13.3%) were sufficient, and 11 (5.2%) had an excellent level of DL.

3.3. Analyzes Revealing the Relationships with the Variables

Bivariate analyses were performed for the multiple linear regression model but were not shown in a table.

The results of the multiple linear regression model created with the variables that likely affect the scores of DLS and its sub-dimensions were presented in Table 2.

Table 2. The results of the multiple linear regression model created with the variables that likely affect the scores of Disaster Literacy Scale (DLS) and its sub-dimensions.

The dependent variable	Independent variables	B	Standard Error	B	p	95% Confidence Interval	
						Lower bound	Upper bound
DLS score	Gender (ref:female)	2,781	1,259	0,149	0,028	0,299	5,264
	Educational level (ref:primary school and under)	2,976	1,700	0,144	0,082	-0,376	6,329
	Profession in the past (ref:officer)	-2,059	2,010	-0,084	0,307	6,024	1,906
	Trait anxiety score	-0,270	0,072	-0,252	<0,01	-0,412	-0,128
Adjusted R ² :0,141 F:9,139		p:<0,001	Durbin-Watson:1,225				
Harm reduction score	Gender (ref:female)	0,149	0,103	0,097	0,149	-0,054	0,353
	Educational level (ref:primary school and under)	0,337	0,143	0,198	0,019	0,055	0,619
	Profession in the past (ref:officer)	-0,186	0,164	-0,092	0,258	-0,510	0,138
	Trait anxiety score	-0,022	0,006	-0,244	<0,01	-0,033	-0,010
Adjusted R ² :0,165 F:8,725		p:<0,001	Durbin-Watson:1,440				
Preparation score	Getting education about disasters (ref:no)	0,094	0,076	0,084	0,220	-0,057	0,244
	Profession in the past (ref:officer)	-0,212	0,146	-0,099	0,150	-0,500	0,077
	Trait anxiety score	-0,022	0,006	-0,236	<0,001	-0,035	-0,009
	Loss of life and						

	property (ref:no)	-0,216	0,094	-0,157	0,022	-0,402	-0,031
	Adjusted R ² :0,087 F:7,273 p:<0,001 Durbin-Watson:1,623						
	Profession in the past (ref:officer)	-0,086	0,174	-0,042	0,623	-0,428	0,257
Intervention score	Trait anxiety score	-0,020	0,006	-0,229	<0,001	-0,033	-0,008
	Educational level (ref:primary school and under)	0,206	0,145	0,120	0,157	-0,080	0,493
	Adjusted R ² :0,069 F:5,903 p:0,001 Durbin-Watson:1,786						
	Profession in the past (ref:officer)	-0,149	0,198	-0,063	0,452	-0,540	0,241
	Trait anxiety score	-0,022	0,007	-0,217	0,002	-0,036	-0,008
Improvement score	Educational level (ref:primary school and under)	0,264	0,167	0,133	0,116	-0,065	0,593
	Gender (ref:female)	0,268	0,124	0,149	0,032	0,023	0,513
	Marital status(ref:single)	0,089	0,162	0,037	0,582	-0,230	0,409
	Adjusted R ² :0,103 F:5,541 p:<0,001 Durbin-Watson:1,531						

According to multiple linear regression analysis results, the DLS total score and the improvement sub-dimension score were higher in males than females ($p<0.05$). The harm reduction score was higher in those with higher education levels ($p<0.05$). The preparation score was higher in those who suffered the loss of life and property in disasters ($p<0.05$). A high trait anxiety score was associated with a low total score of DLS, and low scores of DLS in all sub-dimensions (Harm reduction, Preparation, Intervention, and Improvement) ($p<0.05$ for each).

According to the results of multinomial regression analysis, high trait anxiety state (OR: 1,058 (95% CI: 1,010-1,111)) were found to be risk factors for "insufficient" disaster literacy level ($p<0.05$ for each).

4. Discussion

Given their vulnerability, the elderly constitute a disadvantaged group that requires special attention in emergency and disaster preparation, response, and post-disaster aid mechanisms (16).

The mean DLS total score in the elderly who participated in this study indicates an insufficient level. In the study, 61% of the participants have inadequate DL and 20.5% have a limited level of DL. The fact that our study group consisted of only the elderly may explain the lower level of DL. Even in developed countries, there is a shortage of DL. A study was conducted on a chemical

incident in the Netherlands using readily available Twitter data. At the end of the study, it was determined that there was a lack of communication between the authorities and the public and the emergency response of the authorities, as well as an insufficient level of DL of the people (17, 18).

Our study result could not reveal the relationship between age and DL. The reason for this may be that the study was conducted on individuals over the age of 60 who received insufficient education in terms of disasters in previous years. However, a study from Hong Kong also reported that individuals aged 65 and over are more likely to perceive Hong Kong as disaster-prone (19).

The majority of the participants in the study were single. Being settled in a nursing home after the death of the spouses can explain this situation. In our study, no relationship was found between the marital status of the participants and their DL. Considering the possible loss of family members in the event of disasters, it was thought that married people would be interested in DL. There is a study that provides information on this subject (20). In a study from Hong Kong, it was reported that married people have lower disaster awareness. In the study, which reported a result contrary to our view, the target group was not the elderly, but the general population aged 15 and over (19).

In our study, the rate of elderly who defined their low-income level was 16.2%. In our study, no relationship was found between the income levels of the participants and their DL. In explaining this result, it can be argued that the income perceptions of the participants are quite good. Studies indicate that, among other factors, the high-level of family income is also effective in individual disaster preparedness, but not at the level of DL (21).

In our study, the frequency of physical illness among the participants was 60%, and the frequency of mental illness was 13.3%. No relationship was found between the physical and mental illness status of the participants and their DL. With the increase in diseases in the elderly population, the interest in health

issues increases. For this reason, the relationship between chronic disease and DL was examined. There is no study in the literature that provides information on this subject. However, it is important to consider chronic patients as a vulnerable group in post-disaster aid planning. After the hurricanes in Florida, the importance of considering chronic diseases in disaster planning. Florida has provided special needs shelters to meet the needs of people with chronic illnesses and disabilities in times of disaster (22).

The frequency of elderly people participating in our study receiving training on disasters was 13.8%. This frequency should be considered quite low. The fact that disaster education became routine in our country resulted from the state policy changing the disaster management system after the 1999 Marmara earthquakes. For this reason, it is an expected finding that the elderly population's level of education about disasters is low. According to our study results, whether or not to participate in disaster education does not have a significant effect on individuals' DL scores. However, disaster education increases disaster awareness (23). In 2002, a community disaster education program focusing on earthquakes, floods, and landslides was implemented in Cankiri, Turkey. The results showed that the participants of the training program had more disaster expectations, anxiety and loss prediction, and preparedness behaviors (24). Our study's result can be explained by the fact that elderly people benefit less from the education they receive due to a decrease in their cognitive abilities (25). In addition, the presentation method and content of the training on DL should also be questioned, and improvements should be made. Some study results on receiving disaster education are presented as follows: A study was conducted on 102 household heads in Nigeria, where 47.9% of respondents were aware of post-disaster information. Television or radio (38.5%) and government agencies (% 26,6) are the main sources of information (19). DL was also low in a study conducted with 7200 university students in China. The majority of these students reported that they received their disaster information from television and the Internet (26). A study was

conducted in a group of 286 academic and administrative staff in Yalova, Turkey. The General Disaster Preparedness Belief score of the participants who had received any emergency/disaster training was reported to be higher than the participants who did not have any emergency/disaster training (27). Although these studies are not conducted on the elderly population like ours, they provide evidence of the inadequacy of disaster education worldwide.

According to the multiple regression analysis results, the discussion of associated variables with DL is as follows:

In this study, the total DL score and improvement subscale score for the female gender were found to be low. The degree to which women are affected by disasters is affected by various factors such as the environment they live in, the education they receive, family structure, and the level of knowledge of the immediate environment, and these individuals are among the groups most affected by disasters due to gender inequality. In recent years, the possible effects of policies and measures developed for disaster reduction on gender roles have been investigated. The important role of gender equality in disaster reduction is emphasized (28). The biological theory explains this inequality by emphasizing the innate characteristics of male and female individuals, and by focusing on the physical characteristics of the main reasons for the difference between these two genders. Accordingly, women are considered as needy and passive individuals due to the physical superiority of men, and their participation in life is restricted due to this gender role (29). Throughout the world, it is seen that housework is generally the responsibility of women. Women with high workloads start to compromise their nutritional and health needs when poverty manifests itself. According to the social dominance theory, women around the world continue their lives under the dominance of men (30). All these reasons hinder the development of women and reduce their literacy levels. However, there are also studies reporting that gender has no effect on disaster literacy. In a study of 124 people from Nepal, it was reported that there was no

statistically significant difference based on gender in people's disaster knowledge, disaster preparedness, disaster awareness, and disaster risk perception (31). The results of a literature review evaluating DL in middle-aged women showed that disaster health literacy is critical for older women, as these women may experience physical and psychological problems triggered by developmental crises such as menopause and situational crises such as disasters (32). Disaster literacy can enable them to increase their resilience and reduce disaster risk among elderly and middle-aged women.

In our study, higher education level was found to be positively associated with harm reduction, which is one of the sub-dimensions of DL. Chan et al. (19) reported that those with post-secondary education or higher had higher perceived disaster awareness of Hong Kong than those with lower levels of education. Depending on the education level, the individual better establishes the cause-effect relationship between the events and raises the level of awareness to avoid possible dangers. In addition, an increase in participation in disaster training and seminars is expected depending on the increase in the level of education. The education level of the individual may be an incentive for the information received in the training to be more permanent and applicable. Increasing awareness with training can motivate people to turn to different training and disaster literacy can increase even more (33). Tuladhar (31) states that increasing education levels is one of the factors that increase knowledge and awareness about disasters. In the study conducted by Demirci (33), in Turkey, in the province of Izmir, it is seen that the level of disaster knowledge and awareness increases as the education level increases. Additionally, in a study conducted in Indonesia, university students reported a high level of disaster literacy, especially in relation to earthquakes (34). As expected, disaster literacy is high in groups that have received training on disasters. For example, in a study conducted on 442 geography teacher candidates from Turkey, the level of disaster literacy was found to be high (35). It is seen that efforts related to natural disasters in all education

programs in Turkey are insufficient. For this reason, a natural disaster literacy course curriculum has been proposed for high schools. In Sozcu's study, the general objectives of the natural disaster literacy course curriculum were determined, and this program is not yet implemented in high schools (36).

In this study, having a disaster history was not found to be associated with disaster literacy. However, the level of the DL preparation subscale was high in those with a history of disaster and loss of life and property. It can be thought that the damage caused by traumatic memories, such as disasters, to the executive functions of the brain, also has an effect on literacy. Disasters can be traumatic memories for individuals. The individual's reactions to the traumatic memory differ. Avoidance behavior such as forgetting the traumatic moment and staying away from reminder objects, places, and people, which are seen as traumatic stress symptoms, may also be in question for our study group. The person may reduce their knowledge of the disaster in order to avoid negative memories and disturbing thoughts caused by the disaster, and this may have led to a decrease in disaster literacy (37). In addition to the classical avoidance response, it can be thought that the damage caused by traumatic memories, such as disaster to the executive functions of the brain, also has an effect on literacy. The Eye Movement Desensitization and Reprocessing (EMDR) approach argues that traumatic memories and experiences are not properly processed in the brain and cause functional problems. As the brain does not process the traumatic memory well enough, gaps and problems occur, and therefore it cannot get away from the worrying effect of the traumatic memory (38). This negatively affects the daily functionality and well-being of the individual. In a study group of academics and administrative staff in Turkey, it was reported that those who experienced a disaster had a higher General Disaster Preparedness Belief score (27). The remarkable aspect of our study result is that not only experiencing a disaster but also experiencing loss of life and property as a result of this disaster has an impact on disaster

literacy. It can be said that the losses experienced increased the interest in future disasters.

In this study, although a correlation was found between state anxiety and DL, state anxiety was eliminated in the results of multiple regression analysis. Relationships were found between trait anxiety and DL and all sub-dimensions of DL ($p < 0.05$ for each). A high score for trait anxiety is associated with low disaster literacy. State anxiety shows how people feel in a certain situation, while trait anxiety shows how they feel in general (13). . A study showing that trait anxiety affects disaster preparedness was reported from India. Trait anxiety was found to reduce flood and heatwave preparedness in 300 people from flood-prone and heatwave-affected areas in the city of Orissa, India (39).

In a study conducted on 291 college students in Korea, it was reported that anxiety and depression were affected by the awareness of natural and social disasters, perception of disaster response strategies, and knowledge about disasters (40). Experiencing disasters can create state anxiety. However, experiencing constant anxiety can create an urge to run away with the fear that disasters will occur.

Anxiety disorders can affect various areas of functioning, including thinking, perception, and learning, as well as motor and visceral effects. They can cause confusion and distortion of perception, particularly in relation to events and people in the outside world. This can lead to the individual experiencing a distorted and exaggerated sense of threat or danger. The distortions caused by anxiety disorders can have a negative impact on learning by reducing concentration, weakening memory and recall, and making it difficult to connect events. Selective perception is one of the cognitive effects of emotions, which means that individuals tend to perceive information that is consistent with their emotional state and filter out information that contradicts it. This can further exacerbate the distortions in perception and make it challenging to learn effectively. Depending on the person's fear

and anxiety, he perceives certain aspects of events or phenomena and may ignore other parts. Therefore, depending on selective perception errors, a false and erroneous perception emerges with fear (41-45).

According to the results of multinomial regression analysis, high trait anxiety was found to be associated with inadequate disaster literacy level. It is established in studies that trait anxiety and anxiety disorders reduce cognitive functions and cause difficulty in performing vital functions together with avoidance behaviors (46,47). For these reasons, it can be said that our study provides evidence of the negative impact of trait anxiety on disaster literacy.

4.1. Limitations and Strengths:

Since our study is in a cross-sectional design, the possibility of establishing a cause-effect relationship between disaster literacy, which is

the independent variable, and dependent variables is limited. Our study was conducted in a single center, and the generalizability of the findings is limited. The collection of data based on self-report in researcher observation may have caused bias.

One of the strengths of the study is that it is one of the first studies conducted with the elderly on DL, a concept that has just begun to be researched in our country.

5. Conclusion

At the end of this study, the DL level of the elderly study group was found to be low. It was seen that the male gender, high education level, loss of life and property in disasters, and low level of trait anxiety are associated with a high level of DL.

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Ethics

Ethics Committee Approval: This study was approved by the Izmir Katip Celebi University Non-Interventional Clinical Research Ethics Committee (Date: 24.02.2022; No: 93)

Informed Consent: The authors declared that it was not considered necessary to get consent from the patients because the study was a retrospective data analysis.

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