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Research Article

Assessment of Disaster Preparedness Level of Medical Students of a University, Turkey

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ABSTRACT

Introduction: In disaster-prone countries, preparedness is a very important factor in reducing the damages of disaster. The aim of this study is to determine the disaster preparedness knowledge level of a university's medical students and to evaluate the relationships between possible related factors and disaster preparedness knowledge.

Material and Method: This study is a cross-sectional study. The subject of research is measuring the level of disaster preparedness knowledge. The working period in which the online survey is applied is December 1-December 31, 2020. It was aimed to participate that attend the first and second grades of the medical faculty studying in the main campus of a University in Turkey. In order to compare the knowledge level of disaster preparedness among medical students, it was planned to include other faculty students as a control group. In the study, 75 medical students and 20 students from other faculties participated. A high score indicates good disaster preparedness. Chi-square, Mann Whitney U, and Kruskal Wallis were used in the statistical analyses.

Results: The median value for disaster preparedness level score for all participants was 51.0 (min: 23.0; max: 63.0). Disaster preparedness knowledge level median score (54.0 [29.0-63.0]) was higher in women than men (48.5 [23.0-62.0]) ($p<0.05$). The median score of disaster preparedness knowledge level (53.0 [23.0-63.0]) of the second and upper grade was higher than the median score (49.0 [29.0-62.0]) of the first-year students ($p<0.05$). The median score of disaster preparedness knowledge level (55.0 [34.0-62.0]) was higher than the others (49.0 [23.0-63.0]) in those living in the city where their family resides ($p<0.05$).

Conclusion: It can be said that the level of disaster preparedness for all participants is good. It is recommended to conduct a similar study in a larger study group.

Keywords: disaster preparedness, university, student

INTRODUCTION

Causing physical, economic, and social losses for people; the consequences of natural, technological, and human-induced events that affect communities by stopping or interrupting normal life and human activities and that the affected community cannot overcome by using its own means and resources are called disasters (Kadioglu and Uncu, 2018). Turkey has always been a country with various natural disaster hazards due to its tectonic formation, geological structure, topography, and meteorological features. In Turkey where earthquakes are the most important disaster, 92% of the population, 95% of the residential areas, and a significant part of the industrial facilities are located in these earthquake zones (Sengun and Kucuksen, 2019). In addition to the increasing loss of life and property every year, serious economic losses are also observed. The vast majority of the losses are caused by unconsciousness, imprudence, and lack of control. However, humanity strives to make these disasters less deadly and to reduce the consequential damages with the measures taken.

Stronger buildings and emergency plans for earthquake zones; early warning systems for disasters such as tsunami, typhoons, floods; early response systems for forest fires, and many other similar measures have reduced the mortality rate of disasters and subsequent damages (Kouadio et al., 2012; Samah et al., 2019).

In disaster-prone countries, preparedness is a very important factor in reducing the damages of disaster. There are various disaster management approaches. However, one of

the common points of these approaches is that they are preventive.

The first and most important of the basic components of the preventive approach are preparation and training. It is very important to have information about taking precautions before a disaster, during, and after a disaster (Gerdan, 2014). Many deaths, injuries, and harmful consequences can be eliminated by having sufficient knowledge and the awareness provided by it (Chacko et al., 2019; Samah et al., 2019). It is thought that public employees, who have been informed about disasters or who have been trained in various experiments such as exercises, may be more useful in disaster prevention and post-disaster work (Karanci et al., 2005).

For example, physicians who are familiar with crisis protocols; Patient notification during disaster response, and immediate discharge of patients with less severe acute illnesses can play an important role in many issues, such as first aid during a crisis (Chacko et al., 2019). It is predicted that a society that is prepared for disasters should have a low level of damage from disasters (Dokmeci and Merinc, 2018).

The aim of this study is to determine the disaster preparedness knowledge level of a university's medical students and to evaluate the relationships between possible related factors and disaster preparedness knowledge.

MATERIAL AND METHOD

This study is a cross-sectional study. The subject of research is measuring the level of disaster preparedness knowledge. The study was designed as an online survey application. The working period in which the *online* survey is applied is December 1-December 31, 2020.

It was aimed to attend the first and second years of the medical faculty studying in the *main campus of Izmir Katip Celebi University*. In order to compare the knowledge level of disaster preparedness among medical students, it was planned to include other faculty students as a control group. A questionnaire was also sent to the students of the Faculty of Economics and Administrative Sciences, Faculty of Engineering and Architecture, and Faculty of Health Sciences.

Izmir Katip Celebi University, Faculty of Medicine, which was aimed to participate in the study, had 423 first and second-year students in the 2020-2021 academic year. 75 of them (17.7%) responded to the survey. There were 1,483 students in the Faculty of Health Sciences, 1,749 in the Faculty of Economics and Administrative Sciences, and 2,877 students in the Faculty of Engineering and Architecture. Of these, 20 students who answered the questionnaire were included in the study as a control group of medical faculty students.

In this study, a questionnaire form prepared by the researchers based on the literature (1-15) was used. The 9 questions of the questionnaire contain some sociodemographic questions. The 32 propositions in the tenth question are 5-point Likert-type propositions prepared to measure disaster preparedness knowledge level. Of these; 2nd, 3rd, 5th, 10th, 14th, 16th, and 32nd statements are reverse propositions. They were scored absolutely correct (2 points) and correct (1 point) in the true propositions. And in the reverse propositions, they were scored as absolutely false (2 points) and incorrect (1 point). A knowledge score between 0 and 64 was obtained for the thirty-two statements. The scale has no cut-off point. A high score indicates good disaster preparedness.

The dependent variable of the study is the level of disaster preparedness knowledge. Independent variables are faculty of education, age, gender, perceived family income level (poor-medium-high), education in the city where the family is located, residence status in the education and training period, taking part in earthquake/fire drills before, damage from any previous natural disaster to see and to be a relative who suffered from any natural disaster before.

Written permission was obtained from the Dean's Office of the relevant faculties of the University, where the study was conducted. Explanatory information about the study was provided to the participants in official letters written to the Dean's offices and at the beginning of the online survey. Ethical approval numbered *2021-20.23 (Date: 30.11.2021)* was obtained from *Izmir Katip Celebi University Social Research Ethics Committee* in order to carry out this study.

Data entry and analysis were made in SPSS 25.0 statistics program. The normal distribution of the data of numerical variables was evaluated by the Shapiro Wilk normality test and Q-Q graphics. It was observed that the normal distribution was not observed. Frequency values are presented as n (%) and the median value (min-max) for means.

Chi-square analysis was used to compare the data. Relationships between disaster preparedness level score and categorical independent variables were evaluated using *Mann Whitney U* test for paired groups and *Kruskal Wallis* analysis for groups 3 and above. A value of $p \leq 0.05$ was accepted for statistical significance.

RESULTS

In the study, 75 (78.9%) medical and 20 (21.1%) other faculties (Economic and Administrative Sciences, Engineering-Architecture and Health Sciences) students participated.

Looking at the distribution by age groups; While there were no students in the 17-18 age group in other faculties, the frequency of the age group 21 and over was higher in the other faculties than in the medical faculty students ($p<0.05$). The frequency of students studying in the first year was higher in the medical faculty than in the other faculties ($p<0.05$). No difference was found between medical faculties and other faculties in terms of other sociodemographic characteristics ($p>0.05$ for each).

The distribution of Faculty of Medicine and other faculty students according to some sociodemographic characteristics is presented in **Table 1**.

For all participants, *"Have you been participated in an earthquake/fire drill before?"* is asked and the number of students who gave "yes" was 84 (88.4%). There was no difference between the medical faculty and other faculty students in terms of answering "yes" to this question ($p>0.05$).

Table 1. The distribution of Faculty of Medicine and other faculty students according to some sociodemographic characteristics

Characteristics (N. 95)	Other faculties (N: 20) n (%)*	Medical Faculty (N: 75) n (%)*	Statistical analysis: X^2; p
Age group (year)			
17-18	0 (0.0)	30 (100.0)	Fisher; **<0.001**
19-20	9 (18.8)	39 (81.3)	
21 and upper	11 (64.7)	6 (35.3)	
Sex			
Male	10 (29.4)	24 (70.6)	2.226; 0.136
Female	10 (16.4)	51 (83.6)	
Grade			
First	4 (7.3)	51 (92.7)	Fisher; **<0.001**
Second and upper	16 (40.0)	23 (60.0)	
Family income perception			
Low	4 (40.0)	6 (60.0)	Fisher; 0.079
Middle	15 (22.4)	52 (77.6)	
High	1 (5.6)	17 (94.4)	
Is he/she studying in the city where the family is located?			
Yes	10 (24.4)	31 (75.6)	0.483; 0.487
No	10 (18.5)	44 (81.5)	
Residence status			
Separated from the family, alone	2 (10.5)	17 (89.5)	3.121; 0.208
With family	8 (18.6)	35 (81.4)	
Stays with friends or in a dormitory	10 (30.3)	23 (69.7)	

Note. *Percentage of rows

Table 2. The distribution of answers given by Faculty of Medicine and other faculty students to some questions about disasters

Questions (N: 95)	Other faculties (N: 20) n (%)*	Medical Faculty (N: 75) n (%)*	Statistical analysis: X^2; p
Have you been participated in an earthquake/fire drill before?			
Yes	16 (19.0)	68 (81.0)	Fisher; 0.236
No	4 (36.4)	7 (63.6)	
Have you been harmed by any natural disaster before?			
Yes	3 (30.0)	7 (70.0)	Fisher; 0.434
No	17 (20.0)	68 (80.0)	
Have you had any relatives who suffered from any natural disaster before?			
Yes	8 (26.7)	22 (73.3)	0.483; 0.487
No	12 (18.5)	53 (81.5)	

Note. *Percentage of rows

"Have you been harmed by any natural disaster before?" is asked and 10 (10.5%) of all students answered "yes" to the question. There was no difference between the medical faculty and other faculty students in terms of answering "yes" to this question (p>0.05).

"Have you had any relatives who suffered from any natural disaster before?" is asked and 30 (31.6%) of all students answered "yes" to the question. There was no difference between medical faculty and other faculty students in terms of answering "yes" to this question (p>0.05).

The distribution of the answers given by the Faculty of Medicine and other faculty students to some questions about disasters is presented in **Table 2**.

The median value for Disaster Preparedness Level score for all participants was 51.0 (min: 23.0; max: 63.0).

Disaster preparedness level score between the Faculty of Medicine and other faculties was 51.0 (min: 29.0; max: 62.0) and 51.0 (min: 23.0; max: 63.0), respectively, and no significant difference was found between the two groups (Mann Whitney U: 759.5; p: 0.931).

For all participants of the study, no relationship was found between the possible related variables (age group, family income perception, residence characteristics, participation in disaster drills, being a relative who suffered from a natural disaster, depending on damage from a natural disaster) and Disaster preparedness knowledge level score (each for one p>0.05).

Disaster preparedness knowledge level median score (54.0 [29.0-63.0]) was higher in women than men (48.5 [23.0-62.0]) (p<0.05).

The median score of disaster preparedness knowledge level (53.0 [23.0-63.0]) of the second and upper grade was higher than the median score (49.0 [29.0-62.0]) of the first-year students (p<0.05).

The median score of disaster preparedness knowledge level (55.0 [34.0-62.0]) was higher than the others (49.0 [23.0-63.0]) in those living in the city where their family resides (p <0.05).

The distribution of the median scores of the disaster preparedness level by the various variables for all students participating in the study is presented in **Table 3**.

The number and percentages of students who gave correct answers by giving absolutely correct and correct (absolutely false-wrong for reverse questions) answers in a total of 32 propositions used in measuring the level of disaster preparedness are presented in **Table 4**.

Table 3. The distribution of the median scores of the disaster preparedness level by the various variables

Variables	Disaster preparedness knowledge level median score	Min-max values	Statistical analysis: Mann Whitney U or Kruskal Wallis; p
Age group (year)			
17-18	49.5	29.0-62.0	KW: 0.357; p: 0.837
19-20	51.0	31.0-63.0	
21 and upper	52.0	23.0-62.0	
Sex			
Male	48.5	23.0-62.0	U: 1296.0; **p: 0.044**
Female	54.0	29.0-63.0	
Grade			
First	49.0	29.0-62.0	U: 1397.5; p: **0.025**
Second and upper	53.0	23.0-63.0	
Family income perception			
Low	49.5	31.0-59.0	KW: 2.855; p: 0.240
Middle	51.0	23.0-63.0	
High	54.0	41.0-62.0	
Is he/she studying in the city where the family is located?			
Yes	55.0	34.0-62.0	U: 795.5; p: **0.019**
No	49.0	23.0-63.0	
Residence status			
Separated from the family, alone	47.0	31.0-62.0	KW: 2.522 ; p: 0.283
With family	52.0	34.0-62.0	
Stays with friends or in a dormitory	49.0	23.0-63.0	
Have you been participated in an earthquake/fire drill before?			
Yes	52.0	23.0-63.0	U: 380.0; p: 0.340
No	46.0	24.0-60.0	
Have you been harmed by any natural disaster before?			
Yes	55.5	31.0-62.0	U: 300.5; p: 0.131
No	50.0	23.0-63.0	
Have you had any relatives who suffered from any natural disaster before?			
Yes	52.0	24.0-62.0	U: 851.0; p: 0.320
No	50.0	23.0-63.0	

Table 4. Distribution of correct answers given to the propositions of the disaster preparedness survey knowledge level assessment questionnaire

Questions	Absolutely right n (%)	Right n (%)
1. The triangle of life created during an earthquake/yacht, collapse, trap reduces possible life risks.	62 (65.3)	29 (30.5)
4. It is important to be trained to do the necessary first aid work in case of any disaster.	71 (74.7)	21 (22.1)
6. During a fire, it is necessary to move by leaning in order not to suffocate from smoke.	19 (20.0)	27 (28.4)
7. In case of any disaster, electrical appliances and dangerous areas should be avoided.	76 (80.0)	18 (18.9)
8. Be aware of the difficulties of panic during disasters and act rationally.	73 (76.8)	18 (18.9)
9. It is necessary to take emergency alarms seriously and act immediately.	59 (62.1)	35 (36.8)
11. After the earthquake, one should be alert for possible aftershocks.	72 (75.8)	22 (23.2)
12. It is important to know what to do after a natural disaster.	82 (86.3)	12 (12.6)
13. It is the right thing to try to support people who need help after a natural disaster.	64 (67.4)	27 (28.4)
15. My house should not be entered until it is certain that the building is undamaged after a natural disaster.	50 (52.6)	40 (42.1)
17. It should be known which institutions can ask for help after the disaster.	74 (77.9)	21 (22.1)
18. First aid training is required.	66 (69.5)	26 (27.4)
19. Our country (Turkey) is a very risky region in terms of natural disasters.	69 (72.6)	25 (26.3)
20. In our country (Turkey), the 1999 Marmara Earthquake started a new era in disaster preparations.	26 (27.4)	34 (35.8)
21. It is necessary to feel prepared for any disaster that may occur.	55 (57.9)	38 (40.0)
22. In case of a possible disaster, earthquake bag/first aid kit should be ready and kept up to date at home.	62 (65.3)	30 (31.6)
23. It is necessary to take out a comprehensive insurance against a possible disaster.	54 (56.8)	37 (38.9)
24. It should be knowledgeable enough to tell others about precautions to be taken against a possible disaster.	47 (49.5)	43 (45.3)
25. It is important that the house you live in/to live in is earthquake resistant and this should be investigated.	80 (84.2)	14 (14.7)
26. The bad effects of disasters can be reduced by taking measures.	65 (68.4)	28 (29.5)
27. It is necessary to have a disaster preparedness plan for the family and to review this plan regularly.	60 (63.2)	32 (33.7)
28. Pre-disaster informative seminars are useful.	50 (52.6)	43 (45.3)
29. The family should be aware of the existence and location of the assembly place after the disaster.	74 (77.9)	19 (20.0)
30. The list of numbers to be called during a disaster should be known.	71 (74.7)	23 (24.2)
31. The durability and stability tests of the building you live in should be done at regular intervals.	68 (71.6)	24 (25.3)

Table 4 (Continued). Distribution of correct answers given to the propositions of the disaster preparedness survey knowledge level assessment questionnaire

Reverse directional questions	Absolutely wrong n (%)	Wrong n (%)
2. During the earthquake, it is correct to be under the column, on the balcony, and to use elevators/stairs.	80 (84.2)	13 (13.7)
3. It is enough to learn what I need to do during the disaster through various channels such as school, family, and friends.	14 (14.7)	59 (62.1)
5. Instead of finding a safe area in case of danger, it is necessary to get away from there immediately.	23 (24.2)	60 (63.2)
10. It is not dangerous to enter the water during a flood.	63 (66.3)	28 (29.5)
14. It is wrong to provide necessary first aid by checking whether there are injured people in the area where there is no risk after a natural disaster.	30 (31.6)	44 (46.3)
16. Communication tools can be occupied after a natural disaster, also except for emergencies.	78 (82.1)	15 (15.8)
32. There is no need to know the procedures for pets during disasters.	64 (67.4)	24 (25.3)

DISCUSSION

In this study, the median disaster awareness score at the knowledge level was 51 (79.6%) out of 64 points. It is seen that disaster awareness is high at the knowledge level. Similarly, Sahin et al. (2018) calculated the level of disaster awareness as 82% with an average of 8.2 correct answers out of 10 questions. In these two studies, disaster awareness was found to be high in university students, as expected.

The average age of the students participating in our study is 19. Similar to another study, no difference was found between disaster preparedness knowledge levels among different age groups (Yigit et al., 2020). The 'median score of the knowledge level of disaster preparedness (53.0) was found to be higher than the median score of first-year students (49.0) ($p<0.05$). Kohn et al. obtained similar results in their study in 2012.

In our study, the median disaster preparedness knowledge score of the Faculty of Medicine was 51.0 (min: 29.0; max: 62.0), while it was 51.0 (min: 23.0; max: 63.0) in other faculties. No significant difference was found between the two groups. In a similar study by Yigit et al. (2020), it was seen that the knowledge, attitude, and behavior scores about disaster were similar according to the faculty. The Engineering Faculty students; the fact that the subject of disaster is in their field of interest in terms of their professional life and the awareness of medical school students because they take an active part in disasters as health personnel may have caused them to get similar scores. In the study conducted by Sahin et al. (2018), a difference was found between the disaster awareness levels of the students of the Faculty of Economics and Administrative Sciences, which provides four-year education, and vocational school, which provides two-year education. This situation suggests that the level of disaster preparedness knowledge is not related to age, but to the increase in the number of disaster-related education received during the education life in parallel with the academic years and to different education programs.

In our study, disaster awareness was found to be higher in women at the level of knowledge. While the median score of the disaster awareness at the knowledge level was 54 in women (n=61) who participated in our study, this score was calculated as 49 in men (n=34) ($p<0.05$). In the study of Sinha et al. (2018), in women; In the studies of Baris (2011) and Kadioglu and Uncu (2018), disaster awareness was calculated to be higher in men. There are also some studies in which disaster awareness does not show a gender difference (Nofal et al., 2018). In terms of disaster awareness, information and experiences learned by oneself were more effective rather than gender differences.

In our study, no significant difference was found according to family income perception. While the median score of those with 'low' family income perception is 49.5, it is 51 for those with 'medium' and 54 for those with 'high'. Sattler et al. (2000) reported that there is a positive relationship between increased family income perception and disaster awareness. Increased awareness can be expected with greater potential financial loss.

In our study, disaster awareness is higher in students living in the city where their families live. For students living in the city where their families live (n=41), the median level of disaster preparedness knowledge score was 55; For those who do not live in the city where their family lives (n=54), this score is 49 ($p<0.05$). Tkachuck et al. (2018) reported similar results with our study, and they have interpreted their results as the increased awareness of people with an increased tendency to feel at risk.

The median score of 84 people who took part in an earthquake or fire drill was 52, and the median score of 11 people who did not participate in the exercise was 46. No difference was found between the two groups. In the study conducted by Sahin et al. (2018), it was seen that 78.6% of the participants had not participated in an earthquake drill before, and participating in the exercise was not related to the level of disaster awareness. In the study conducted by Sen and Ersoy (2017), the rate of participants who had previously participated in an exercise was 27.1%, and a significant difference was found between the participation of the participants in the exercise and disaster awareness ($p=0.056$). Similarly, Kapucu and Khosa's (2013) study showed that training and exercises are positively related to disaster resilience and preparedness. The reason for the difference between the studies may be that the content of the training and exercises are different from each other.

The median score of 10 participants who were harmed by a disaster before was 55, and the median score of 85 participants who were not harmed was 50. There was no significant difference between the two groups. According to the study of Ayvazoglu et al. (2020), 10.9% of the participants were affected by a natural disaster before, while 89.1% were not. In the study conducted by Sahin et al. (2018), 38.3% of the participants were previously affected by a natural disaster; Yigit et al. (2020) reported that the rate of participants who were

previously affected by a natural disaster was 52.85%. In the study by Sen and Ersoy (2017), the number of participants who were previously affected by a natural disaster was 18.6%. In a similar study by Inal et al. (2012), 81.2% of the participants had not experienced a natural disaster before, and similar to our study, it was concluded that encountering a natural disaster before was not related to the level of disaster knowledge.

Thirty (31.6%) of the students answered "yes" to the question "Have you ever had a relative who was harmed by a natural disaster before?" In the study conducted by Ayvazoglu et al. (2020), 97.8% of the participants did not lose any relatives as a result of the disaster, and it was determined that there was no relationship between the disaster risk perception levels of the participants and their previous experience of a major disaster. In the study of Sahin et al. (2018), it was seen that the rate of those who experienced disaster among family members was 49.9%, and this rate was higher than the rate of students (38.3%) who experienced a disaster themselves. In the study conducted by Yigit et al. (2020), the percentage of those whose family members encountered disasters was found to be 52.87%. This difference may have been caused by differences in geographical location and individuals' perceptions of the concept of disaster.

"It is correct to be under the column, on the balcony, and to use elevators/stairs during an earthquake." The answer was 84.2% 'absolutely wrong' 13.7% 'wrong'. After the major earthquakes in Turkey, the programs were rearranged in order to eliminate the lack of information about what to do before and during the earthquake. Society has been conscious thanks to television, the internet, brochures, etc. (Akgungor, 2014). What to do during the earthquake was mostly known correctly as expected.

"During a fire, it is necessary to bend over to avoid suffocating from smoke." The percentage of people who give the answer "absolutely correct" to the statement is 20%. Although this statement is true, the rate of those who say "absolutely true" is very low. It is seen that the students who make up the study group do not have enough knowledge about this subject. The most important cause of death in fires is acute poisoning from inhalation of carbon monoxide and other toxic substances (Økland et al., 2020). Therefore, it is necessary to move close to the ground during a fire in order to be less exposed to toxic gases (Kilic, 2010). The reason why university students do not have enough information on this subject may be that it is not as widespread for fire information as earthquakes information in our country.

"Absolutely no" was answered at a rate of 82.1% to the proposition "after a natural disaster, communication tools can also be occupied except in emergencies." After the Izmir earthquake that took place in this region shortly before the study, there was a telecommunication problem for a while as a result of the intensive use of telephones; calls are delayed. The fact that this negatively affects the coordination of post-disaster search and rescue efforts and health service delivery may have caused a high rate of no response. It is known that communication problems were experienced in previous earthquakes that caused destruction.

"Absolutely yes" was answered by 80% to the proposition "in case of any disaster, electrical appliances and dangerous areas should be avoided." The most important of the secondary damages that are not directly caused by the earthquake after the earthquake are fires; electrical failures, overturning of heating devices, contact of flammable and explosive materials with ignition sources (Kilic & Koralturk, 2000). In the study of Tuladhar et al. (2014), students were generally unaware of the related or secondary disasters that followed a major disaster and only gave correct answers to the relevant fire disaster for earthquakes.

The answer "absolutely true" was given by 84.2% to the statement "It is important that the house in which you live or will live is resistant to earthquakes and this should be investigated." As the closest example; In the Izmir earthquake of 30 October 2020, it was observed that while some buildings next to each other were intact, other buildings were destroyed. The fact that the houses on the same ground were damaged at different amounts after different earthquakes may have increased the importance given to the durability of the house to be lived in. In other studies, the effective ratio of the durability and earthquake resistance of the house to the housing preference has been observed similarly (Altun, 2017).

In the question "the 1999 Marmara earthquake in our country started a new era in disaster preparations", 27.4% answered "absolutely true" and 35.8% answered "correct", with a lower level of awareness than expected. The reason may be that the study group was mostly young at the time of the 1999 earthquake or was not born yet.

As the education and knowledge levels of individuals about natural disasters increase, the dimensions of material and moral damages caused by natural disasters, preparations for natural disasters, and behaviors during disasters also change (Inal et al., 2012). Pre-disaster preparations are the most important part of preventing the damages caused by disasters. Increasing the level of education will increase awareness of disaster risks and consequences (Gillani et al., 2020). In order to create social disaster awareness, it should be aimed to increase the knowledge and awareness of especially young people about disasters.

Limitations

Only 17.7% of the first and second-year students of Izmir Katip Celebi University, Faculty of Medicine, which constitute the target audience, responded to this online survey. Therefore, the results can only represent the participating medical students. The number of participation (n=20) that was achieved from other faculties was very low level. Extremely low numbers of participation affect the power of representation and limit our comparative results. The ability of the participants to represent the students of their own faculties was not provided. Results represent only students who answered the questionnaire.

There is no validity and reliability study for the questionnaire used in this study. A questionnaire form was prepared by the researchers based on the literature.

CONCLUSION

This study, which we conducted to determine the disaster preparedness knowledge level of medical faculty students of a

university, offers some striking results despite its limitations. It can be said that the level of disaster preparedness for all participants is good. In this study group, the level of disaster preparedness was better among female students, students studying in the upper classes, and students living in the province where their families live. It is recommended that disaster preparedness and topics be included in the undergraduate curriculum not only in medical faculties but also in other health-related schools. Medical and health students should take an active role in disaster preparedness studies for the public. Additionally, it is recommended to conduct a similar study in a larger study group.

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REFERENCES

Akgungor, C. (2014). Sarsıntı başladığında kitlesel afet eğitimi ve deprem anında birey davranışı örneği [An example of mass disaster education and individual behavior at the time of the earthquake]. *İstanbul Üniversitesi Siyasal Bilgiler Fakültesi Dergisi* [*Journal of Istanbul University Faculty of Political Sciences*], 0(49), 29-63.

Altun, D. (2017). *A research to identify the factors that affect housing purchase decision in Karaman* [Master thesis, Karamanoglu Mehmet Bey University]. Available at: https://dosya.kmu.edu.tr/sbe/userfiles/file/tezler/isletme/duygualtun.pdf (Accessed: 11 March 2021).

Ayvazoglu, G., Cekic, M. and Yucel, H. (2020). Evaluation of disaster risk perception and disaster preparedness of Hatay Mustafa Kemal Unıversity students. *Electronic Journal of Social Sciences*, 4(7), 85-97. https://doi.org/10.29228/sbe.48454

Baris, E. (2011). *The effectiveness of the disaster medicine training program for emergency physicians who are working for emergency medical services in Izmir city center* [Doctoral dissertation, Dokuz Eylul University].

Chacko, S., Randolph, R. and Morsch, G. (2019). Disaster medicine: Public health preparedness for natural disasters. *FP Essentials*, 487, 17-22.

Dokmeci, A. H. and Merinc, F. (2018). Namık Kemal Üniversitesi öğrencilerinin temel afet farkındalığının değerlendirilmesi [Evaluation of basic disaster awareness of Namık Kemal University students]. *Afet ve Risk Dergisi* [*Journal of Disaster and Risk*], 1(2), 106-113. https://doi.org/10.35341/afet.454340

Gerdan, S. (2014). Determination of disaster awareness, attitude levels and individual priorities at Kocaeli University. *Eurasian Journal of Educational Research*, 55(1), 159-176. https://doi.org/10.14689/ejer.2014.55.10

Gillani, A. H., Mohamed Ibrahim, M. I., Akbar, J. and Fang, Y. (2020). Evaluation of disaster medicine preparedness among healthcare profession students: A cross-sectional study in Pakistan. *International Journal of Environmental Research and Public Health*, 17(6), 2027. https://doi.org/10.3390/ijerph17062027

Inal, E., Kocagoz, S. and Turan, M. (2012). Basic disaster consciousness and preparation levels. *Turkish Journal of Emergency Medicine*, 12(1), 15-19. https://doi.org/10.5505/1304.7361.2012.05658

Kadioglu, B. U. and Uncu, F. (2018). Disaster awareness research in family health centers: The case of Elazig. *Journal of Current Researches on Health Sector*, 8(2), 1-10.

Kapucu, N. and Khosa, S. (2013). Disaster resiliency and culture of preparedness for university and college campuses. *Administration & Society*, 45(1), 3-37. https://doi.org/10.1177/0095399712471626

Karanci, A. N., Aksit, B. and Dirik, G. (2005). Impact of a community disaster awareness training program in Turkey: Does it influence hazard-related cognitions and preparedness behaviors. *Social Behavior and Personality: An International Journal*, 33(3), 243-258. https://doi.org/10.2224/sbp.2005.33.3.243

Kilic, A. (2010). *Yangın yerinde zehirli gazlardan doğan tehlikeler* [*Hazards arising from toxic gases at the fire site*]. Available at: http://www.yangin.org/dosyalar/yangin_yerinde_zehirli_gazlardan_dogan_tehlikeler.pdf (Accessed: 11 March 2021).

Kilic, A. and Koralturk, G. (2000). *Post-earthquake fires and their modeling* [Master thesis, Istanbul Technical University]. Available at: https://polen.itu.edu.tr/handle/11527/11613 (Accessed: 11 March 2021).

Kouadio, I. K., Aljunid, S., Kamigaki, T., Hammad, K. and Oshitani, H. (2012). Infectious diseases following natural disasters: Prevention and control measures. *Expert Review of Anti-Infective Therapy*, 10(1), 95-104. https://doi.org/10.1586/eri.11.155

Nofal, A., Alfayyad, I., Khan, A., Al Aseri, Z. and Abu-Shaheen, A. (2018). Knowledge, attitudes, and practices of emergency department staff towards disaster and emergency preparedness at tertiary health care hospital in central Saudi Arabia. *Saudi Medical Journal,* 39(11), 1123-1129. https://doi.org/10.15537/smj.2018.11.23026

Økland, O. P., Nakstad, E. R. and Opdahl, H. (2020). Forgiftning med karbonmonoksid og cyanidgass ved brann [Poisoning with carbon monoxide and cyanide gas in case of fire]. *Tidsskrift for den Norske Laegeforening: Tidsskrift for Praktisk Medicin, Ny Raekke* [*Journal of the Norwegian Medical Association: Journal of Practical Medicine, New Series*], 140(10). https://doi.org/10.4045/tidsskr.19.0748

Sahin, Y., Lamba, M. and Oztop, S. (2018). Üniversite öğrencilerinin afet bilinci ve afete hazırlık düzeylerinin belirlenmesi [Determining the disaster awareness and preparedness levels of university students]. *Medeniyet Araştırmaları Dergisi* [*Journal of Civilization Studies*], 3(6), 149-159.

Samah, A. A., Zaremohzzabieh, Z., Shaffril, H. A. M., D'Silva, J. L. and Kamarudin, S. (2019). Researching natural disaster preparedness through health behavioral change models. *American Journal of Disaster Medicine*, 14, 51-63. https://doi.org/10.5055/ajdm.2019.0315

Sattler, D. N., Kaiser, C. F. and Hittner, J. B. (2000). Disaster preparedness: Relationships among prior experience, personal characteristics, and distress. *Journal of Applied Social Psychology*, 30(7), 1396-1420. https://doi.org/10.1111/j.1559-1816.2000.tb02527.x

Sen, G. and Ersoy, G. (2017). Evaluating the level of knowledge of a hospital disaster relief team about disaster preparedness. *Gumushane University Journal of Health Sciences*, 6(4), 122-130.

Sengun, H. and Kucuksen, M. (2019). Why is the disaster management training required? *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* [*Erciyes University Journal of Social Sciences Institute*], 33(46), 193-211.

Sinha, A., Pal, D. K., Kasar, P. K., Tiwari, R. and Sharma, A. (2008). Knowledge, attitude and practice of disaster preparedness and mitigation among medical students. *Disaster Prevention and Management: An International Journal*, 17(4), 503-507. https://doi.org/10.1108/09653560810901746

Tkachuck, M. A., Schulenberg, S. E. and 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

Yigit, E., Boz, G., Gokce, A. and Ozer, A. (2020). Knowledge, attitudes and behaviours about disasters at Inonu University of Medical and Engineering students. *Sakarya Medical Journal,* 10(4), 580-586.