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Determination of Disaster Awareness, Attitude Levels and Individual Priorities at Kocaeli University

Serpil GERDAN*

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Abstract

Problem Statement: In disaster prone countries, preparedness is an important factor in disaster mitigation. There are various disaster management approaches. However, one common point of these approaches is that they are "preventive." First and foremost of the principal components of the preventive approach is preparedness and education. It is possible to increase the capacity to cope with the disasters, which show variety in terms of their development periods and times and mostly involve uncertainty, by raising the awareness of all components, all individuals and communities in line with this common cause.

Purpose of Study: The goal of this study is to determine the levels of disaster awareness and attitude and the individual priorities of the personnel and the students at Umuttepe Campus of Kocaeli University.

Methods: In this survey, a relational scanning model was applied and the data were collected by a measurement tool via the Internet. The data were analyzed with percentage, frequency, arithmetic means, t-test, F-test (one-way ANOVA) and Scheffe test by using SPSS 14.00 statistical program.

indings and Results: The difference between the awareness levels of academic and administrative personnel is associated with the positive influence of education level and responsibilities. Level of education is an important factor in reducing disaster damages. Comparison of age groups shows similar results for both personnel and student groups. This result is anticipated, because older groups are supposed to be more sensitive and responsible to the problems in their Turkish communities in regard to their experiences.

Students in the Department of Engineering have the highest awareness level of all. Most of these students are from the Departments of Geology

*Ph.D., Asst. Prof., Kocaeli University, Izmit Vocatioanl School, Turkey, sgerdan@kocaeli.edu.tr

and Geophysics and have the privilege of taking courses related to disasters.

Conclusion and Recommendations: After the devastating 1999 Kocaeli earthquake in Turkey, some key institutions initiated and developed several disaster preparedness training programs, which included basic disaster awareness, awareness of structural and nonstructural earthquake hazards mitigation. Those were undoubtedly very beneficial programs, none of which was included in a formal education system, however. For this reason, most of the disaster prone countries initiated disaster education programs, considering the major disasters on their land in their curriculum. Our results support the world's science-based developments and emphasize that education and training in disaster awareness in formal education is very important.

Keywords: Disaster, earthquake, disaster awareness, attitude, disaster education.

Thanks to the developing and changing approaches to the fights against disasters, all the institutions need to prepare "disaster and emergency plans" in order to preplan what to do in case of an emergency. In disaster prone countries, preparedness is an important factor in disaster mitigation. There are various disaster management approaches. However, one common point of these approaches is that they are "preventive." First and foremost of the principal components of preventive approach is preparedness and education, as they are considered to be the most important parts of disaster and emergency management (Baldwin, 1994; Quarantelli, 1986; Ford & Schmidt, 2000). It is possible to increase the capacity to cope with the disasters, which show variety in terms of their development periods and times and mostly involve uncertainty, by raising the awareness of all components, all individuals and communities in line with this common cause. In this system, known as *integrated disaster management* in the developing world, the right "intervention" could be possible by healthily carrying out the pre-event works.

In previous studies, it has been reported that disaster awareness develops in a positive way after the disasters. Training gains speed and public preparations of communities living in disaster prone regions are higher than in the other regions (Doung, 2009; Tanaka, 2005). The studies of Tierney et al. (2001) and Palm and Carroll (1998), emphasize that factors, such as gender, age, disaster experience, ethnicity, and social class significantly affect public activities in earthquake preparedness and urban vulnerability studies. Additionally, marital status, number of children, home ownership status and level of education are also effective in the development of these activities. In order to mitigate the effects of the disasters after the 1999 earthquakes, which wounded our country deeply, and to develop the behavior pattern at the time of the disaster, training programs were developed by many institutions, such as the Ministry of Education, Boğaziçi University, Kandilli Observatory and Earthquake Research Institute, Turkish Red Crescent, universities,

municipalities and non-governmental organizations (MEB, 2011; Sanduvac & Petal, 2010; GHI, 2011). Unfortunately, these training programs could only be continued for a short time after the great losses.Thet could not go beyond social activities and could not be integrated into the education system. In a study carried out by Karancı et al. (2005), it is stated that such short disaster preparedness trainings increase the individuals' motivation, but do not cause a permanent change in behavior. The same study emphasized that education reduces the anxiety for potential disasters, and as the education level increases, anxiety decreases (Karancı et al., 2005). Therefore, determination of existing awareness, attitude and individual priority levels from the individual to the society for the development of community-based disaster trainings and programs, and inclusion of courses on disaster trainings in all levels of education will serve the development of social awareness. In addition, awareness at the corporate level, knowing attitudes and individual priorities will develop the capacities of institutions to cope with disasters in a positive way. It is quite important for personnel and students to know how to behave at the time of an event, especially in educational institutions, to reduce vulnerability. It is the group with the power of educated people that will realize the fastest, the most accurate and the most effective intervention in case of an emergency or disaster. In a study conducted by Sudarmadi et al. (2001), it is reported that educated people are the center of the future and their environmental sensitivity is higher than others'.

The purpose of the study

This study aims to determine the related awareness, attitudes and individual priorities of the personnel (academic and administrative) and the students at Umuttepe campus. For this purpose, answers for the following questions were researched.

- What are the awareness and attitude levels of personnel and students related to natural disasters (especially earthquakes)?
- Is there a significant correlation between the titles of the personnel and their awareness and attitude?
- Do the awareness and attitude levels of students related to disasters differ according to classes they attend?
- Do the awareness and attitude levels of individuals related to disasters differ significantly according to certain factors (disaster experience, age, gender and disaster training they received)?
- Do the awareness and attitude of students related to disasters differ significantly according to the departments in which they study?
- What are the individual priorities of participants in the research regarding disasters?

Method

Research Design

The relational scanning model was applied in this survey. This is an analysis method carried out to determine if there is a correlation between two or more variables (Karasar, 1994). The comparison method used in the relational scanning model is another method used in this study.

Research Sample

The group participating in this research consisted of academic and administrative personnel working at Umuttepe Campus of Kocaeli University and studying 1st and 4th year students. Within the scope of the research, 190 personnel (10% of the staff of Umuttepe Campus), 129 of whom were academic, 61 of whom were administrative and 735 students (10% of students of Umuttepe Campus) were contacted. In total, 466 students in their first year and 269 students in their 4th year were reached.

Research Instrument and Procedure

Reviewing the literature examining the awareness and attitude levels regarding disasters, a great number of question repositories expedient to the purpose were constituted. The measurement instruments of Yakut (2004a; 2004b), Fişek and Kabasakal (2008) were of benefit in the construction of the items. To examine the intelligibility and scientific competence, the items were presented to ten faculty members/instructors working in different disciplines (earth sciences engineering, experts in Turkish language and literature, disaster and emergency, and assessment and evaluation) to get their expert opinion. After receiving their feedback, corrections were made in the measurement instruments. A pilot study was conducted with 156 first-year students of the Department of Medicine with the aim of testing the intelligibility of the items in the measurement instrument. This number is considered appropriate by the experts working in the field of assessment and evaluation. According to Büyüköztürk (2002), in the cases when the number of variables is not very high, a sample size between 100 and 200 is sufficient.

Validity and Reliability

A factor analysis was conducted in order to determine the validity level of the scale. It consisted of 52 items in total, 25 of which were for awareness, 19 for attitude, and the graded items were prepared for the determination of priorities and independent variables after the pilot implementation. For the evaluation of the scale in terms of reliability, the coefficient of internal consistency was examined. Internal consistency means that the items have a certain conceptual structure. As a result of the conducted factor analysis, 6 of the 25 items in the awareness section were eliminated, as they were below the 0.45 factor value and 19 items were left behind. Seven of the 19 items in the attitude section were eliminated and 12 items remained (Gerdan, 2010).

As a result of the item analysis, pilot implementation coefficient of internal consistency (reliability) was calculated as alpha=0.82 for the awareness part and alpha=0.67 for the attitude part. These values are defined as "good" according to the

measurement instrument development criteria. The measurement of awareness and attitude in the measurement instrument were ranked with a triple Likert scale. The Likert scale is a type of scale frequently used by social scientists to measure attitude (Yurt, 2008).

A group of grading items, which could not be defined in the awareness and attitude sections, but were important in terms of awareness level, aimed at determining the individual priorities regarding disasters was also presented to the practitioners. Each ranked item is intended to determine the individual priorities of the participants in certain situations, and ranked as 1: The most, 2: A lot, 3: Little, 4: The least.

Data Analyses

Statistical analysis of the survey was conducted using the SPSS 10.0 program. A one-way ANOVA-test (F-test) was applied to test the differences among two or more independent groups, such as age groups. Also, t-tests were applied in the survey in order to compare the means of two groups, e.g. academic and administrative personnel, female and male groups.

Results

This study aimed to determine the levels of disaster awareness and attitudes of the personnel working at residences re-structured after the 1999 earthquake in terms of construction techniques and the students of Kocaeli University at Umuttepe campus. This objective is important in terms of the development of response capacity of the students and the personnel and the determination of the priorities in the awareness-raising training.

The study aimed that items including the awareness and attitude levels for the personnel group would be associated with the items defined as independent variables, such as duty type (academic, administrative), gender, age group, whether or not they had experienced a prior devastating disaster, whether or not they had received disaster training at an institution, whether or not they had taken precautions to recover non-structural damages (fixing furniture) and whether or not they had DASK (Turkish Catastrophe Insurance Pool).

It was aimed to obtain a relational result by carrying out the same application for the student group with independent variables including question items related to faculty, department type (numerical, verbal), class, gender, age group, whether or not they had experienced a prior devastating disaster, whether or not they had received disaster training from an institution, whether or not they had taken precautions to recover non-structural damages (fixing furniture) and whether or not they had DASK (Turkish Catastrophe Insurance Pool) for themselves or their families.

Furthermore, an evaluation including the ranked choices to determine the individual priorities was carried out for each group.

Personnel Findings

The results of the relational analysis obtained for the determination of the awareness and attitude levels for the personnel are given below.

The limits used in statistical evaluations for the significance value (p), which is used to determine whether there is a significant correlation (significance of the difference between the groups) between two comparison groups (t-test) and among more than two groups (ANOVA), are p<0,01, p<0,05, p<0,001 and p<0,005. In addition, in the cases when the p significance value is in the specified limits, the sample means (M) belonging to the groups are also expected to vary from each other.

The results of the t-test for the awareness and attitude level's correlation to duty type are given in Table 1.

Table 1

The Results of the Awareness and Attitude Level t-Test According to the Duty Types of Personnel

		N	*M*	*S*	*t*	*P*
Awareness	Administrative	61	40.77	5.96	2.48	0.014
	Academic	129	43.07	5.99		
Attitude	Administrative	61	29.47	2.79	-1.28	0.200
	Academic	129	29.96	2.30		

Table 1 shows a remarkable difference between the two groups of the personnel [t(188)=-2.48, p<0.01 or p<0.05]). The awareness level of the academic personnel (M=43.07) is higher than the administrative personnel (M= 40.77). This finding can be interpreted as meaning that there is a significant correlation between the duty types and the awareness.

There is no significant difference in t-test results for the attitude levels of the personnel associated with their duty type [t(188)=-1.28, p<0.05]. The result of the F-test for the awareness of the personnel shows a significant difference according to age group [F(4-185)= 7.237; p<0.001]. The Scheffe-test was applied to determine the differences in the age groups, and the results show that the awareness level is the highest (M= 44.51) in the age group of 40 and over. The values subsequently decrease in a positive correlation with the age group: ages 36-40 (M=43.80), ages 26-30 (M=41.68), ages 31-35 (M=40.07) and ages 20-25 (M=35.50), respectively.

Similarly, the result of the F-test for the attitude of the personnel shows a significant difference according to age group [F(4-185)= 3.342; p<0.01 p<0.05].. The Scheffe-test was applied to determine the difference in the age groups, and the results show that the attitude level is the highest (M= 30.55) in the age group of 40

and over. It is followed by 31-35 age group (M=30.17), 36-40 age group (M=29.60), 26-30 age group (M=28.89), and 20-25 age group (M=29.50) respectively.

There is no significant difference in t-test results [$t_{(188)}$=1.05, p<0.001] for the awareness and attitude level associated with gender. The t-test was applied to determine the effects of people fixing the threatening materials in the places they lived to remove the non-structural damages on their awareness and attitudes. While a significant difference is observed in terms of the effects of fixing the furniture on the awareness [$t_{(188)}$=5.59, p<0.001], no significant difference is observed in terms of its effects on attitude [$t_{(188)}$=1.80, p<0.001]. The ANOVA results for the effects of personnel's benefiting from the insurance systems for natural disasters, especially earthquakes on their awareness levels are given in Table 2.

Table 2

Personnel's Insurance (DASK) Awareness, Attitude ANOVA Results

			sd	*(KO)*	*F*	*P*
Awareness	Between Groups	1276.32	3	425.44	13.927	0.000
	Within Groups	5682.11	186	30.549		
	Total	6958.44	189			
Attitude	Between Groups	5.637	3	1.879	0.304	0.823
	Within Groups	1151.542	186	6.191		
	Total	1157.179	189			

While the results show that there is quite a significant correlation between having DASK and one's awareness level, no significant correlation is observed in terms of the attitude levels.Although no permanent behavior change is observed in individuals due to the negative effects of the disasters being forgotten over time and the inadequacy of the informal training received, the need to take precautions in living spaces is in question because of the expected (potential) earthquakes and various legal requirements. Statements made by scientists and the media, which remained on the agenda for a long time after the 1999 earthquakes, related to taking individual precautions (earthquake kits, fixing furniture, etc.) bear an encouraging qualification in this regard.

In the study, ranked items (1: The most, 2: A lot, 3: Little, 4: The least) take place in the last part of the measurement instrument in order to reveal certain individual and local changes during the periods before, during and after the 1999 earthquakes, and reveal the situation related to the individuals' preferences after the 1999 earthquakes. The frequency and percentage values calculated with 190 ranked items in total belonging to the personnel, 108 of whom are females, 126 of whom have experienced a disaster and 17 of whom have received disaster training, are given in Table 3.

Table 3

Frequencies and Percentages of Individual Priorities of the Personnel

N	*p*	*n*	*p*	*n*	*p*	*n*	*p*
Please order the events which affected you the most after the earthquake in 1999.							
Deaths		Wreckages		Panic and fear		Chaos in Social order	
133	68,9	24	12.4	11	5.7	25.0	13.0
What do you think a potential major earthquake affects the most in the region you live? Please order.							
People		Houses		Public Buildings		Industrial Institutions	
138	71.5	17	8.8	13	6.7	25	13.0
What are the threatening factors during a potential earthquake in the region you live? Please order.							
Buildings, furniture		Industrial Institutions		Panic		Natural Gas Leaks	
95	49.2	35	18.1	27	14.0	36	18.7
Please order the reasons if you did not take earthquake-resistance test for the building you live in after the 1999 Marmara Earthquake.							
Financial Condition		Finding it Unnecessary		Construction after 1999		Failing to Achieve a Consensus	
20	10.4	25	13.0	34	17.6	114	59.1
What do you look for when you buy a new house? Please order.							
Construction after 1999		Ground Study		Structural Reliability		Proximity to Certain Centers	
60	31.1	88	45.6	28	14.5	17	8.8

Table 3 shows what is looked for when buying a new house, "ground study" at the rate of 45.6% for the personnel ranks first. The most important factor reported among the reasons for not having an earthquake-resistance test for the building lived in after the 1999 Marmara Earthquake is "failing to achieve a consensus" with a rate of 59.1%; the least important factor is "Financial Condition" with a rate of 10.4%.

Student Findings

A significant correlation is observed between the type of faculty and the levels of awareness in the results of ANOVA obtained associating the students' faculty types to their awareness and attitude levels [$F(7\text{-}727)= 5.547$; $p<0.001$]. Among the student groups, the awareness levels of the students in engineering are higher than the students of the other departments. However, a significant correlation can be established between the faculty type and the attitude levels [$F(7\text{-}727)= 2.142$; $p<0.05$]. In terms of attitude levels, the school with the highest value is the School of Health Sciences. The School of Health Services has the highest arithmetic mean value with $M=30.4583$.

As a result of the analyses of the student groups, a correlation depending on gender is not observed in parallel with the results obtained from the personnel data. However, the remarkable point here is that the gender of the students of the School of Health Sciences, differing in terms of attitude levels, are female. This situation can be interpreted as gender affecting the attitude levels among student groups to some extent. It is a foregone conclusion that the awareness levels of the students of engineering are higher than the others. A part of the students of the departments located in Umuttepe campus attend the Department of Earth Sciences (Departments of Geology and Geophysics) and take courses related to disasters, so they constitude an exception in this regard. The results of the t-test for the awareness and attitude levels to the department type (numerical, verbal) are given in Table 4.

Table 4

The Results of the Awareness and Attitude Level t-Test According to the Department Type of the Students

		N	*M*	*S*	*t*	*P*
Awareness	Numerical	541	38.88	6.45	0.090	0.928
	Verbal	194	38.83	6.34		
Attitude	Numerical	541	29.31	2.96	0.377	0.706
	Verbal	194	29.22	3.06		

There is no significant difference for the levels of awareness [t(733)=0.090, p<0.001] and attitude [t(733)=0.377, p<0.001] according to the department types (numerical, verbal). The results of the t-test for the awareness and attitude levels to classes of the students are given in Table 5.

Table 5

The Results of the Awareness and Attitude Level t-Test According to the Classes of the Students

		N	*M*	*S*	*t*	*P*
Awareness	1st grade	466	38.3605	6.3651	-2.849	0.005
	4th grade	269	39.75446	6.4316		
Attitude	1st grade	466	29.2532	3.0090	-0.453	0.651
	4th grade	269	29.3569	2.9598		

The scores of the awareness levels regarding natural disasters according to the classes of the students vary significantly [t(733)=-2.849, p<0.005]. The awareness levels of the 4th year students (M= 39.7546) are higher than the 1st year students (M=

38.3605). This finding can be interpreted as meaning that there is a significant correlation between the awareness levels and the students' classes. However, no correlation has been established between the attitude levels regarding natural disasters and the students' classes. [t(733)=-0.453, p<0.001].

No significant correlation is observed between the awareness levels of the students [t(733)=0.201, p<0.001] and their gender. However, a significant correlation at the least can be established between the gender of the students and their attitude levels [t(733)=2.695, p<0.05]. The results of the F-test for awareness levels of the students show a significant difference according to age group [F(2-732)= 6.719; p<0.001]. The Scheffe-test was employed to examine the difference in the age groups, and the results show that awareness level is the highest (M= 43.53) in the 26-30 age group. It is followed by the 21-25 age group (M=39.38) and 15-21 age group (M=38.18), respectively.

Similarly, the results of the F-test for attitude levels of the students show a significant difference according to age group [F(2-732)= 3.619; p<0.05]. The Scheffe-test was employed to examine the difference in the age groups and the results show that attitude level is the highest in the 26-30 and 21-25 age groups. The fact that the awareness and attitude levels of the students at older ages (26-30) are the highest of the student age groups supports both the results of the personnel age groups and the awareness levels of the 4th year students to be higher than the others.

A significant difference was obtained [t(733)=7.944, p<0.001] on the awareness level between the students who had experienced a disaster before and those who had no such experience. However, no significant difference is observed in terms of the effect of the disaster experience on the attitude levels [t(733)=0.061, p<0.001]. According to the results, a significant difference is observed in terms of the effect of the students receiving a previous disaster training on their awareness levels [t(733)=6.416, p<0.001]. A less significant difference is observed in terms of the attitude [t(733)=2.404, p<0.05].

The awareness level of a student group with a disaster experience is higher than the others. This situation can be interpreted as experiences and acquirements gained at a young age are more permanent. No significant difference can be observed in terms of the attitude.

According to the results of the analyses, there is a significant correlation between the students' fixing the furniture and their awareness [t(733)=12.642, p<0.001]. It is observed that the awareness levels of the ones who fix their furniture (M=42.6063) are much higher than the others. A significant correlation in the level of [t(733)=1.455, p<0.05] is observed between fixing the furniture and the attitude.

The number of people who take precautions for disaster training and non-structural damages in the student groups is quite high compared to the numbers in the personnel group. The training programs they received during the university period (Department of Engineering) are also included in these training programs. It can be said that students are interested in disaster training, these training programs

have positive impacts on their awareness levels and they provide permanent behavior changes in students.

A significant correlation is established between the students' having DASK and their awareness levels [F(4-730)= 63.224; p<0.001]. There is a difference between the means of the awareness level values of the ones who took out DASK between the years 2000 and 20008 (M=42.60) and the ones who did not (M=36.60). On the other hand, the results show that there is even a little significant correlation between the attitude levels and taking out DASK (in the level of p<0.05). The results of the Scheffe test for the ones who did not take out DASK in terms of their attitudes (M=27.8140) .is quite low compared to the others. The frequency and percentage values calculated with the graded items for the students in the study are given in Table 6.

Table 6

Frequencies and Percentages of Individual Priorities of Students

N	**p**	**n**	**p**	**n**	**p**	**n**	**p**
Please order the events which affected you the most after the 1999 earthquakes.							
Deaths		Wreckages		Panic and Fear		Chaos in Social Order	
484	65.6	104	14.2	53	7.2	97	13.0
What do you think a potential major earthquake affects the most in the region you live? Please order.							
People		Houses		Public Buildings		Industrial Institutions	
551	74.7	86	11.7	18	2.4	83	11.2
What are the threatening factors during a potential earthquake in the region you live? Please order.							
Buildings, furniture		Industrial Institutions		Panic		Natural Gas Leaks	
375	50.8	146	19.8	106	14.4	111	15.0
Please order the reasons if you did not take earthquake-resistance test for the building you live after the 1999 Marmara Earthquake.							
Financial Condition		Finding it Unnecessary		Construction after 1999		Failing to Achieve a Consensus	
89	12.1	115	15.6	135	18.3	162	22.0
Those whose parents reside out of Kocaeli							
237	32.1						
What do you look for when you buy a new house? Please order.							
Construction after 1999		Ground Study		Structural Reliability		Proximity to Certain Centers	
120	16.0	123	17.0	192	26.0	303	41.0

Table 6 shows what people look for when purchasing a new house. "Proximity to certain centers" at the rate of 41% for the students ranks first. Except for students whose parents reside outside of Kocaeli, the most important factor given for reasons not taking earthquake-resistance tests for the building you live in after the 1999 Marmara Earthquake is "failing to achieve a consensus" with a rate of 22%.

Discussion and Conclusion

Although numerous different programs have been developed for preparedness and damage mitigation related to disasters, unfortunately there are very few studies for the determination of disaster awareness of communities, especially educational institutions. (Horan, Ritchie, Meinhold, Gill, Hougheton, Gregg, et al, 2010). In one of these studies, the correlation between the level of disaster preparedness and the demographic factors of the educational institution was investigated, and no significant correlation was established between them (Kano and Bourque, 2008). The lack of studies for the determination of the awareness and knowledge levels of the society prior to the development of the programs for disaster preparedness can be thought to be one of the reasons for this result. It is quite important that the personnel and the students know how to behave in case of disasters or emergencies, especially in the educational institutions, to reduce the potential harm. It is necessary to know the initial awareness levels of the communities in order prepare training programs and to ensure the correct reactions in the face of unexpected hazards such as earthquakes.

In comparing Table 3 with Table 6, "deaths" after the 1999 earthquakes are seen to be the most important event affecting both the personnel (68.9%) and the students (65.6%). Also, the percentages for the answers given by both the personnel and the students for the item "What do you think a potential major earthquake affects the most in the region you live?" are very close to each other. "People" are thought to be affected the most with a percentage of over 70% for both groups. In another graded item examining what the threatening factors are during a potential earthquake in the region lived, "buildings and furniture" at the rate of 49.2% for the personnel and 50.8% for the students ranks first. While the most important factor when buying a new house is "ground study" for the personnel group with a rate of 45.6%, "proximity to certain centers" is preferred for the student group with a rate of 41%.

According to the results of the study, the awareness level of the academic personnel being higher shows that there is a significant positive correlation between the level of education and disaster awareness. Similarly, the fact that the education level is an important factor in disaster mitigation is also stated in a study by Rüstemli and Karancı (1999).

A comparison of the age groups shows similar results both for the personnel and the student groups. This result was anticipated, because, in Turkey, older age groups are expected to be more sensitive and responsible to the problems in their communities, based on their experiences.

It is quite interesting that no correlation can be established between the awareness and attitude levels of the personnel depending on their gender. However, in a study of Bourque et al. (2012), females described themselves at higher risk in the face of potential disasters. Furthermore, in most studies conducted on societies, a significant difference is observed between the behavior patterns and the attitudes of females and males in the face of events. One of the most important resources of this difference is that females have lower education and income levels than males. In the application realized in our campus, the fact that no difference is observed in terms of gender or none of the groups have gained an advantage over the others can be explained as the personnel profile having the same level of education and similar level of income in their own groups.

It is surprising that the awareness and attitude levels of the personnel who have experienced a destructive natural disaster before and received disaster training at an institution do not differ significantly from the others. This situation can be explained as the effects of the natural disasters being forgotten over time, the informal training programs provided by various institutions not being given properly and not being continuous or the trainings received after a certain age not being able to cause permanent behavior change in individuals. First of all, it is necessary to fully understand what the short, medium and long-term impact of the disasters on the societies and the national economy are, and the studies on disaster awareness of all the institutions from individuals to the society should be maintained in accordance with this purpose.

According to the research findings, a significant difference is found between the education level of the students and their disaster awareness levels. In addition, the fact that the students at the Department of Engineering have higher disaster awareness levels than the students in the other departments can be interpreted as "Undergraduate education period" and in particular, and the fact that the disaster related courses given in the 3rd year provide a positive contribution to awareness raising.

Various training programs were conducted in our country. However, none of these training programs, which are undoubtedly useful, are included in the formal education system. Yet, the information learned at school is more scientific and permanent than the information learned by chance from family and the environment (Tsai, 2001).

The lack of disaster awareness is the first obstacle encountered in disaster response. An approach perceiving the damages caused by disasters as reparation or reconstruction of the buildings and facilities cannot meet the needs of communities affected by disasters.

Above all, disaster mitigation can be possible by meeting psychological and physical needs of the society. It is possible for the post-disaster psychology of the society to be affected the least by raising the awareness before the disaster happens. Disaster awareness development can be achieved in many ways. However, turning the awareness into a permanent behavior change in individuals is one of the

important issues to be emphasized. It is feasible with the development of sustainable mitigation strategies and active participation of the individuals in these activities.

Therefore, the strategies to be implemented should focus on informing, training and raising awareness of individuals from a young age. Disaster trainings are increasing rapidly in the world, and many countries are including disaster training programs in their curriculum. The findings of this study also support the inclusion of disaster training in the formal education system.

For individuals to produce rational solutions for survival when disasters occur can only be possible with the development of awareness at the national level. Individuals should know the surrounding hazards, be aware of the potential risks and have the knowledge and the skills to take precautions. The study by Sudarmadi et al. (2001) emphasizes that educated groups are more knowledgeable and have a higher awareness level of environmental problems. Further training is required to increase this knowledge in developing countries.

A study conducted by Ronan and Johnston (2001) on adult and student groups emphasizes that the knowledge, awareness and risk perception levels of student groups are much higher than those of the adult groups, and training programs provide a positive contribution to this development. The study by Tanaka (2005) stresses that even if there are social differences; development of more effective disaster training programs for potential disasters is one of today's major needs for research.

Results of this study show that raising disaster awareness in our country, which is a country of natural disasters, is possible by integrating sustainable information and education programs into our education system. In the studies to be conducted in the future, practices to develop the disaster awareness of the society and to standardize the contents of the formal and informal education should be carried out.

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Kocaeli Üniversitesinin Afetlerle İlgili Farkındalık, Tutum Düzeyleri ve Bireysel Önceliklerinin Belirlenmesi

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Özet

Problem Durumu: Dünyada gelişen ve değişen afetlere müdahale ve mücadele yaklaşımları, tüm kurumların herhangi bir afet veya acil durum anında nasıl davranılacağının bilinmesi için kurumsal düzeyde afet ve acil durum planlarını hazırlamalarını gerektirmektedir. Afet riski olan ülkelerde, hazırlıklı olmak afet zararlarını azaltmak için önemli bir unsurdur. Afet yönetimi için geliştirilmiş olan

yaklaşımların ortak yanı "önleyici" olmasıdır. Önleyici yaklaşımın en temel bileşenlerinin başında ise hazırlıklı olma ve eğitim gelmektedir. Gelişim süreleri ve zamanları konusunda farklılıklar gösteren ve çoğu zaman belirsizlik içeren afetlerle baş edebilme kapasitesini arttırmak tüm bileşenleri, tüm bireyleri ve toplulukları bu ortak amaç doğrultusunda bilinçlendirmekle mümkün olabilir. Gelişen dünyada bütünleşik afet yönetimi olarak adlandırılan bu sistemde, doğru "müdahale" olay öncesi çalışmaların sağlıklı yürütülmesi ile mümkündür.

Araştırmanın Amacı: Bu çalışma ile Kocaeli Üniversitesi Umuttepe yerleşkesinde çalışan personel (akademik ve idari) ve 1999 sonrası yeniden yapılanan bu yerleşkede okuyan öğrencilerin afetlerle ilgili farkındalık, tutum ve bireysel önceliklerinin belirlenmesi amaçlanmıştır.

Araştırmanın Yöntemi: Bu çalışmada ilişkisel tarama modeli kullanılmıştır. İlişkisel tarama modeli, iki veya daha fazla değişken arasındaki ilişkinin var olup olmadığına yönelik yapılan bir analiz yöntemidir. İlişkisel tarama modellerinde kullanılan "karşılaştırma yöntemi" ise bu çalışmada kullanılan bir diğer yöntemdir.

Araştırmanın Bulgular: Çalışma sonuçlarına göre, akademik personelin farkındalık düzeyi idari personele göre daha yüksek bulunmuştur. Buna karşılık tutum düzeyleri açısından personel görev türüne bağlı anlamlı bir farklılık gözlenmemiştir. Analiz sonuçları, hem personelin hem de öğrencilerin farkındalık ve tutum düzeyleri arasında yaş grupları açısından anlamlı bir fark olduğunu göstermektedir. Her iki grup için ileri yaş gruplarının farkındalık ve tutum düzeyleri diğerlerine oranla daha yüksektir. Benzer şekilde cinsiyete bağlı olarak personel ve öğrenciler için farkındalık düzeyine yönelik anlamlı bir fark gözlenmemiştir.

Öğrencilerin eğitim gördükleri fakültelerinin türüne göre farkındalık ve tutum düzeyleri ile ilişkilendirilmesinden elde edilen ANOVA sonuçlarında fakülte türü ile farkındalık düzeyleri arasında anlamlı bir ilişki gözlenmektedir. Fakülte türüne göre, mühendislik fakültesi öğrencilerinin diğer fakülte öğrencilerine göre afetlerle ilgili farkındalık düzeylerinin daha yüksek olduğu görülmektedir. Öğrencilerin sınıflarına göre, doğal afetlerle ilgili farkındalık düzeyi puanları anlamlı bir farklılık göstermektedir. 4. sınıf öğrencilerinin farkındalık düzeyi (M= 39.7546), 1. sınıf öğrencilerinden (M= 38.3605) daha yüksektir. Öğrenci t-testi sonuçlarına göre, daha önce afet yaşamış öğrencilerin farkındalık düzeyi (M=40.4614) yaşamamış olanlara göre (M=36.8193) daha yüksektir.

1999 depremleri sonrasında "ölüm"ler hem personel hem de öğrencileri etkileyen en önemli olay olarak görülmektedir. Personeller içerisinde %68.9 ve öğrenciler içerisinde ise %65.6 olan bu değerler birbirine oldukça yakındır.

Yine olası bir depremin yaşanan bölgede en çok neleri etkileyeceği hakkındaki sonuçların yüzdesi de birbirine çok yakındır. Burada da her iki grup için %70'in üzerinde "insanlar"ın etkileneceği düşünülmektedir.

Araştırmanın Sonuçları ve Önerileri: Özellikle eğitim kurumlarında afet ve acil durumlarda personel ve öğrencilerin nasıl davranacaklarını bilmeleri görebilecekleri zararları azaltmak açısından oldukça önemlidir. Eğitim programlarının hazırlanması

ve deprem gibi ani gelişen tehlikeler karşısında doğru tepkilerin güvence altına alınabilmesi için toplulukların başlangıçtaki farkındalık seviyesinin bilinmesi gerekir.

Çalışma sonuçlarına göre; akademik personelin farkındalık düzeyinin daha yüksek olması, eğitim düzeyi ile afet farkındalığı arasında pozitif yönde anlamlı bir ilişkinin olduğunu göstermektedir. Araştırmanın bulgularında gerek farkındalık gerekse tutum açısından yaş grubuna bağlı olarak hem personel hem de öğrenci grupları için anlamlı bir ilişki kurulmuştur. Bu durum, Türkiye şartlarında ileri yaş grubundaki insanların daha fazla sorumluğa sahip olmaları ve hayat tecrübeleri ile orantılı olarak farkındalık ve tutumlarında olumlu gelişmelerin gözlenmesi ile açıklanabilir.

Araştırma bulgularına göre afet eğitimi almış öğrenciler ile almamış öğrenciler arasında farkındalık ve tutum düzeyleri açısından afet eğitimi almış öğrencilerin lehine anlamlı bir fark gözlenmiştir.

Afet farkındalığı ve afetlere yönelik olumlu tutumların eksikliği afetlere müdahale ve mücadele de karşılaşılan ilk engeldir. Afetlerin yol açtığı zararları yalnızca hasar gören yapıların ve tesislerin onarımı veya yeniden yapılanması olarak algılayan bir yaklaşım afetlerden etkilenen toplulukların ihtiyaçlarına cevap veremez. Her şeyden önce afet zararlarının azaltılması toplumun fiziksel ihtiyaçlarının giderilmesinin yanısıra psikolojik ihtiyaçlarının da giderilmesi ile mümkün olabilir. Yaşanan afetler sonrası ölümler her yaş grubundaki insanı en fazla etkileyen olaylardır. Toplulukların afetlerden en az seviyede etkilenmesi, afetler olmadan önce farkındalığın arttırılması ve afetlerle mücadelede olumlu tutumlar geliştirilmesi ile mümkündür. Bunların geliştirilmesi birçok yolla sağlanabilir. Fakat sonucun bireyde kalıcı davranış değişikliğine dönüştürülmesi üzerinde durulması gereken önemli konulardan biridir. Bunu sağlamak sürdürülebilir zarar azaltma stratejilerinin geliştirilmesi ve bireylerin bu faaliyetler içerisine etkin katılımı ile mümkün olabilir. Bu nedenle uygulanacak stratejiler bireylerin küçük yaşlardan itibaren bilgilendirilmesi, eğitilmesi ve bilinçlendirilmesi üzerine yoğunlaşmalıdır. Dünyada afet eğitimleri hızla artmakta ve her ülke sahip olduğu tehlikeleri içeren afet eğitim programlarını müfredat programları içerisine dahil etmektedir. Ülkemizde de özellikle 1999 depremleri sonrası farklı kurumlar tarafından afet farkındalığının arttırılması, yapısal ve yapısal olmayan tehlikelerin belirlenmesi ve azaltılmasına yönelik birçok eğitim gerçekleştirilmiştir. Ancak, şüphesiz ki faydalı olan bu eğitimlerin hiçbiri formal eğitim sistemi içerisinde değildir.

Bu çalışmanın bulguları bireyde farkındalığın artması ve kalıcı davranış değişikliğine katkı sağlaması için afet eğitimlerinin formal eğitim sistemi içerisine dahil edilmesini desteklemektedir.

Anahtar Sözcükler: Afet, deprem, afet farkındalığı, tutum, afet eğitimi.