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Psychological Resilience Level of Individuals Living in Çanakkale, Turkey*

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Abstract

Disasters affect individuals psychologically and some individuals take a long time to get rid of this effect. Psychological resilience is defined as the individuals having a psychologically strong structure, being affected by negative situations as little as possible and getting rid of stressful situations quickly. The aim of this study is to determine the psychological resilience level of individuals living in Çanakkale. Connor-Davidson Resilience Scale was used to determine the participants' resilience level. Participants in the study are 412 individuals, aged between 18 and 60, who are determined by the simple random sampling method living in the Central District of Çanakkale. The data were analyzed using SPSS 21 software. Cronbach's Alpha reliability coefficient of the scale was found to be 0.92. The mean of the psychological resilience level was 3.75. Results showed that the most psychologically resilient people are males, high school graduates, individuals between the ages of 29-39, divorced, those who do not have children, those with a monthly income of more than 3001 TL, those with natural disaster insurance and those who are previously faced a disaster.

Keywords: disaster, resilience, psychological resilience.

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Introduction

Disasters occurring in the world cause more property and life losses day by day (Fahjan et al., 2015). Hewitt (1997) defines disaster as extreme and diverse destruction, the collapse of social life and security. Özmen, Gerdan and Ergünay (2015) defines disasters as "consequences of natural, technological or human origin events". The fact that these events cause material and moral damage in the environment, to deal with these events and the destruction caused are described as disasters (Hyndman & Hyndman, 2010; Yavaş, 2005). Disaster and Emergency Management Authority (AFAD), an institution working to prevent disasters and minimize disaster-related damages, plan and coordinate post-disaster response, and promote cooperation among various government agencies in Turkey states that "disaster is not an event itself, it is the result it produces" (AFAD,2014, p. 23).

About 230.000 people from 14 different countries died from the earthquake that occurred in 2004 and the tsunami triggered by it (UNISDR, 2015). With the effect of disasters, fixed assets, raw materials and inventories are damaged, emergency response, aid and infrastructure spending increases after disasters, production decreases and may even come to a halt, tax revenues decrease and investment expenditures increase in the disaster area (Pelling et al., 2002).

Disasters negatively affect the psychological state of individuals. Psychologists have observed that those with any trauma and psychological problems are more affected by disasters (Phillips, 2009). Some psychological disorders are observed in individuals after disasters. Fear, panic, depression, disbelief, guilt, sadness, sleep disturbances and anorexia are psychological disorders observed in individuals after disasters (Karancı, 2008). Since the time of the disasters is not known, people's concerns increase and female individuals with low education and income levels are more psychologically affected by disasters (Yeniçeri, 2008).

Individuals who are resilient to disasters will be less affected psychologically and emotionally, they can return to daily life in a short time after disasters and continue their social life (Bonanno, 2005; Bonanno et al., 2007). In situations that disrupt the peace of the individual and cause losses in or around themselves, they do not go far from their behavior in the normal life order. Resilient individuals get rid of negative effects caused by disasters quickly.

Psychologically resilient means characteristic aspects of individuals are strong, mentally healthy and no post-traumatic stress disorder (Dutton & Greene, 2010). Psychological resilience is to be able to get rid of stressful living conditions (Ong et al., 2006). Resilient individuals are brave, caring, hopeful, and trust their own abilities to change (Larkin, 2010). Reich (2006) explains the principles of psychological resilience to disasters as personal control, adaptation to difficult conditions and strong social relationship. Terzi (2008), on the other hand, expresses psychological resilience as a strength to recover in stressful times.

Resilience is to survive difficult conditions and continue normal life. Protective factors are special abilities necessary for resilience. These abilities that individuals must have in order to be successful are health and general competencies (Dyer & McGuinness, 1996). Olsson et al. (2003) defines the characteristics that individuals should have in order to be resilient as follows;

- Constitutional resilience: Psychological, spiritual and emotional soundness.
- Sociability: Close and safe relationships with other individuals in the community.
- Intelligence: Career, success and decision making.
- Communication skills: To be able to use language well.
- Personal attributes: Coping with bad feelings, self-confidence and self-respect, self-control.

Community resilience depends on the success of public institutions and organizations in disaster response at regional and national level. Forming the society, human is the most important factor in a disaster-resilient society. So that, resilience in the disaster will be determined by the intervention of people and society. Many methods are used to determine the resilience to disasters. Research is conducted on individuals, communities, households, systems, regions or countries to determine disaster resilience. Economy, education level and quality, harm reduction plans, studies and expenditures, quality of the service provided in the society, gaining experience from past disasters and using this experience, infrastructure, quality of management, quality of the physical environment experienced by the society are among the variables used in determining the resistance against disasters (Cutter et al., 2008; Cutter, 2016). There are also studies aiming to define and assess resilience to a specific situation in the literature. Such as; women whose husbands are dead (O'Rourke, 2004), individuals after the terrorist attack (Bonanno et al., 2007), women over 60 years old living in the nursing home (Lamond et al., 2009), soldiers returning from war (Pietrzak, 2009), resilience of students (Haddadi & Besharat, 2010), earthquake survivors (Karaırmak, 2010) and academic staff (Ülker Tümlü & Recepoğlu, 2013).

Within this context, the main purpose of this study is to investigate the psychological resilience level of individuals against disasters. To help meet this purpose, research questions addressed in the study were: (1) what is the psychological resilience level of individuals against disasters? (2) do psychological resilience level of individuals against disasters differ by gender, educational status, age group, marital status, number of children owned, monthly income, status of being experienced a disaster, status of having a natural disaster insurance, status of having a chronic disease, status of having household emergency plan, status of enrollment in an organization to volunteer in a disaster situation, status of living (with family, with housemate and alone) and status of taking disaster education. The data and the results obtained from this study are expected to contribute to the psychological resilience studies against disasters.

Method

In this section, research design, population and sample, data collection tools, data collection and data analysis processes are explained.

Research Design

In this quantitative study, descriptive and casual-comparative research designs with survey method were used to identify the situation and possible cause and effect relationship between variables.

Population and Sample

The population of this research is individuals between the ages of 18 and 60 who live in the central district of Çanakkale which is a high-risk disaster area. Random sampling method was used since it is not possible to reach the entire population. The simple random sampling method is the sampling in which the individuals who make up the population are completely equal and random by chance to enter the sample (Yazıcıoğlu & Erdoğan, 2007). Çanakkale province central district population was reported as 122.613 in 2016 (Çanakkale Valiliği İl Planlama ve Koordinasyon Müdürlüğü [Çanakkale Governorate Provincial Planning and Coordination Directorate], 2017). In order to ensure a 95% confidence interval in the populations over 100.000, the number of sample must be more than 384 (Can, 2014). Thus, 422 people were reached randomly, but 10 of 422 forms were not included in the study due to missing answers and the study was conducted with data collected from 412 people.

Table 1. Demographics of the Participants

Variable	Groups	f	%
Gender	Male	197	47.8
	Female	208	50.5
Education Status	Literate	6	1.5
	Primary School	28	6.8
	Elementary / K-8	32	7.8
	High School / K-12	73	17.7
	Pre-undergraduate	63	15.3
	Undergraduate or above	201	48.8
Age	18-28	206	50
	29-39	96	23.3
	40-50	80	19.4
	51-60	24	5.8
Marital Status	Married	167	40.5
	Single	222	53.9
	Divorced	17	4.1
	Widowed	5	1.2
Number of Children	None	242	58.7
	1-3	149	36.2
	4 or more	14	3.4
Monthly income	Less than 500 TL	80	19.4
	501-1000 TL	61	14.8
	1001-3000 TL	191	46.4

More than 3001 TL	65	15.8

According to Table 1, 50.5% of the participants are female and 47.8% of them are male. The remaining 1.7% did not specify their gender. Considering the educational status, undergraduate or above degree graduates are the largest group (48.8%) and literates are the smallest (1.5%). 50% of the participants were between 18-28 ages, 23.3% were between 29-39 ages 19.4% were between 40-50 ages and 5.8% were between 51-60 ages. According to marital status, the group with the highest proportion is singles (53.9%) and the group with the lowest proportion is widows (1.2%). While the group without children has the highest proportion (58.7%), the group with the lowest proportion is the group with 4 or more children (3.4%). Considering the monthly income, the group with the highest proportion is those have monthly income between 1001-3000 Turkish Liras (TL) (46.4%) and with the least proportion is the group those have monthly income between 501-1000 TL (14.8%).

Data Collection Tools

The form used as a data collection tool consists of two parts; personal information form and Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson (2003).

The personal information form consists of 13 items aimed at determining the participants' gender, educational status, age, marital status, number of children, monthly income, status of being experienced a disaster, status of having a natural disaster insurance, status of having a chronic disease, status of having a household emergency plan, status of enrollment in an organization to volunteer in case of a disaster, status of living with housemates or living alone and status of taken any in-service education about disaster.

The Connor-Davidson Resilience Scale (CD-RISC), on the other hand, consists of 25 items that measure with the Likert-type 5-point scale developed by Connor and Davidson (2003) to determine the psychological resilience level of individuals. Scale items are rated as (1) disagree, (2) partially disagree, (3) not sure, (4) agree, (5) strongly agree. The reliability coefficient, Cronbach's Alfa, of the original English version of the CD-RISC scale was reported as 0.89 (Connor & Davidson, 2003) and 0.89 for the Turkish version of the scale (Karaırmak, 2010). The reliability coefficient obtained in this study is Cronbach's Alfa and 0.92. So that the Turkish version of the CD-RISC scale is considered as a valid and reliable measure of resilience.

Data Collection

In this study data collected through a self-administered questionnaire distributed personally to the participants by the researcher in February and March 2016.

Data Analysis

"Statistical Package for the Social Sciences (SPSS) 21 for Windows" software was used to analyze the data. 0.05 was used as the significance level. The compliance of the data to normal distribution was checked with the Kolmogorov-Smirnov test. Comparing the means of two groups, Independent Samples T-Test was conducted if data were normally distributed and Mann-Whitney U Test was conducted if data were not normally distributed. When comparing the means of more than two groups, One-Way Analysis of Variance (ANOVA) was conducted if data were normally distributed and, and Kruskal-Wallis Test was conducted if data were not normally distributed. Thus, Independent Samples T-Test was conducted to compare psychological resilience level by gender and ANOVA was conducted when comparing the psychological resilience level by age groups. Apart from these, "Mann-Whitney U Test" was conducted when comparing the means of two groups and Kruskal-Wallis Test was conducted when comparing the means of more than two groups.

Findings

In this section, the findings of the research are presented in tables and explained together with the results of the analysis in line with the research questions.

Table 2. Psychological Resilience Level of Participants

Items	f	Mean	SD
1. I am able to adapt to change	410	3.78	1.052
2. I have close and secure relationships	410	3.93	.943
3. I believe that sometimes fate or God help me	411	4.04	1.108
4. I can deal with whatever comes my way	410	3.96	.970
5. Pass success gives me confidence for new challenges	412	3.93	1.002
6. I see the humorous side of things	409	3.76	1.059
7. I believe coping with stress strengthens me	411	3.55	1.113
8. I tend to bounce back after illness or hardships	408	3.32	1.193
9. I believe things happen for a reason	411	3.91	1.098
10. I give my best effort no matter what	410	3.90	1.042
11. I believe I can achieve my goals	407	3.98	.954
12. When thing look hopeless, I don’t give up	411	3.73	1.034
13. I know where to turn for help	410	3.62	1.093
14. Under pressure, I can focus and think clearly	409	3.36	1.161
15. I prefer to take the leading in problem solving	405	3.43	1.266
16. I am not easily discouraged by failure	410	3.56	1.122
17. I think of myself as a strong person	407	3.82	1.073
18. I make unpopular or difficult decisions	411	3.57	1.161
19. I can handle unpleasant feelings	412	3.62	1.086
20. I have to act on a hunch	412	3.33	1.205
21. I have a strong sense of purpose	410	3.97	.965
22. I am in control of my life	409	3.68	1.112
23. I like challenges	410	3.59	1.210
24. I work to attain my goals	408	4.19	.912
25. I take pride in my achievements	408	4.32	.918
TOTAL	412	3.75	.642

Table 2 illustrates the descriptive statistics of items of the CD-RISC scale. The item with the highest average is “I take pride in my achievements” (M = 4.32, SD = 0.918) and the item with the

lowest average is "I tend to bounce back after illness or hardships" (M = 3.32, SD = 1.193). The overall average of the scale is 3.75.

Table 3. Comparison of Psychological Resilience Level by Gender

Groups	f	Mean	SD	df	t	p
Male	197	3.7933	.62	403	1.412	.159
Female	208	3.7036	.65			

Table 3 illustrates the Independent Samples T-Test results conducted to compare psychological resilience level of the participants by gender. There was not a significant difference in the psychological resilience level of male (M = 3.79, SD = 0.62) and female participants (M = 3.70, SD = 0.65); t (403) = 1.412, p = 0.159).

Table 4. Comparison of Psychological Resilience Level by Education Status

Groups	f	Mean Rank	df	H	p
Literate	6	168.50	5	10.05	.074
Primary School	28	161.13			
Elementary / K-8	32	165.48			
High School / K-12	73	216.91			
Pre-undergraduate	63	193.41			
Undergraduate or above	201	211.78			

Table 4 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by education status. The Kruskal-Wallis Test showed that there was not a statistically significant difference in psychological resilience level between the different education status (H = 10.05, df = 5, p = 0.074), with a mean rank resilience level of 168.5 for literates, 161.13 for primary school graduates, 165.48 for elementary school graduates, 216.91 for high school graduates, 193.41 for pre-undergraduate graduates and 211.78 for undergraduate or above level graduates.

Table 5. Comparison of Psychological Resilience Level by Age

	Sum of Squares	df	Mean Squares	F	p
Between Groups	1.240	3	.413		
Within Groups	164.658	402	.410	1.009	.388
Total	165.898	405			

Table 5 illustrates the one-way ANOVA results conducted to compare psychological resilience level of the participants by age groups. There was not a statistically significant difference between groups as determined by one-way ANOVA (F (3-402) = 1.009, p = 0.388). Psychological resilience level of age groups from highest to lowest is as follows; 29-39 years (M = 3.80, SD = 0.56), 18-28 years (M = 3.76, SD = 0.61), 40-50 years (M = 3.67, SD = 0.74) and 51-60 years (M = 3.60, SD = 0.69).

Table 6. Comparison of Psychological Resilience Level by Marital Status

Groups	f	Mean Rank	df	H	p	Significant difference
Married	167	189.28	3	10.945	.012	1-2 1-3 3-4
Single	222	215.72				
Divorced	17	265.06				
Widowed	5	131.9				

1: Married, 2: Single, 3: Divorced, 4: Widowed

Table 6 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by marital status. The Kruskal-Wallis Test showed that there was a statistically significant difference in psychological resilience level between the different marital status (H = 10.945, df = 3, p = 0.012), with a mean rank resilience level of 189.28 for married participants, 215.72 for singles, 265.06 for divorced participants and 131.9 for widowed participants. Bilateral comparisons made with the Mann-Whitney U test showed significance differences between, married-single (U = 16148.5, p = 0.030, z = -2.176), married-divorced (U = 909.00, p = 0.015, z = -2.441) and divorced-widowed (U = 15.00, p = 0.031, z = -2.155). These results showed that the level of psychological resilience level of divorced people is higher than the others while the level of psychological resilience level of widows is lower than the others.

Table 7. Comparison of Psychological Resilience Level by Number of Children

Groups	f	Mean Rank	df	H	p
None	242	209.81	2	2.114	.347
1-3	149	193.68			
4 or more	14	184.5			

Table 7 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by number of children. The Kruskal-Wallis Test showed that there was not a statistically significant difference in psychological resilience level between the individuals with different number of children (H = 2.114, df = 2, p = 0.347), with a mean rank resilience level of 209.81 for the participants without children, 193.68 for the participants with 1 to 3 children and 184.5 for the participants with 4 or more children.

Table 8. Comparison of Psychological Resilience Level by Monthly Income

Groups	f	Mean Rank	df	H	p	Significant difference
Less than 500 TL	80	168.19	3	10.275	.016	1-2 1-3 1-4
501-1000 TL	61	210.43				
1001-3000 TL	191	198.69				
More than 3001 TL	65	227.1				

1: Less than 500 TL, 2: 501-1000 TL, 3: 1001-3000 TL, 4: More than 3001 TL.

Table 8 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by monthly income. The Kruskal-Wallis Test showed that there was a statistically significant difference in psychological resilience level between the individuals with different monthly incomes (H = 10.275, df = 3, p = 0.016), with a mean rank resilience level of 168.19

for the participants with less than 500 TL monthly income, 210.43 for the participants between 501-1000 TL income, 198.69 for the participants between 1001-3000 TL income, and 227.1 for the participants more than 3001 TL income. Bilateral comparisons made with the Mann-Whitney U test showed significance differences between the participants with less than 500 TL and 501-1000 TL income (U = 1923.5, p = 0.032, z = -2.150), participants with less than 500 TL and more than 3001 TL income (U = 6466.0, p = 0.046, z = -1.995), and participants with less than 500 TL and 1001-3000 TL income (U = 1826.0, p = 0.002, z = -3.078). These results showed that the level of psychological resilience level of low income group (less than 500 TL) differs from the other 3 groups.

Table 9. Comparison of Psychological Resilience Level by the Status of Being Experienced a Disaster

Groups	f	Mean Rank	Sum of Ranks	U	p
Yes	140	210.34	29447	18223.0	.552
No	270	202.99	54808		

Table 9 illustrates the Mann-Whitney U test results conducted to compare psychological resilience level of the participants by the status of being experienced a disaster. From the Table 9, it can be concluded that psychological resilience level of the participants who have faced a disaster was not significantly different than the participants who have not faced a disaster (U = 18223.0, p = 0.552).

Table 10. Comparison of Psychological Resilience Level by the Status of Having Natural Disaster Insurance

Groups	f	Mean Rank	df	H	p
Yes	116	223.15			
No	228	198.23	2	3.831	.147
Not sure	65	196.37			

Table 10 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by the status of having natural disaster insurance. The Kruskal-Wallis Test showed that there was not a statistically significant difference in psychological resilience level between the three groups; individuals who have a natural disaster insurance, who have not and who were not sure whether they have a natural disaster insurance or not (H = 3.831, df = 2, p = 0.147).

Table 11. Comparison of Psychological Resilience Level by the Status of Having a Chronic Disease

Groups	f	Mean Rank	Sum of Ranks	U	p
Yes	42	172.73	7254.5	6351.5	.065
No	366	208.15	76181.5		

Table 11 illustrates the Mann-Whitney U test results conducted to compare psychological resilience level of the participants by the status of having a chronic disease. The Mann-Whitney U test showed that there was not a statistically significant difference in psychological resilience level between the those with and without chronic disease (U = 6351.5, p = 0.065, z = -1,844).

Table 12. Comparison of Psychological Resilience Level by the Status of having Household Emergency Plan

Groups	f	Mean Rank	Sum of Ranks	U	p

Yes	95	250.04	23753.5	10731.5	.000
No	315	192.07	60501.5		

Table 12 illustrates the Mann-Whitney U test results conducted to compare psychological resilience level of the participants by the status of having household emergency plan. The Mann-Whitney U test showed that there was a statistically significant difference in psychological resilience level between the participants with and without household emergency plan (U = 10731.5, p = 0.000, z = -4.180). Those who have a household emergency plan have a higher level of psychological resilience.

Table 13. Comparison of Psychological Resilience Level by the Status of Enrollment in an Organization to Volunteer in a Disaster Situation

Groups	f	Mean Rank	Sum of Ranks	U	p
Yes	43	259.67	11166	5647.0	.002
No	369	200.3	73912		

Table 13 illustrates the Mann-Whitney U test results conducted to compare psychological resilience level of the participants by the status of enrollment in an organization to volunteer in a disaster situation. The Mann-Whitney U test showed that there was a statistically significant difference in psychological resilience level between the participants who were enrolled and not enrolled in an organization to volunteer in a disaster situation (U = 5647.0, p = 0.002, z = -3.095). Those who enrolled in an organization to volunteer in a disaster situation have a higher level of psychological resilience.

Table 14. Comparison of Psychological Resilience Level by the Status of Living with Family, Housemate and Alone

Groups	f	Mean Rank	df	H	p
With Family	277	195.88			
With Housemate	79	220.37	2	6.001	.050
Alone	54	233.1			

Table 14 illustrates the Kruskal-Wallis Test results conducted to compare psychological resilience level of the participants by the status of living. The Kruskal-Wallis Test showed that there was not a statistically significant difference in psychological resilience level between the three groups; individuals who lives with their family, who lives with housemates and who lives alone (H = 6.001, df = 2, p = 0.050).

Table 15. Comparison of Psychological Resilience Level by the Status of Taking Disaster Education

Groups	f	Mean Rank	Sum of Ranks	U	p
Yes	198	223.62	44276.5	14826.5	.000
No	199	174.51	34726.5		

Table 15 illustrates the Mann-Whitney U test results conducted to compare psychological resilience level of the participants by the status of taking a disaster education. The Mann-Whitney U test showed that there was a statistically significant difference in psychological resilience level between the participants who have taken a disaster education and who have not (U = 14826.5, p = 0.000, z = -4.265). Those who took a disaster education have a higher level of psychological resilience.

Discussion, Conclusion and Suggestions

In this study, no significant difference on psychological resilience level was found between genders. Similarly, in a study conducted on academic staff, it was found that the level of psychological resilience does not show a statistically significant difference according to gender, but the level of psychological resilience of females were higher than the males (Ülker Tümlü & Recepoğlu, 2013). In another study conducted on individuals who have experienced the 1999 Marmara earthquakes, it was found that the level of psychological resilience does not show a statistically significant difference compared to gender, but the level of psychological resilience of females is higher (Karaırmak & Güloğlu, 2014). Differently, in the study conducted on students between the ages of 13-17 after the earthquake in China, a statistically significant difference on psychological resilience levels of male and female students and the level of psychological resilience of males was higher than females (Yu et al., 2011). According to the study conducted on individuals aged 20 and over, males are more psychologically resilient (Ni et al., 2016). In another a study conducted on the general population in Australia, males were found to be more resilient (Liu et al., 2015). In general, it is stated in the literature that psychological resilience differs according to gender. In order to better evaluate psychological resilience in relation to gender, factors affecting the psychological resilience of males and females should be studied. In this way, more reliable results will be obtained regarding which group will be more psychologically affected in extraordinary situations such as disasters.

On the other hand, it was determined that the level of psychological resilience does not show a significant difference according to the educational level, but the individuals who were graduated from a high school or above are more resilient. This result mostly conflicts with the literature. According to the research conducted in individuals aged 20 and over, it was found that those with a high level of education had a high level of psychological resilience (Ni et al., 2016). In another study conducted six months after a terrorist attack, it was determined that the educational status did not affect psychological resilience (Bonanno et al., 2007). In a study carried out five years after a disaster, it was found that individuals with higher education levels were healthier and showed a faster recovery than those with a low level of education (Frankenberg et al., 2013). In general, according to the literature, it can be said that those who have a high level of education are more psychologically resilient. Theoretically, it can also be said that individuals with higher education levels will be less affected by disasters because they could find accurate and reliable information about disasters more easily so they

will have more advantages in getting psychological support before and after disasters, and will thus be less psychologically affected by disasters.

According to results, it was found that the level of psychological resilience does not show a statistical and significant difference with respect to the age group, but those who are 40 years old and over are less resilient. According to the study conducted on individuals between the ages of 13-17 after the earthquake in China, psychological resilience shows a significant difference according to age and it has been determined that the young ones have a higher level of psychological resilience (Yu et al., 2011). In another study conducted in individuals aged 20 and over, it was stated that the most resilient group was the ones who were between 20-39 years old and the least resilient group was the ones who were 65 and over (Ni et al., 2016). In a study conducted on university students between the ages of 18 and 30, it was found that the level of psychological resilience has a statistically significant difference compared to age, and that individuals over 25 years of age had a lower level of psychological resilience (Notario-Pacheco et al., 2011). In another study, which was found that the level of psychological resilience did not show a statistical difference according to age, it was found that the resilience level academic staff who were more than 51 years old has the highest resilience level (Ülker Tümlü & Recepoğlu, 2013). In general, according to the literature, it can be said that young people are psychologically more resilient, so that these people will be less psychologically affected by disasters and will recover themselves more quickly.

It was found that psychological resilience showed a statistically significant difference according to marital status in this study. It has been determined that widows are the most psychologically resilient group and single people are more resilient than married people. In their studies, Ülker Tümlü and Recepoğlu (2013) stated that the psychological resilience level did not show a statistically significant difference compared to the marital status, however it was found that the single academic staff had higher psychological resilience level. According to the research conducted on teachers, psychological resilience does not show a statistically significant difference compared to marital status, however, it was determined that single teachers have higher psychological resilience level (Sezgin Nartgün & Mor, 2015). Related to this, Wade et al. (2013) reported that individuals whose spouses died had a lower level of anger, fear and anger than divorcees, singles, married people, and separates. In general, literature specifies that single people are more psychologically resilient than the married people. It can be said that singles will be less affected psychologically by disasters.

Results of this study showed that psychological resilience does not show a statistical difference according to the number of children owned, but the level of psychological resilience decreases with the increase in the number of children. It can be said that those who have more children will be more affected psychologically.

According to results, it was determined that the level of psychological resilience shows a statistically significant difference compared to monthly income and the group with the highest monthly income is more psychologically resilient. Similarly, Ni et al. (2016) reports that the groups with high monthly income are also psychologically resilient. Lowe et al. (2015), in their post-disaster study, stated that depression level is low in individuals with high income level who are not psychologically affected by the disaster. In the same study, it was reported that there was no relationship between the economic status of those who were psychologically affected by the disaster and the of depression level (Lowe et al., 2015). In another study conducted after an earthquake and tsunami, it was determined that the employees in a job are more psychologically resilient (Kukihara et al., 2014). In the study conducted on nursing students, it was determined that the level of psychological resilience shows a statistically significant difference according to the economic situation and the students with good economic status have higher psychological resilience (Güngörmüş et al., 2015). According to the literature, it can be said that income level has a positive effect on psychological resilience. It can be said that people with good financial conditions can easily tolerate economic damage caused by disasters than the others.

On the other hand, it has been determined that level of psychological resilience does not have a statistically significant difference compared to disaster exposure in this study, however those who have experienced a disaster are more psychologically resilient. In a study conducted on 34 people who experienced an earthquake in Van in 2011 and whose houses were damaged, it was found that psychological resilience plays a protective role against post-traumatic stress disorder symptoms (Sakarya & Güneş, 2013). It can be said that those who are previously experienced a disaster will be possibly less affected by disasters than the others.

Results of this study indicated that although those with natural disaster insurance were found to be more psychologically resilient, there was no statistically significant difference between those who had insurance and those who did not. In a study conducted 6 months after a terrorist attack, it was found that those who were not economically affected by this attack were more psychologically resilient (Bonanno et al., 2007). It can be said that those who have natural disaster insurance will face less issues on solving accommodation problems after a disaster so that they will be less affected psychologically.

Although the psychological resilience level of those who do not have chronic disease is high in this study, it was found that the level of psychological resilience does not show a statistically significant difference compared to the status of having chronic disease. In their study conducted on university students, Yurdakul and Üner (2015), reported that the individuals with a chronic disease have higher level of psychological resilience, however the level of psychological resilience did not found to be significantly different compared to ones who does not have any chronic diseases. In the

study conducted after the earthquake and tsunami in Japan, it was found that people with high healthy living standards had higher levels of psychological resilience (Kukihara et al., 2014). In their study conducted on individuals with psychological disorders, Jung et al. (2012) found that individuals with psychological disorders had a lower level of resilience.

In general, literature states that individuals without chronic disease are more psychologically resilient to disasters. It can be said that those with chronic disease will be more psychologically affected by disasters because they are more sensitive both physically and spiritually depending on the type and severity of the disease.

Results of this study indicated that the level of psychological resilience showed a statistically significant difference according to the status of enrollment in an organization to work voluntarily in a disaster situation. Those who enrolled in an organization to work in a disaster were more psychologically resilient. Similarly, Brown et al. (2012) stated that volunteers in any organization are more psychologically resilient. Brooks et al. (2015) reports that personnel working in disasters are adversely affected by difficulties and difficult living conditions before, during and after the disaster. In their study conducted on volunteers working during a disaster after a devastating earthquake in Haiti, Charlie et al. (2014) found that volunteering increases resilience. These volunteers were also reported a steady increase in their personal resilience, interpersonal relationships and social ties (Carlile et al., 2014). It can be said that that those who feel psychologically strong are willing to work in disaster situations, so that volunteers can help other victims more because they will be less psychologically affected by disasters.

Although the level of psychological resilience of those who live alone at home is high in this study, it was found that the level of psychological resilience does not show a statistically significant difference compared to living conditions; living with family, housemate and alone.

A statistically significant difference was found between disaster education status and psychological resilience level in this study. Those who received disaster education had a higher level of psychological resilience. Similarly, in a study conducted in India, it was found that taking disaster education is effective in reducing the level of anxiety towards disasters (Mishra & Suar, 2012). It can be said that those who receive disaster education will be less psychologically affected by disasters because they will fight the effects of disasters better.

When evaluated in general, it can be said that psychological resilience level of the individuals participating in the research is above the average, but also could be better. In summary, results showed that the most psychologically resilient people are males, high school graduates, individuals between the ages of 29-39, divorcees, those who do not have children, those with monthly income of more than

3001 TL, those with natural disaster insurance, those who are previously experienced a disaster and those who took a disaster education.

This study has its own limitations like every other study. First, this study is based solely on quantitative data obtained through a self-report survey so that it may be expanded by conducting in-depth analysis via qualitative methods. Second limitation of this study is that sampling was used for data collection, so that, larger samples or actual population represent more accurate results. In general, this study extends our knowledge on psychological resilience against disasters.

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