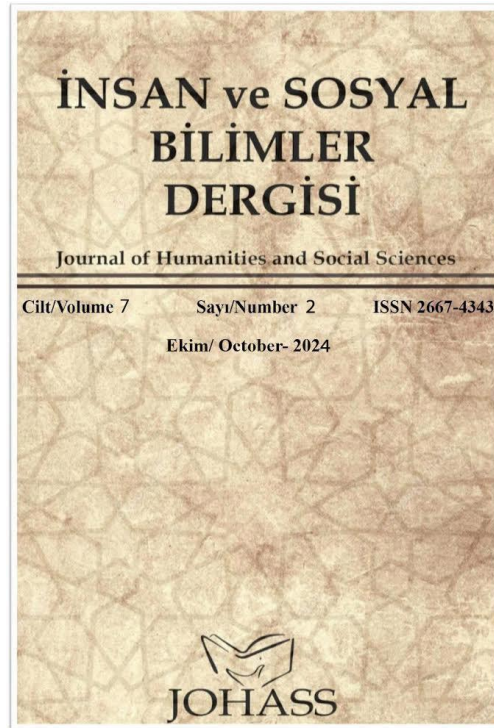


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**Earthquake Anxiety & Self-Compassion Skill: A Study on Their
Demographic Differences & Relationships**

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Earthquake Anxiety & Self-Compassion Skill: A Study on Their Demographic Differences & Relationships

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Abstract

This study aims at analyzing the relationship between earthquake anxiety and self-compassion skill, while evaluating gender differences. Data from a total of 273 participants were used to assess the earthquake anxiety and self-compassion skill levels of the participants. The findings indicate that the earthquake anxiety is higher among women but the self-compassion skill is more apparent among men. In the reliability analysis performed for the earthquake anxiety and self-compassion skill measurements; Cronbach's alpha coefficients were used. Accordingly, the coefficients were calculated as (0.98) for earthquake anxiety scale and (0.84) for self-compassion scale. It was revealed that both scales had high reliability coefficients. Correlation analysis results indicate that the individuals with high earthquake anxiety have lower self-compassion skill. In addition, it was observed that the earthquake anxiety increased according to the risk magnitude, that is to say, it was found that the earthquake anxiety were more apparent in the individuals residing in the areas at high earthquake risk. The regression model established between self-compassion scale and earthquake anxiety scale were also found significant. These findings shed a light to the further studies to be performed to better understand the complex relationship between earthquake anxiety and self-compassion skill. This study makes an important contribution to the fact that psychological support services and crisis intervention programs can reach to the individuals more efficiently, taking the relationship between earthquake anxiety and self-compassion skill.

Keywords: Earthquake anxiety, self-compassion skill, correlation, earthquake risk

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Introduction

The earthquake anxiety is addressed as an important topic among the psychological effects of the natural disasters on humans. Studies on this issue focus on understanding how the earthquakes affect the emotional reactions such as anxiety, fear and stress in humans and determining their strategies of coping with these reactions.

A study performed by Norris et al. (2002) shows that the post-earthquake traumatic stress can result in long-term psychological effects on the individuals. It is stated that this post-earthquake stress can cause serious psychological problems such as post-traumatic stress disorder (PTSD). The study emphasizes the importance of the post-earthquake psychological support services. It also emphasizes that these services are essential in order to provide the affected individuals with emotional and mental support, facilitate the post-traumatic recovery process and reduce the long-term negative effects.

A meta-analysis carried out by Wang et al. (2013) revealed clearly that the psychological resilience level of the individuals who stayed under the effect of the earthquake is an important protective factor on the earthquake anxiety. This finding underscores the efficiency of the psychological resilience improvement programs in order to cope with the earthquake anxiety. Psychological resilience refers to the individuals' ability to cope with the challenges more resiliently and increase their resistance against the negative situations. Thus, it is stated that the efforts to increase the psychological resilience of the society against the effects of the earthquake and other natural disasters must be an important part of the emergency management strategies.

A study carried out by Chang et al., in 2015 shows that the risk level perceived by the individuals before and after an earthquake plays a determinative role on the earthquake anxiety. This finding emphasizes that pre-earthquake preparation and risk perception is important in reducing the earthquake anxiety and that the societies' being prepared against natural disasters before an earthquake and taking precautions to increase the risk perception can reduce the psychological effects that may be suffered following the disaster.

It also put forward that the earthquake anxiety can vary depending on the demographic factors such as age, gender, educational background and socio-economic state. This finding is important to be able to understand how the earthquake anxiety varies between different groups (Çokgen et al., 2018).

Self-compassion takes love, compassion, empathy and tranquility as basis as one of the basic concepts of Buddhist teaching (Wallace and Shapiro, 2006). According to the Buddhist philosophy, sufferings and challenges are a natural part of human life and everyone can face such experiences (Rubin, 2013). What matters is to cope with such challenges in a healthy manner. A wise life requires coping with the challenges effectively (Thurman, 2006). Self-compassion stands out as a healthy way of coping with such challenges (Neff, 2003a).

Self-compassion consists of three main components, namely self-kindness, awareness of the common sharing and mindfulness, and each component contains positive and negative aspects (Costa et al., 2016). Self-kindness refers to the person's displaying a caring, kind and affectionate attitude against oneself (Neff, 2003b). On the contrary, self-judgment refers to a person's having a self-accusatory and self-judging attitude against oneself. The second component refers to the acceptance that the challenges and sufferings experienced are a natural part of being human (Neff, 2003a). This involves the understanding of the individual that s/he shares his/her own experiences with other people and such experiences are universal. Isolation, on the other hand, refers to an individual's consideration that s/he is going through such experiences only by him/herself. The third component, which is mindfulness, involves the instantaneous acceptance of feelings and experiences without judging them, and being mindful of this moment (Brown and Ryan, 2003; Neff, 2003a). Excessive identification refers to the individual's excessive identification with his or her emotions and considering these emotions as constant and unchanging.

The studies performed show that there is a positive relationship between self-compassion and life satisfaction (Bluth & Blanton, 2012), happiness and optimism (Neff, Rude & Kirkpatrick, 2007), need satisfaction, self-respect and self-acceptance (Neff, 2003b), and psychological resilience (Neff & McGehee, 2009). In the studies performed in our country, it was found that the self-compassion is in a positive relationship with the concepts predicting positive mental health such as life satisfaction (Tel & Sarı, 2016), self-improving humor and communication skills (Akyol, 2011), social support (Akkaya, 2011), mindfulness and bouncing power (Aydın Sünbül, 2016) as well as positive mother, father and self-perception (Andiç, 2013). However, it put forward that there was a negative relationship between self-compassion and depression, anxiety, worry, anger, stress (Andiç, 2013; Temel, 2015), negative Internet usage (Yiğit, 2015), emotion regulation difficulty (Aydın Sünbül, 2016), solitude (Akin, 2010b) and cognitive distortion (Akin, 2010a). The studies performed abroad also found negative relationships between self-compassion and depression (Reas, 2010), anxiety (Pauley &

McPherson, 2010), post-traumatic stress disorder (Thompson & Waltz, 2008) and eating disorders (Ferreira, Pinto-Gouveia & Duarte, 2013). Based on these findings, the self-compassion can be said to be a variable that determines the positive mental health (Neff, 2003a). Self-compassion skill plays an important role in psychotherapeutic processes, as well. The study by MacBeth and Gumley (2012) shows that the improvement of self-compassion especially in the therapy methods such cognitive-behavioral therapy improves the treatment results. In this context, improvement of the self-compassion skill in the therapy processes is an important goal of the therapists. The self-compassion skill was also associated with the relationship quality. A study performed by Yarnell et al. (2015) shows that the individuals with high self-compassion level have healthier and more satisfactory relationships. This finding suggests that the self-compassion skill contributes to the strengthening of the interindividual bonds and the formation of positive relationship dynamics. The self-compassion skill is an important ability that increases the emotional well-being of the individuals, supports the psychological resilience and facilitates the establishment of healthy bonds in the relationships.

Relationship Between Self-Compassion Skill and Anxiety

The relationship between self-compassion skill and anxiety is an important field of research in the psychology literature. The self-compassion is defined as a person's ability to develop an understanding, accepting and loving attitude towards oneself, while anxiety involves the worry and stress feelings related to the future uncertainties and negative events. The relationship between these two concepts may lead to important consequences in terms of emotional well-being, stress management and psychological resilience of the individuals.

A study performed by Neff and McGehee (2010) analyzed the relationship between the self-compassion skill among adolescents and young adults, and psychological resilience. The findings show that the high self-compassion level is associated with the increase in the psychological resistance. This suggests that the self-compassion skill can help to cope with the stress more efficiently.

In addition, a study performed in 2016 addressed the relationship between the self-compassion level between university students, and exam anxiety. The study shows that as the self-compassion skill increases, the exam anxiety decreases and the exam attitudes act as a mediator in this relationship. This finding indicates that the self-compassion skill can be an important factor in coping with significant stress sources such as exam anxiety (Körükçü and Ünal, 2016).

Another study examined the relationship between the self-compassion skill and the anxiety level of university students through mindfulness. These findings show that the relationship between self-compassion and anxiety is partially explained by the mindfulness skills. This suggests that the self-compassion skill can be an efficient strategy in reduction of anxiety levels along with mindfulness-based interventions (Zeller and Yuval, 2019).

In their studies in 2011, Raes et al. addressed the relationship between the self-compassion skill and various psychological symptoms. The findings suggest that the high level of self-compassion is negatively associated with the symptoms such as anxiety, depression and stress. This finding states that the self-compassion skill is an increasing factor for the general psychological well-being. Considering the positive consequences such as reduction of the anxiety levels and increase in the psychological well-being as the self-compassion skill increases, it is thought that the improvement and strengthening of the self-compassion skill may play an important role in increasing in the psychological well-being.

Relationship Between Self-Compassion Skill and Earthquake Anxiety

The relationship between self-compassion skill and earthquake anxiety is a gradually growing field of research in the psychology literature. The self-compassion is defined as an individual's ability to develop an understanding, accepting and loving attitude towards oneself, while earthquake anxiety involves the worry, fear and stress feelings related to the potential earthquake hazards in the future.

One of the studies performed on this subject examined the effect of the self-compassion skill on the earthquake anxiety. According to the findings of the study, it was observed that the individuals with high self-compassion level had lower levels of earthquake anxiety (Özdemir & Yıldırım, 2020).

However, the role of pre- and post-earthquake self-compassion skill on the earthquake anxiety was addressed. In a study performed, it was found that the earthquake anxiety reduced as the self-compassion skill increased and the psychological adaptation after earthquake was better (Göksu & Gençöz, 2017). Another study examined the relationship between the self-compassion skill and the earthquake anxiety through mindfulness skills. The findings show that the relationship between self-compassion and earthquake anxiety can partially be explained by the mindfulness skills (Zeller & Yuval, 2019).

- **H₁:** There is a relationship between earthquake anxiety and self-compassion.

- **H₂:** The earthquake anxiety and self-compassion skill vary in people with psychological diagnosis.
- **H₃:** The earthquake anxiety and self-compassion skill vary according to gender.
- **H₄:** The earthquake anxiety and self-compassion skill vary according to earthquake risk zone.
- **H₅:** The earthquake anxiety and self-compassion skill vary according to ages.
- **H₆:** The self-compassion skill predicts the earthquake anxiety.

Method

Model

In this study, without any intervention on the variables of the research. The “relational survey” model, which involves determining the existing situation, was used. For this study, online form was used for data collection process. The data collection process was performed through online platforms in order to ensure the comfort and easy access of the participants. The survey was prepared in accordance with confidentiality and reliability principles and was ethically approved.

Sample

The sample of the study is consisted of the participants invited via online form between March 2023 and April 2023. The power analysis was used to determine the sample of the study. Given the effect size ($|\rho| = 0.30$), I. type error probability $\alpha = 0.05$ and power of the test $1 - \beta = 0.80$, the sample size was calculated as 112. Considering the data loss, the survey study was performed with 273 people.

Data Collection Tools

Within the scope of the study, “Earthquake Anxiety Scale” was used to measure the earthquake anxiety, and “Self-Compassion Scale” was used to determine the self-compassion level. The earthquakes do not only cause physical injury, but also increase the risk of mental health issues by having a negative effect on the physical and psychological aspects of the survivors (Kotozaki & Kawashima, 2012). The psychological problems such as depression and anxiety are observed at a high rate among people exposed to earthquake (Zhang et al., 2011).

Measurement of such psychological problems is clinically important. There are many measurement tools for anxiety.

The earthquake anxiety scale used within the scope of the study was developed by Fatih Bal and Ömer Akgül in 2023 in Turkish. The Earthquake Anxiety Scale is consisted of 34 items and has 5-point Likert type rating consisting of the options “not agree at all, not agree, neutral, agree and strongly agree”. The lowest score to be obtained from each item is 1 and the highest score is 5. The lowest score obtained in total items is 34, and the highest score is 170. According to the scale, the high scores show that the earthquake anxiety scores are high, and the low scores show that the earthquake anxiety scores are low.

The self-compassion appears as an alternative approach to self-respect addressed as a main criterion of psychological health (Neff, 2003a). The self-compassion that is associated with the positive outcomes of self-respect also draws attention of the researchers as it does not involve the criticized aspects of self-respect. For example, self-compassion was found to be significantly related to the positive psychological health variables whereas it was not found to be related to the narcissistic personality traits to which high level of self-respect is related (Neff, 2003b). The self-compassion skill scale was developed by Neff (2003b). The scale is consisted of 26 items and 6 factors.

These factors were determined as self-caring/self-kindness, self-judgment, being aware of the sharing, isolation, consciousness and over-identification. Turkish validity and reliability studies of self-compassion scale were carried out by Akın, Akın and Abacı (2007). The self-compassion scale was shortened as “Self-Compassion Scale Short Form” by Raes, Pommier, Neff and Van Gucht (2011), starting from the idea that it shall be more useful. In this short form, the total score to be obtained from the scale is used (Raes, Pommier, Neff and Van Gucht, 2011). The Self-Compassion Scale Short Form is consisted of the items taken from Self-Compassion Scale of 26 items (Neff, 2003b). While creating the short form, two items from each sub-component of self-compassion were taken. The positive ones among these sub-components are Self-Kindness, Awareness of Sharing, Mindfulness and the negative ones are Self-Judgment, Isolation and Over-Identification. The Turkish adaptation form of the scale is consisted of 11 items and one single factor (Yıldırım, M. & Sarı, T., 2018). For the answers given to the scale, 5-point Likert-type rating was used, with 1 meaning always and 5 meaning never. The high scores obtained from the scale show that the self-compassion skill is high.

Ethics Approval

The survey used for the research was granted ethics approval by the ethics committee of Istanbul Gelişim University with the decision dated 10-04-2023 and no. 2023-05-108.

Statistical Analysis

The data collected within the scope of the study were analyzed by version 24.00 of SPSS package program. Within the scope of the analysis, frequency distribution tables were prepared to describe the demographic characteristics. Correlation Analysis was used for the analysis of relationship between scales; and Regression Analysis was used to reveal the cause and effect relationship. In addition, t-tests and analysis of variance were applied for the analysis of the differences in earthquake anxiety and self-compassion skill according to the demographic characteristics.

Findings

Demographic Characteristics

Table 1

Demographic Characteristics of Participants

		N	% N
Gender	female	183	67.5%
	male	88	32.5%
Psychological Diagnosis	yes	39	14.4%
	none	232	85.6%
Earthquake Risk State	very high risk	126	46.2%
	moderate risk	18	6.6%
	high risk	90	33.0%
	low risk	6	2.2%
Age Ranges	very low risk	33	12.1%
	18 to 28	243	89.0%
	29 to 39	21	7.7%
	40 to 50	6	2.2%
	62 and above	3	1.1%

67.5% of the participants enrolled in the study were females. The number of the people who reside in very high risky areas is 127. The people with no psychological diagnosis constitute 85.6% of the sample. In addition, considering the age ranges, 89% are seen to be between 18 and 28 years of age.

Reliability and Internal Consistency

The validity of the scales refers to whether the behavior intended to be measured reflects the actual state, and reliability refers to the fact that the scale yields the same results in different times and under different conditions. Reliability can also be considered as an indicator of how consistently and consciously the questions in the scale are answered. (Özdoğan and Tüzün, 2007, p.644). Cronbach's Alpha coefficient was used for the reliability analysis in this study. Cronbach's Alpha value of 0.70 and above shows that the scale is reliable.

Table 2

Reliability Analysis of the Scales Used

	Scale	Number of items	Reliability Coefficient
1	Earthquake Anxiety	34	0.976
2	Self-compassion Skill	11	0.841

The reliability coefficients of the scales used in the study were given in Table 2. Accordingly, the “Earthquake Anxiety” scale consisting of 34 items was found to be highly reliably with a Cronbach’s Alpha value of (0.976) and the “Self-Compassion Skill Short Form” scale was found to be highly reliably with a Cronbach’s Alpha value of (0.841).

Correlation Analysis

Correlation analysis is used to examine the relationship between variables. The correlation coefficient determines the extent of the relationship between variables and whether this relationship is significant or not. It also gives insight into the direction of the relationship (Büyüköztürk, 2018). The correlation analysis results of the scales were shown in Table 3.

Table 3

Correlation Analysis Results

		WA	SD	1	2	3
1	Earthquake Anxiety	100.5275	35.90162	1		
2	Self-Compassion Skill	33.6287	8.55706	-.386	1	

*p<0.05 **p<0.01

According to the results of the correlation analysis performed for the scales used in the study, there is a significant ($p<.05$) relationship between earthquake anxiety and self-compassion skill (-.386). As the earthquake anxiety increases, the self-compassion skills of the

individuals decrease. As the self-compassion skill increases, the earthquake anxiety levels of the individuals decrease. Accordingly, the hypothesis “H1: There is a relationship between earthquake anxiety and self-compassion”, which is one of the hypotheses of the study, is accepted.

Regression Analysis

Regression analysis characterizes the relationship of at least two variables as dependent and independent variable and describes the cause and effect relationship as mathematical model. If there is one dependent and one independent variable in the analysis, the method is simple regression analysis, and if the relationship between dependent and independent variable is linear, it is called as linear regression analysis (Büyüköztürk, 2018). The regression analysis results for the variables used in the study are shown in Table 4.

Table 4

Regression Model Between Variables

Model		U. Coefficients		S. Coefficients	t	p	R ²
		B	Std. Error	Beta			
1	Constant	154.486	8.132		18.997	.000	14.9%
	Self-compassion	-1.612	.234	-.386	-6.878	.000	

*p<0.05 **p<0.01

According to the analysis results in Table 4, it is seen that there is a significant result between self-compassion and earthquake anxiety. Model R2 value (14.9%) shows that the self-compassion variable accounts for about 14.9% of the variance of the dependent variable. This finding indicates that the self-compassion concept may have an important effect on the outcomes examined. The effect of “self-compassion skill” on the “earthquake anxiety” variable is negative ($\beta=-1.612$; $p<0.01$) and significant. As the self-compassion skill increases, the earthquake anxiety reduces. t-value of the self-compassion variable was found to be -6.878 and p-value was found to be 0.000. These values show that the self-compassion coefficient is statistically significant.

Regression model is Earthquake Anxiety= 154.486 – 1.612*Self-compassion. The analysis result supports the “H6: The self-compassion skill predicts the earthquake anxiety.” hypothesis.

Difference Tests

t-tests and analysis of variance were used for the analysis of differences based on the variables used in the study. The independent sample t-test is a parametric test method used to evaluate the significance of the difference between two averages calculated among subgroups of a specific group (Büyüköztürk, 2017). ANOVA (analysis of variance) is a method used to determine the significance of the difference between mean values in two or more groups. If the difference between groups is found to be statistically significant as the result of ANOVA, Post-Hoc statistics can be used to determine the origin of this difference (Büyüköztürk, 2017).

Table 5

Difference Analyses Based on Gender

		N	WA	SD	t	p
Earthquake Anxiety	Female	183	107.0328	34.35383	4.609	.000
	Male	88	86.3068	35.29786		
Self-Compassion Skill	Female	183	34.8197	4.43825	-2.979	.000
	Male	87	36.6322	5.13111		

*p<0.05 **p<0.01

The gender-based difference tests of the scales used in the study (p<0.01) were found to be significant. Accordingly, the earthquake anxiety is higher among women. The women are more anxious. Regarding the self-compassion skills, on the other hand, men were found to have higher self-compassion scores than women. The hypothesis formed as “H3: The earthquake anxiety and self-compassion skill vary according to gender.” was accepted.

Table 6

Difference Analyses Based on Psychological Diagnosis

		N	WA	SD	t	p
Earthquake Anxiety	Have psychological diagnosis	39	111.3846	36.03844	2.079	.039
	Have no psychological diagnosis	232	98.5172	35.72247		
Self-Compassion Skill	Have psychological diagnosis	39	33.3846	5.62707	-2.931	.004
	Have no psychological diagnosis	231	35.7706	4.53146		

*p<0.05 **p<0.01

Significant differences were found in the scales used in the study in terms of participants with and without psychological diagnosis. Accordingly, the earthquake anxiety scores of the participants with psychological diagnosis were found higher. The self-compassion skill is, on the other hand, higher in the participants with no psychological diagnosis. The hypothesis “H2: The earthquake anxiety and self-compassion skill vary in people with psychological diagnosis.” was accepted.

Table 7

Difference Analyses Based on Earthquake Risk Zone

	Risk Zone	N	WA	SD	F	p
Earthquake Anxiety	very high risk	126	106.4048	35.78808	2.860	0.024
	moderate risk	18	96.8333	45.09369		
	high risk	90	99.1667	31.70342		
	low risk	6	70.5000	30.12474		
	very low risk	33	89.2727	38.55781		
Self-Compassion Skill	very high risk	125	36.0000	4.03213	7.239	0.005
	moderate risk	18	31.3333	6.73883		
	high risk	90	34.6333	4.64818		
	low risk	6	35.5000	1.64317		
	very low risk	33	37.9091	5.09512		

*p<0.05 **p<0.01

ANOVA results are shown in Table 7. Accordingly, a statistically significant difference is observed on the “Earthquake Anxiety” (F=2.860; p<0.05) based on the earthquake risk zone magnitude. According to Post-Hoc tests, the people residing in an area at a high risk of earthquake have a higher level of earthquake anxiety than the people residing in a very less risky area. According to the magnitude of the earthquake risk zone, significant differences were found in “Self-compassion Skill” levels, too (F=7.239; p<0.05). According to the post-Hoc tests; as the magnitude of the earthquake risk zone decreases, the self-compassion levels of the participants increase. However, the self-compassion levels of the participants in the very risky area were found to be the highest. According to these results, the hypothesis “H4: The earthquake anxiety and self-compassion skill vary based on the risk zone.” was accepted.

Table 8

Difference Analyses Based on Earthquake Risk Zone

Age range	N	WA	SD	F	p
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Earthquake Anxiety	18 to 28	243	102.0617	34.12920	2.090	0.049
	29 to 39	21	90.1429	46.85327		
	40 to 50	6	95.0000	58.05859		
	62 and above	3	60.0000	.00000		
Self-Compassion Skill	18 to 28	243	35.1564	4.65862	3.244	0.023
	29 to 39	20	37.7000	5.69487		
	40 to 50	6	38.5000	3.83406		
	62 and above	3	39.0000	.00000		

*p<0.05 **p<0.01

ANOVA results are shown in Table 8. Accordingly, a statistically significant difference is observed on the “Earthquake Anxiety” ($F=2.090$; $p<0.05$) based on the age ranges. According to Post-Hoc tests, the earthquake anxiety of the people between 18 and 28 years of age was found higher than the ones at and above 62 years of age. According to the age range, significant difference was found in “Self-compassion Skill” levels, too ($F=3.244$; $p<0.05$). According to Post-Hoc tests, the self-compassion skill of the people at and above 62 years of age was found higher than the ones between 18 and 25 years of age. According to these results, the hypothesis “H5: The earthquake anxiety and self-compassion skill vary depending on the ages.” was accepted.

Discussion and Result

This study examined the relationship between the earthquake anxiety and self-compassion skills and evaluated the effects of various demographic factors on these variables. The findings obtained show consistency with the similar studies in the literature. In the study performed by Biber and Ellis (2017), a negative relationship was found between anxiety levels and self-compassion, and the findings of this study verify this relationship. It was found that the self-compassion skills of the individuals reduce as the earthquake anxiety increases.

Cronbach’s Alpha values indicating the high reliability of the scales used in the study emphasizes the robustness of the measurements (0.976 for Earthquake Anxiety Scale and 0.841 for Self-Compassion Skill Short Form). These results support the previous studies emphasizing the validity of the measurement tools (Neff, 2003; Lovibond & Lovibond, 1995).

The negative correlation between earthquake anxiety and self-compassion skill ($r = -0.386$, $p < .05$) shows that the self-compassion skills reduce as the earthquake anxiety increases. Likewise, it was seen that earthquake anxiety levels reduced as the self-compassion skills increased. This finding supports the hypothesis “H1: There is a relationship between earthquake anxiety and self-compassion”. This result is consistent with Neff and Germer (2013), who

demonstrate the positive effects of self-compassion on the stress and anxiety. Similarly, the studies performed by Gilbert and Procter (2006) also showed that self-compassion played an important role in the management of anxiety disorders.

Regression analysis shows that the self-compassion skills have a negatively significant effect on the earthquake anxiety ($\beta = -1.612$, $p < .05$). This effect with the t-value of (-6.878) and p-value of (0.000) are statistically significant. Regression model: (Earthquake Anxiety = $154.486 - 1.612 * \text{Self-Compassion}$) verifies the hypothesis “H6: The self-compassion skill predicts the earthquake anxiety”. This shows that the interventions to increase the self-compassion may be effective in reducing the earthquake anxiety. This result also supports the studies by Allen and Leary (2010), who research the positive effects of self-compassion on psychological well-being.

When the gender differences are analyzed, it was found that the earthquake anxiety of women was higher than that of men, and that men had higher self-compassion scores than women. This finding supports the hypothesis “H3: The earthquake anxiety and self-compassion skill vary according to gender”. These results are consistent with Matud (2004) and Ben-Zur (2009) who state that women have higher anxiety levels in stressful cases. The higher anxiety levels of women can be accounted for by the social gender roles and the fact that they generally display higher empathy and emotional sensitivity (Tamres, Janicki, & Helgeson, 2002). The higher self-compassion levels of men, on the other hand, are supported by Yarnell and Neff (2013) studying the relationship of self-compassion with gender.

The individuals with psychological diagnosis were found to have higher earthquake anxiety and lower self-compassion skills. This finding supports the hypothesis “H2: The earthquake anxiety and self-compassion skill vary in people with psychological diagnosis”. The increasing anxiety levels of this group emphasize the necessity of interventions to increase the psychological support and self-compassion skills. Likewise, Birnie, Speca and Carlson (2010) reported that self-compassion had an important healing effect in the individuals with psychological disorders. This finding reveals the importance of self-compassion-based interventions in the individuals with psychological disorders.

Post-Hoc tests revealed that there are significant differences in earthquake anxiety and self-compassion skills according to the earthquake risk level of the area where the participants reside in. It has been found that the people who live in areas at a very high risk have higher anxiety levels and their self-compassion levels increase as the risk severity decreases. Interestingly, the self-compassion levels of the participants in the areas at very high risk were

found to be the highest, which may suggest a potential adaptation mechanism. This findings support the hypothesis “H4: The earthquake anxiety and self-compassion skill vary according to earthquake risk zone”. These results show parallelism with Bonanno, Galea, Bucciarelli and Vlahov (2007) studying the psychological resilience and self-compassion levels in the individuals who were exposed to natural disasters. The study performed by Bonanno et al. also found that high level of psychological resilience and self-compassion played an important role in reducing the stress and anxiety in the individuals who were exposed to traumatic events.

The differences between age groups are also noteworthy. The fact that the young adults have higher earthquake anxiety levels shows that the young individuals have more difficulty in coping with the uncertainty. The fact that the old adults have higher self-compassion skills, on the other hand, shows that the life experiences may increase the self-compassion. This finding is consistent with the study performed by Neff and Germer (2013) on the relationship between self-compassion and age.

The findings of this study emphasize the complex relationship between earthquake anxiety and self-compassion skills within the context of gender, psychological diagnosis and earthquake risk levels. Negative correlation between these variables shows that increasing the self-compassion can be an efficient strategy in reducing the anxiety due to earthquake. The gender differences and the higher anxiety levels of the individuals with psychological diagnosis point out the necessity of special interventions. In addition, the fact that the individuals in the areas at high earthquake risk have higher anxiety levels and varying self-compassion levels reveals the importance of contextual factors in the psychological responses given against the natural disasters. The future studies should examine the mechanisms underlying these relationships more thoroughly and research the efficiency of the self-compassion-based interventions on different universes.

The information obtained from this study can contribute to the improvement of more efficient psychological support services and crisis intervention programs and help to obtain better mental health results against natural disasters.

Recommendations

Based on the findings of this study, various recommendations can be made to reduce the earthquake anxiety and increase the self-compassion skills. These recommendations may

contribute to the improvement of the feasible and more efficient psychological support services and crisis intervention programs at individual, social and corporate levels.

Firstly, given that the self-compassion plays an important role in reducing the earthquake anxiety, training programs should be organized to improve the self-compassion skills. Such programs should be designed especially for the individuals who reside in the areas at high earthquake risk. The people with high anxiety levels can be supported with cognitive behaviorist therapies, feeling-oriented therapies, mindfulness and self-compassion-oriented therapies. Especially the people who were exposed to earthquake and their relatives can be assisted via Eye Movement Desensitization and Reprocessing (EMDR) treatment.

In accordance with the finding that women have higher earthquake anxiety than men and men have higher self-compassion skills, gender-oriented interventions should be developed. The support programs for women should aim at reducing their anxiety levels and increasing their self-compassion skills. These programs may become more effective by addressing the additional stress factors brought by social gender roles of women.

Given that the individuals with psychological diagnosis have higher earthquake anxiety and lower self-compassion skills, personalized support programs should be created for such individuals. Such programs may include therapeutic interventions to improve the ability of individuals to cope with stress, and increase their self-compassion. In addition, it is important to provide such individuals with regular psychological support.

The social solidarity and support networks should be reinforced to reduce the anxiety levels of the individuals residing in the areas at high earthquake risk. The social support mechanisms such as neighborhood networks, community events and group therapies may be effective in reducing the anxiety levels of the individuals. The social solidarity may increase the psychological resilience of the individuals by making them feel that they are not alone.

Information and mindfulness campaigns should be organized in order to reduce the earthquake anxiety. These campaigns may reduce the anxiety levels of the individuals by providing comprehensive information on what to do before, during and after an earthquake. In addition, raising awareness about the importance and feasibility of self-compassion should also be part of these campaigns.

Early interventions and crisis management educations should be organized to reduce the post-earthquake traumatic effects. These educations should aim at providing a rapid and effective psychological support after an earthquake. Crisis management educations should address to a large audience by covering both professionals and community leaders.

The future studies should examine the mechanisms underlying the relationships between earthquake anxiety and self-compassion more thoroughly and research the efficiency of the self-compassion-based interventions on different universes. In addition, the policies to be developed according to these findings should encourage the integration of disease management and mental health services. These policies may ensure that the self-compassion-based support programs for the individuals residing in the disaster zones become widespread.

Various institutions such as schools, workplaces and healthcare institutions should initiate programs for encouraging self-compassion and making it widespread. The courses on the self-compassion and stress-coping skills can be included in the curriculum. Mindfulness and stress management educations can be organized in order for the employees at workplaces to be able to improve their self-compassion skills.

These recommendations offer an extensive approach to reduce earthquake anxiety and increase self-compassion skills. The interventions applied can contribute to obtain better mental health results against natural disasters by increasing the psychological resilience of the individuals.

Ethics Approval

The survey used for the research was granted ethics approval by the ethics committee of Istanbul Gelişim University with the decision dated 10-04-2023 and no. 2023-05-108

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