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POSTTRAUMATIC STRESS SYMPTOMS AND WORLD ASSUMPTIONS OF PERSONS WITNESSING A TERRORIST ATTACKS

The aim of this study is to compare participants' level of posttraumatic symptoms and the assumptions of the world according to participants' trauma witness situation and to examine the relationship among tendency of individualism-collectivism, level of posttraumatic symptoms and the world assumptions. The case that witnessed on this trauma was happened on December 10, 2016 and took place at Vodafone Arena stadium in Istanbul, Turkey. The explosion happened after a soccer match, and terrorists attack carried out against security forces. It was targeted police car with a bomb outside Vodafone Arena and 46 people were killed and 150 people were injured in the blasts attributed by some members of a terrorist organization. The sample of the study was composed of 99 females and 34 males of the students from a university in İstanbul, 133 participants in total. Demographic form, Post Traumatic Stress Symptom Scale, Individualism-Collectivism Scale, and World Assumptions Scale were used in this study. There was a significant difference between the trauma symptoms' levels according to the presence or absence of trauma events in the past. The results indicated that trauma symptoms' levels of participants, who had traumatic experience, were higher than participants who had no traumatic experience earlier. The ANOVA test results demonstrated that the way of witnessing trauma affects justice assumption scores and it was observed that there was a statistically significant difference in the scores of groups. The scores of justice assumptions of the visually witnessed group in the terrorist attack were higher than the scores of the group who learned the incident from the news sources and social media. Furthermore, the scores of justice assumption of the eye-witnesses group of terrorist attack were higher than the group who ear-witnesses the terrorist attack. The ANOVA test results indicated that the way of witnessing trauma affects control assumption scores and it was found that there was a statistically significant difference in the scores of control assumptions of the groups. The scores of control assumptions of eye-witnesses group in the terrorist attack were higher than the scores of the group whose relatives died or injured in the incident. According to the Pearson correlation analysis results, there was a positive correlation between the tendency of individualism and assumption of randomness.

Key words: trauma, world assumptions, individualism, collectivism.

Симптомы посттравматического стресса у очевидцев террористических актов и их восприятие мира

Целью данного исследования является сравнение уровня посттравматических симптомов у очевидцев террористических актов и восприятия ими окружающего мира в зависимости от способа наблюдения за травматической ситуацией, а также изучение взаимосвязи между позицией на оси индивидуализм-коллективизм, уровнем посттравматических симптомов и восприятием мира. Террористический акт, повлёкший за собой изучаемую травматическую ситуацию, произошёл 10 декабря 2016 года на стадионе *Vodafone Arena* в Стамбуле (Турция) после футбольного матча и был совершён по отношению к работникам охраны. В частности, была взорвана полицейская машина, стоявшая возле стадиона, в результате чего 46 человек погибли и 150 человек были ранены. Выборка исследования состояла из 99 женщин и 34 мужчин – всего 133 студента Стамбульского Университета. При проведении исследования были использованы следующие инструменты: демогра-

фический опросник, шкала симптомов посттравматического стресса, шкала индивидуализма-коллективизма и шкала восприятия мира. В результате исследования были обнаружены статистически значимые различия между уровнями посттравматических симптомов в зависимости от наличия или отсутствия травматического опыта в прошлом. Так, уровень посттравматических симптомов у тех очевидцев, кто уже имел травматический опыт в прошлом, был выше, чем у очевидцев террористического акта, не имевших подобного опыта. Результаты теста *ANOVA* показали, что способ наблюдения за травматической ситуацией также повлиял на дальнейшее восприятие справедливости, и наблюдались статистически значимые различия между очевидцами и теми, кто узнал о террористическом акте из новостей и социальных медиа. У первых показатель восприятия справедливости был выше, чем у последних. Кроме того, показатель восприятия справедливости был выше у тех очевидцев, кто видел (и, соответственно, слышал) террористический акт, по сравнению с теми, кто его только слышал. Результаты теста *ANOVA* показали, что способ наблюдения за травматической ситуацией влияет также и на восприятие контроля, и есть статистически значимые различия между группами. Так, показатели восприятия контроля у тех очевидцев, кто видел террористический акт своими глазами, были выше, чем у тех, чьи родственники были убиты или ранены. Результаты корреляционного анализа с помощью коэффициента Пирсона показали также наличие прямой взаимозависимости между склонностью к индивидуализму и восприятием произошедшего как случайности.

Ключевые слова: травма, восприятие мира, индивидуализм, коллективизм.

Introduction

Trauma is defined as an unusual condition that paralyses one's natural coping skills which allows the individual to view the world, to sense and to connect the internal and external focused stimuli (Aker, Onder 2003). One of the elements that defines an event as a trauma is that the incident is perceived as a threat to one's life and/or body integrity (Karakaya et al. 2007). Another factor is that the individual cannot make sense of the event that one experienced. The traumatic event does not match with the existing cognitive schematics due to the nature of the event which is outside the individual's daily life experiences, thus the individual cannot make sense of the event. The reason for not being able to perceive the traumatic event is that the event creates excessive physical stimulation and it impairs cognitive functions (Sungur 1999). According to DSM-IV, trauma is defined as exposure to actual or threatened death, injury, or a threat to the body integrity of one's own (American Psychiatric Association (APA) 2000). In DSM-V, the following scenarios are added to the definition of trauma: "[i]n addition to witnessing the traumatic event in person; learning that a traumatic event occurred to a close friend or family member, and experiencing first-hand repeated or extreme exposure to aversive details of the traumatic event" (American Psychiatric Association (APA) 2013). In addition to unintentional events such as natural disasters and traffic accidents, intentional factors such as human trafficking, sexual harassment, rape, terrorist attacks, physical assaults and torture are also traumatising intentional factors (Golge 2005). Terrorism is a form of violence that is specifically designed to create the highest psychological effect on masses (Demirli 2011). Many studies report that high rates of PTSD are observed in individuals who have witnessed a direct terrorist attack (Norris et al. 2002).

Studies carried out with the victims of trauma have drawn attention to the fact that individuals often behave according to unquestioned assumptions (Wickie, Marvit 2000). Traumatic events can show the nature of one's basic beliefs and provide information on the basic assumptions about one's normal life is based by causing these assumptions to be shaken (Janoff-Bulman 1992). Basic assumptions proposed by Janoff-Bulman such as "overall benevolence of the world", "meaningfulness of the world" and "self worth" make life safe and comfortable for individuals. However, by shattering these core assumptions, traumatic events cause the individual to perceive their own vulnerability and to question their positive beliefs about the world (Janoff-Bulman, Berge 1998). It can be said that self-construction is an important factor affecting the belief and value systems of individuals. Culture has a great influence on the formation of self-constructions. Because culture is a collection of behaviours and values of a society (Guvenc 1985). Cultures can be classified in two ways: individualism and collectivism. According to this theory to approach different cultures, individualism gives the person the right to control his or her own life with freedom. As for the collectivist societies, the group comes first, and the self is based on the social system rather than individual characteristics. Individuals in individual communities are independent and autonomous from the group they are in. They prioritise individual goals against group goals and they are concerned with ensuring justice. Those who are in collectivist cultures; however, are dependent on the group (family, tribe, nation and so on) they are in. They give priority to group goals in the face of individual goals, and they are concerned with relations (Triandis 2001). However, the cultural tendencies of individuals in the same society may differ (Triandis 1995); this case is especially relevant to the developed countries in a transitional period and that host various immigrant nationalities, such as Turkey (Farh et al. 2007; Imamoglu, Karakitapoglu-Aygun 2004). Indeed, Goregenli's (1995) study shows that it is not possible to classify Turkish individuals as individualist or collectivist.

People grow up in a certain cultural environment, and the cultural environment influences the construction of self and therefore influences cognition, emotion and motivation (Matsumoto 2000). In fact, traumatic experiences may cause the victims to develop different assumptions about themselves and the world according to their self-construction.

A car bomb detonated outside the Besiktas Vodafone Arena football stadium on the night of December 10, 2016, after a football match. 46 people were killed in the attack and 150 people were injured. Since the attack was carried out at the centre of the city, there was a large number of eyewitnesses, as well as people who followed the events through the media coverage. At the same time, this attack can be considered as one of the largest terrorist attacks in terms of its casualties.

The aim of this study is to compare participants' level of traumatic symptom and the assumptions of the world according to participants' trauma witness situation and to examine the relationship among tendency of individualism-collectivism, level of traumatic symptoms and the world assumptions. For this fundamental purpose, the following hypotheses were tested.

Hypothesis 1. There is a significant difference between the trauma symptom levels of participants who suffered trauma and who did not go through trauma in the past.

Hypothesis 2. Trauma symptom levels of participants who had traumatic experience are higher than the participants who had no traumatic experience.

Hypothesis 3. The traumatic symptom levels of the group whose relatives died or injured in the incident are higher than the group who learned the incident from media resources.

Hypothesis 4. There is a positive and significant relationship between participants' individualism tendencies and trauma symptom levels.

Hypothesis 5. There is a positive and significant relationship between participants' individualism tendency and randomness assumptions.

Method of the research

Sample. The sample of the study was composed of 99 females and 34 males of the students from a university in İstanbul, 133 participants in total. There were 10 eye-witnesses, 12 ear-witnesses, 10 participants whose relatives died or injured in the attack, 101 participants who learned this incident from media resources. 96 of the participants had traumatic experiences before this attack, 37 of them had no traumatic experiences earlier from this incident.

Data Collection Tools. Demographic form, Post Traumatic Stress Symptom Scale, Individualism-Collectivism Scale and World Assumptions Scale were used in the study.

The World Assumptions Scale. The World Assumptions Scale (Janoff-Bulman 1989) contains 32 items that are rated on a likert scale bounded by 1 (strongly disagree) and 6 (strongly agree). The scale has eight sub-dimensions: justice, randomness, controllability, benevolence of people, world benevolence, self-worth, self-control, and luck. Yilmaz (2008) purposed to investigate the reliability and validity of the Turkish version of World Assumptions Scale. The sample of the study consisted of 219 adults in total. According to the principal component analysis, it was revealed that the scale had six factors. The internal consistency of the scale was .70, and the test-retest reliability coefficient was .58.

In order to measure the individualism collectivism tendency, the Individualism-Collectivism Scale developed by A. Ton (2008) by using Turkish Proverbs. The scale of validity reliability studies indicates that the scale consisting of two independent factors: individualism and collectivism (Ton 2008).

Post Traumatic Stress Symptom Scale. Post Traumatic Stress Symptom Scale is a form which is created from 36 substances by Sahin et al. (2001). In their study, they utilized from Post-trauma Stress Disorder Checklist (Weathers et al. 1994) and Impact of Events (Horowitz et al. 1979) to develop the Post Traumatic Stress Symptom Scale. The factor analysis conducted by Dinvar (2011) within the reliability validity study of this scale yielded three factors comprising avoidance, recurrent thoughts, and physiological arousal on which accounted for 53.3% of the total variance. Cronbach alpha internal consistency coefficients ranging between .89 and .91 for subscales were obtained as a result of the analysis about the reliability of the scale (Dinvar 2011).

The participants' assumptions about the world and the levels of traumatic symptom levels were compared with the ANOVA multiple comparison tests according to the groups divided by 4 witnesses situation (eye-witnesses group, ear-witnesses group, the group whose relatives injured or died and the group who learned the attack from media resources). The data of the study is needed to be confirmed by three conditions in order to apply parametric tests. Firstly, the data is required to have ratio or interval scale and to confirm normal distribution, as well as having group variance equality (Buyukozturk 2014). For this reason, the comparisons among the levels of symptoms of trauma, individualism – collectivism tendency levels and the assumptions of the world were done with t test and ANOVA analysis. Comparisons of participants' traumatic symptom levels and world assumptions according to genders of the participants were done with independent t-test. In addition, comparisons of participants' traumatic symptom levels and world assumptions according to presence or absence of trauma events prior to assault event were analyzed with independent t-test. Pearson correlation analysis was conducted to investigate the relation among individualism tendency, collectivism tendency, traumatic symptoms levels and world assumptions of the participants.

Results of the research

Table 1 indicates the means, standart deviations, skewness and kurtosis of the sub-dimensions of Post Traumatic Stress Symptom Scale, sub-dimensions of World Assumptions Scale and sub-dimensions of Individualism-Collectivism Scale scores.

Table 1
Descriptive statistics of variables

Variable	M	SD	Skewness	Kurtosis
Assumption of luck	12.79	4.69	.094	-.157
Assumption of benevolence of the world	13.61	5.17	.497	-.177
Assumption of control	16.50	4.33	.207	-.456
Assumption of randomness	12.10	2.90	.657	.036
Assumption of self-worth	12.10	2.90	.657	.036
Assumption of justice	7.75	3.23	.567	.020
Individualism	93.44	11.10	-.345	.979
Collectivism	99.79	11.7	.031	-.188
Trauma symptom level	34.37	18.23	.511	.104

Source: elaborated by the authors.

There was a significant difference between the control assumption levels of females and males ($t(131) = 2.6; p < .05$). The results showed that control assumption levels of males ($\bar{x} = 18.29$) were higher than control assumption levels of females ($\bar{x} = 16.11$) (see Table 2).

Table 2

Independent sample t-test analysis of control assumptions level according to gender

	Gender	N	\bar{x}	ss	$Sh_{\bar{x}}$	t-test		
						t	Sd	p
Control assumptions	Male	34	18.29	4.29	.736	-2.6	131	.010
	Female	99	16.11	4.19	.421			

Note: $p < .05$.

Source: elaborated by the authors.

There was a significant difference between the trauma symptom levels of participants who suffered trauma and who did not go through trauma in the past ($t(131) = 2.78$; $p < .05$). The results indicated that trauma symptom levels of participants who had traumatic experience ($\bar{x} = 36.91$) were higher than participants who had no traumatic experience ($\bar{x} = 27.21$) (see Table 3).

Table 3

Independent sample t-test analysis of control assumptions level according to presence of trauma in the past

	Source	N	\bar{x}	ss	$Sh_{\bar{x}}$	t-test		
						t	Sd	p
Trauma symptom level	No trauma	37	27.21	15.80	2.59	-2.78	131	.006
	Traumatic past	96	36.91	18.73	1.91			

Note: $p < .05$.

Source: elaborated by the authors.

There was no significant difference in the trauma symptom levels of the groups that separated by the participants' traumatic witnesses status ($p > .05$).

As shown in Table 4, the ANOVA test results indicated that the way of witnessing trauma affects justice assumption scores and also it was found that there was a statistically significant difference in the scores of justice assumptions of the groups separated by the trauma witness situation of the participants. ($F_{(3,089)} = 0.018$, $p < .05$) (see Table 4).

Table 4

The results of one-way ANOVA analysis on groups' assumption of justice scores according to the way of witnessing trauma

	Source	Sum of Squares	Df	Mean Square	F	p
Assumption of justice	Between groups	122.737	4	30.684	3.089	.018
	Within groups	1271.564	128	9.934	-	-
	Total	1394.301	132	-	-	-

Source: elaborated by the authors.

Tukey test was done in order to find out whether there is a statistically significant difference in group scores of justice assumption. The justice assumption scores of eye-witnesses group ($X = 12.166$) were higher than the group who learned the incident from media resources ($X = 7.541$), ($p = 0.006$, $p < .05$). The justice assumption scores of eye-witnesses group ($X = 12.166$) were higher than the scores of the ear-witnesses group. ($X = 7.5$), ($p = 0.030$, $p < .05$).

As shown Table 5, the ANOVA test results indicated that the way of witnessing trauma affects justice assumption scores and also it was found that there was a statistically significant difference in the scores of control assumptions of the groups separated by the trauma witness situation of the participants ($F_{(2,587)} = 0.040$, $p < .05$) (see Table 5).

Table 5

The results of one-way ANOVA analysis on groups' assumption of control scores according to the way of witnessing trauma

	Source	Sum of Squares	Df	Mean Square	F	p
Assumption of control	Between groups	183.627	4	45.907	2.587	.040
	Within groups	2271.817	128	17.749	–	–
	Total	2455.444	132	–	–	–

Source: elaborated by the authors.

Tukey test was done in order to find out whether there is a statistically significant difference in group scores of control assumption. The control assumption scores of eye-witnesses group ($X = 21.33$) were higher than the scores of the group whose relatives died or injured in the incident ($X = 13$), ($p = 0.046$, $p < .05$).

The correlation among the tendency to individualism, the tendency of collectivism, trauma symptoms level and sub-dimensions of world assumptions scale analyzed with Pearson Correlation. There was a positive correlation between the tendency of individualism and assumption of randomness ($r = .296$, $p = 0.001$, $p < .05$).

Conclusions

The genetic characteristics of people, their psychological history, and their ability to cope with certain stressors are different. For this reason, PTSD statements differ (Maria 2003). The conclusion of this study supports this claim, which is “those who have traumatic experiences in the past have a higher level of trauma symptom levels than those without a traumatic experience”. The traumatic experience goes through an assimilation or dissimilation process. After the trauma, the victims blame themselves by assimilating their knowledge according to their schematics. A victim such as this might blame himself/herself by thinking: “I would not have been in the wrong place at the wrong time. It happened to me because I deserved it”, instead of modifying their schemes. In that case, how traumas are perceived is as important as the trauma itself (Sungur 1999).

According to the findings of the study, the scores of justice assumptions of the eyewitnesses to the terrorist attack were found to be higher than those who are ear witnesses. Trauma is incompatible with the idea that the disasters do not happen to valuable people in a good and safe world and even though trauma impairs one's basic assumptions, in some cases, people are able to maintain a meaningful world belief. It is argued that this is due to the desire to avoid seeing the world as a threat (Janoff-Bulmann 1992). In this direction, the eyewitnesses are thought to use cognitive distortions related to the assumption of justice more because they are more exposed to the effects of trauma than that of a witness who hears the event.

According to the findings of the study, the control assumption scores of those who witnessed the terrorist attack at Besiktas were higher than those who lost their relatives in the bombing. The theoretical explanation for trauma is an explanation related to "attributions". According to this theory, it is emphasized that the individuals make attributions to their environment and experiences to understand, predict and control the events experienced during the traumatic event and that these attributions determine their individual responses (Mikulincer, Solomon 1988). For example, a rape victim might think that: "The world is not a reliable place. People may suddenly come across horrible things. So all I have ever learnt about the world was wrong". For this reason, the individual might assume control (Sungur 1999) by thinking that "I should make efforts to prevent bad things from happening to me". In this example, even though there is the mention of a traumatic process, it is thought to be an adaptive effort for the continuation of life. However, it is thought that the helplessness of the vicissitudes of the victims of a traumatic event that results in death reduces the control assumptions.

According to the findings of the study: "As the tendency of individualism increases, the assumption of randomness increases". It is thought that people with a tendency to collectivism tend to perceive the events that happened to them not to be coincidental but rather to be more incidentally perceived in relation to their environment and relatives because they act in accordance with norms and traditions. Those who have individualist tendencies; however, are thought to have higher assumptions of randomness for the events they experience as they show more autonomous behaviour.

The DSM IV defines trauma as follows: The individual has experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others (APA 2000). In DSM V, the following scenarios are added to the definition of trauma: "[i]n addition to witnessing the traumatic event in person; learning that a traumatic event occurred to a close friend or family member, and experiencing first-hand repeated or extreme exposure to aversive details of the traumatic event" (APA 2013). Those who view the traumatic events on social media or some other press coverage are not included in the definition, though. In their assessment, Mol et al. (2005) do not distinguish any difference between the problems of those who experienced traumatic events with the current definition of trauma and the problems of those who experience events that are outside this definition (divorce, unemployment, experience of theft without encountering the thieves, expected death at the family, etc.) in terms of their level of trauma symptoms. As a result of this study, there was no significant difference in terms of trauma indications between groups separated by DSM V's definition and those who view the trau-

matic events from the social media. Therefore, S. S. Mol et al. (2005) found that there was no significant difference in terms of trauma symptom levels between those who experienced burglary with encountering the burglars and those who do not encounter the burglars. In the same vein, there was no significant difference in trauma symptom levels between those who experienced personal injury with the terrorist attack and those who view the events from the social media. This lack of difference makes it clear that the definition of trauma needs to be revised. It is thought that this research contributes to the literature in terms of its re-evaluation of the concept of trauma as a result of not significantly changing trauma symptom levels according to the conditions of experiencing a traumatic event such as terrorist attacks.

As for the limitations of the study, it can be stated that the number of people who witnessed the terrorist attack visually and audibly is less than the number of people who learned the events from the social media. However, considering that the attack resulted in 46 dead and 150 wounded in a city with a population of 20 million, it is thought that the expected difference between the rates of those who witnessed such terrorist incidents on the scene and learned the events from the social media is thought to be represented by the number of samples in the study.

In future studies, it is thought that the application of the same research pattern in a larger sample group that witnessed traumatic life events will contribute to the literature in terms of the definition of trauma.

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