

PREDICTIVE FACTORS OF POSTTRAUMATIC STRESS AND
POSTTRAUMATIC GROWTH AMONG THE SURVIVORS OF VAN, 2011,
EARTHQUAKES' TRAUMA

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EARTHQUAKES' TRAUMA**

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ABSTRACT

PREDICTIVE FACTORS OF POSTTRAUMATIC STRESS AND POSTTRAUMATIC GROWTH AMONG THE SURVIVORS OF VAN, 2011, EARTHQUAKES' TRAUMA

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Earthquakes, like other natural major disasters involves trauma resulting from exposure and/or witnessing to deaths and injuries, extreme fear of threatening situations, loss of a significant one, monetary loss and need of extreme physical power. On the other hand, the survivors may have also present positive changes in face of adversity. In present study, both negative and positive impacts of Van earthquakes which happened in 23rd of October and 9th of November 2011 are examined. 630 volunteer teachers from Erciş and Van districts participated in the study who experienced at least one of the earthquake in the disaster area. The data was collected four months after the second earthquake. Female gender, degree of exposure (proximity to the epicenter), loss of life, helpless coping, negative cognitions about self and world are found to be the risk factors for Posttraumatic Stress (PTS). In addition to the same variables, problem focused coping also significantly predicted the level of Hyperarousal and Intrusion factors. Avoidance factor was predicted by ego-resilience, helplessness coping, and negative cognitions about self. The predictors of

Posttraumatic Growth (PTG) were found to be female gender, ego-resilience, perceived social support, problem focused coping, fatalistic coping, and seeking support coping. The mediator role of Posttraumatic Cognitions and Coping Styles in developing PTS and PTG were investigated. The results were discussed within the previous literature and posttraumatic stress and growth theories. Furthermore, limitations of the study, implications of the findings for clinical practice and community interventions, and future research were discussed.

Keywords: Posttraumatic stress, posttraumatic growth, earthquake, natural disasters, coping



ÖZ

2011 VAN DEPREMLERİNİ YAŞAYANLARDA TRAVMA SONRASI STRES VE TRAVMA SONRASI BÜYÜMEYİ YORDAYAN FAKTÖRLER

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Depremler, diğer doğal afetler gibi kayıp, ölüm ve yaralanmaya maruz kalma veya tanık olma, tehdit edici durumların yarattığı aşırı korku, önemli kişilerin kaybı, mali kayıplar ve aşırı düzeyde bedensel güce ihtiyaç duyma gibi sebeplerden dolayı travmatik bir süreci içerir. Öte yandan, böyle zor durumlarla karşılaşan hayatta kalan kişiler olumlu değişimler de gösterebilirler. Bu çalışmada, 23 Ekim ve 9 Kasım 2011 tarihlerinde meydana gelen Van depremlerinin hem olumsuz hem de olumlu etkileri araştırılmaktadır. Araştırmaya iki depremde en az birini afet bölgesinde yaşamış olan 630 gönüllü öğretmen katılmıştır. Araştırma verisi ikinci depremde 4 ay sonra toplanmıştır. Travma sonrası stresi (TSS) yordayan faktörler olarak, kadın cinsiyeti, can kaybı, afete maruz kalma düzeyi, çaresiz başa çıkma, kendisi ve dünya hakkında olumsuz travma sonrası bilişler değişkenleri bulunmuştur. TSS'in alt boyutları olan aşırı uyarılmışlık halini ve gericilik düzeyini aynı değişkenlere ek olarak problem odaklı başa çıkma değişkeni de yordamıştır. Travma sonrası büyümeyi (TSB) ise kadın cinsiyeti, ego-resilience, algılanmış sosyal destek, problem odaklı başa çıkma, kaderci başa çıkma ve son olarak sosyal destek arama değişkenleri yordamıştır. Travma

sonrası bilişlerin ve başa çıkma biçimlerinin aracı değişken olarak etkileri de araştırılmıştır. Bulgular, önceki yazın ve TSS ve TSB kuramlarıyla birlikte tartışılmıştır. Ayrıca, araştırmanın sınırlılıkları, elde edilen bulguların klinik uygulama ve toplumsal müdahalelerdeki olası yansımaları, gelecekte yapılabilecek araştırmalarla ilgili öneriler sunulmuştur.

Anahtar Kelimeler: Travma sonrası stres, travma sonrası büyüme, deprem, doğal afet, başa çıkma



To my wife and our beloved cat Pişo



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CHAPTER 1

INTRODUCTION

Present study aims to investigate possible predictors of posttraumatic stress level and posttraumatic growth among the survivors of 2011 earthquakes in Van, Turkey. In this chapter, a brief introduction about Van earthquakes and literature review on psychological effects of disasters will be given. The chapter begins with the definitions of natural disasters and hazards. Then the seismicity of Turkey and history of major earthquakes occurred in Turkey will be presented. Then, the devastating results of two major earthquakes hit Van province, Turkey in 2011, will be introduced. The aftermath conditions and characteristic features of Van province will also be given. The second section of this chapter presents both negative and positive psychological consequences of disasters on the survivors. Since posttraumatic stress (PTS) level of the survivors is one of the main scopes of current study, PTS and related factors will be widely discussed among the adverse psychological effects of traumatic events. Next, probable positive effects of adversity, namely posttraumatic growth (PTG) and its predictors found in the trauma literature will be presented. Finally, aims and hypothesis of the present study will be given.

1.1. "Natural" Disasters

The term "natural hazards" is used interchangeably with the term "natural disasters", and both are commonly used in trauma literature. Hazard is a natural process or phenomenon (floods, storms, droughts, earthquakes) with adverse effects on life, limb, or property (Shi, 2019). Centre for Research on the Epidemiology of Disasters (CRED, 2016), defines a disaster is "a situation or event that overwhelms local capacity, necessitating a request at the national or international level for external assistance; an

unforeseen and often sudden event that causes great damage, destruction and human suffering”. The disasters are classified mainly in two groups, namely natural disasters and technological disasters. Main types of natural disasters are geophysical (i.e. earthquakes, volcanic activities), hydrological (floods, landslides), meteorological (storm, extreme temperature), climatological (drought, wildfire), and biological (epidemic). In order to distinguish these two terms, there is now an acceptance of the idea that disasters occur not only with an exposure to the hazard's impact but also with the vulnerability of the population (Cannon, 2008). Vulnerability is associated with poverty very often, but it has a wider meaning. Lack of coping capacity with the results of the hazard, lack of preventions, and isolated and insecure people are also associated with vulnerability, because these circumstances make some people more prone to disaster. In summary, disasters, not hazards, kill people and cause damage.

Every year hundred millions of people are affected by floods, massive storms, cataclysmic earthquakes and other disasters, which cause loss of life, property loss, and damage to infrastructure. The Centre for Research on the Epidemiology of Disasters (CRED) has been providing an Emergency Events Database (EM-DAT) since 1988. According to EM-DAT database, between 1994 and 2013, 1.35 million people were killed in 6.873 disasters. Flooding was the most frequent disaster, 43% of all recorded events. The second most frequent type of disaster was storms. Among those disasters, earthquakes (including tsunamis) affected only 3% of the people, but they were the deadliest. 55% of the total casualties resulted from earthquakes. (Wallemacq et al., 2015). Disaster mortality rate among the low income countries was more than four times the high income countries. Number of deaths per one million inhabitants in low income countries was 43, whereas it was 9 among the high-income countries, showing that economic development is more important determinant of mortality than the exposure level of the hazard.

1.2. Earthquakes in Turkey

Among the natural disasters, earthquakes are the main threat for Turkey. According to the seismic zone map of Turkey, 92% of surface area, 95% of the population, 98% of

industrial structures and 90% of the dams are subject to the risk of earthquake disaster (Dogan, 2013; Korkmaz, 2009). As it lies on the meeting point of the African and Eurasian tectonic plates, Turkey is among Europe's most earthquake prone countries. The North Anatolian Fault System (NAFS) which is extending from Eastern Turkey to mainland Greece, is one of the most active faults in the world (Efe & Demirci, 2001). Besides NAFS East Anatolian Fault System is also an active strike-slip fault belt that provoke destructive earthquakes ($M_w > 5.5$) in Turkey (Tan et al., 2008).

According to Kandilli Observatory and Earthquake Research Institute, Istanbul (KOERI, 2015), eighty major earthquakes (with a magnitude greater than 5.0 and causing deaths) killed 83.088 people occurred during 1900 and 2014. In 1939, Erzincan Earthquake with a magnitude of 7.9 killed 32.968. One of the recent earthquakes, Marmara Earthquake with a magnitude of 7.8 killed 17.500 people, injured 44.000 in 17 August 1999 in Kocaeli. Earthquakes has also huge adverse effect on the economy. The economic losses of Marmara Earthquake were estimated between 3 and 6,5 billion US dollars (Gökkaya, 2016).

1.2.1. Van Earthquakes

A devastating earthquake with a $M_w 7.2$ hit Van city on 23 October 2011 on Sunday afternoon at 13:41 (local time). The epicenter was in the Tabanlı Village which is located 16 kilometers north of Van's city center, it was Erciş county which is 90 kilometers far away from Van, the mainly affected settlement. 604 people were killed and 222 people were rescued from debris. Hundreds of buildings were demolished and thousands were heavily damaged. While intense aftershock activity of the first earthquake was active, another earthquake with a magnitude of 5.6 M_w hit Edremit county which is located 9 kilometers to the south of Van, on 09 November 2011 at 21.23 local time (KOERI, 2011). This earthquake was lighter than the first one, but 40 people were killed and 30 people were rescued from debris. According to Republic of Turkey Prime Ministry Disasters and Emergency Situations Directorate of Turkey (AFAD), totally 644 people were killed, and 1966 people were injured due to the two earthquakes (AFAD, 2014). The number of buildings that were collapsed or damaged

was 14.156 in Erciş and 17923 in Van. More than 150.000 people became homeless after the earthquakes. In 2011, the official urban population figure was about 77.000 for the Erciş county and 370.000 for the Van province (Guney, 2012).

Van earthquakes have some unique features. Too many aftershocks were experienced, after the first earthquake. Within the forty days of the first earthquake, 4014 quakes, 156 of which higher than 4.0 Mw were recorded (KOERI, 2015). The aftershocks brought about a lot of people to leave their homes whose houses were not severely damaged. People had to sleep in tents they set up next to their homes.

The elevation of the affected area from the earthquakes is around 1720 meters, and the region has long and cold winters (Erkan et al., 2015). When the earthquakes hit the weather was very cold, many people had to live in tent cities for months under heavy climate conditions. So the survivors had to cope not only with the devastating effects of the earthquakes and long-term aftershocks, but also with housing problems and heavy cold weather.

Not only the impact severity of the hazard, but also the vulnerability of Van was high. Van province is one of the poorest provinces in Turkey, it is 75th in 81 cities (Karancı et al., 2011, p 35). The total economic loss is estimated between 555 million–2.2 billion USD which represent 17 to 66 percent of Van province's Gross Domestic Product (Daniel & Vervaeck, 2012). According to the Turkish Statistical Institute (TUIK), the unemployment rate of Van was the third highest province in Turkey with a 17.2 percent where the national average was (11.9%) in 2010 (TUIK, 2011). Human Development Index ((HDI) is a combination of literacy rate, life expectancy and GDP (gross domestic product per capita). In 2010, the HDI in Van and surrounding cities was (0.63) which was lowest in Turkey and was equivalent to Bhutan or Congo. The average HDI of Turkey in 2010 was (0.81), equivalent to Brazil or Peru (Daniell et al., 2011).

According to the report which was comparing Van Earthquakes to the previous earthquakes in Eastern Turkey, average household size was between 7-8, was higher

than the other provinces. Between 1990-2009 the population of Van and Erciş was nearly doubled. The high flow from the rural areas to the urban areas was resulted from the intensive trade with Iran, higher unemployment rates in rural areas, and forced displacement because of the civil conflict. (Daniell et al., 2011).

The earthquakes also hit the education system. Many school buildings in the area collapsed or damaged after the earthquakes. Fortunately, it was Sunday, no children were at school. However, 68 teachers were killed. The schools and were closed in the disaster area, and reopened nearly nine weeks after the earthquake (Cavuşoglu, 2012). In order to complete the curriculum, some schools were united and the school hours were increased, which was a burden for both teachers and students. Prefabric housing was used in place of the classes that are not inhabitable (AFAD, 2014).

1.3. Psychological Effects of Disasters

Exposure to disasters are common, especially in certain geographical areas. According to International Federation of Red Cross and Red Crescent Societies (2000), between 1990 and 1999 nearly two billion people were effected from the natural disasters. Comprehensive studies in the disaster literature has shown that, after the disasters, the survivors are predisposed to develop mental health problems, such as posttraumatic stress (PTS), depression, anxiety disorders, and other psychiatric problems and nonspecific distress (Norris, et al 2002). Posttraumatic stress can be comorbid with somatic complaints, affective disorders, dissociative disorders, increase in the use of alcohol and drugs (Brady et al., 2000).

In a study conducted by Canino, et al. (1990) which they had epidemiological data collected from Porto Rico in which the floods and landslides killed 180 people. After two years of the disaster 375 of the initial participants and 500 newly participants joined to the study. They found that the depression level, generalized anxiety symptoms and new PTSD cases were higher among the survivors. The ones who experienced the disaster also showed a higher level use of health care services. Shore

et al (1986), found higher rates of depression, anxiety, and PTSD diagnoses among the survivors of Mount St Helen Volcano which killed 62 people.

Systematic reviews have reported that PTSD is the most common investigated topic in trauma literature (Norris et al., 2002). The extent of these negative outcomes of disasters hinges on interaction of some aspects, namely, type, suddenness, and severity of the disaster, survivors' level of exposure, degree of loss, and some other personal, social, and economic factors (Norris et al., 2000, Brewin et al., 2000).

On the other hand, the assumption that traumas bring on psychological problems, may have caused an extreme emphasis on negative outcomes (Glick, 2006, p. 6). Moreover, there is a growing interest in exploring whether traumatic events serve as a catalyst on the positive changes, e.g. an opportunity to reconsider life preferences and/or finding meaning of life, in this study referred to as posttraumatic growth (Updegraff & Taylor, 2000). Recent studies have examined positive effects in the face of adversity, such as chronic illness, HIV-infection, disasters, motor vehicle accidents, bereavement, war and other human made traumas (Dirik & Karanci, 2008; Kaler et al 2011; Lee et al., 2010). It is important to mention that, negative and positive results are not alternative of each other, rather they may coexist in trauma survivors (Tedeschi & Calhoun, 1996). Since this study is mainly focused on posttraumatic stress and posttraumatic growth and their correlated factors, the notions, models, and predictors of PTS and PTG will be discussed broadly in the following sections.

1.3.1. Trauma Terminology and Posttraumatic Distress Following Disasters

The term "trauma" is derived from ancient Greek, literally meaning wound or injury (Spiers, & Harrington, 2001, p. 212). Being wounded because of piercing of the armor will make the soldier suffer, similarly, the traumatic events where the person's life or bodily integrity is at risk directly or indirectly, may cause to the crushing of the psychological defenses and the resulting with unwanted extreme emotions like fear, helplessness, or horror. Traumatic stress is the biological and psychological response

to the traumatic event which may include acute traumatic stress and posttraumatic stress reactions.

The use of the trauma as a concept in the field of psychology first begins with the definition of "traumatic neurosis" by Helmut Oppenheim in 1899 (Schiraldi 2009, p.376), even though post-traumatic stress reactions can be seen even in old epics. In epic of Gilgamesh which was written more than 20 centuries ago, the king of Uruk, Gilgamesh begins to suffer from the intrusive thoughts after he witnesses the death of his close friend Enkidu. Oppenheim introduced the concept of *traumatic neurosis* in order to describe the patients' nightmares and delayed onset mood who had survived from railway accidents. But his understanding was mainly depending on the neurological changes in the central nervous system after exposing to a trauma. (Follette and Ruzek, 2006, p. 2). During WW1 *shell shock* and *traumatic neurosis* terms were used interchangeably for explaining soldiers' irritability, trembling, agitated startle response, and nightmare symptoms.

Posttraumatic Stress Disorder was first used as a diagnosis in 1980, in the Diagnostic Statistical Manual of Mental Disorders- third version (DSM-III) (APA,1980). According to DSM-III, the traumatic stressor was represented as events which were "generally beyond the realm of the normal human experience" that would arouse distress symptoms in most people (p.236). This ambiguous definition could be interpreted as if the event is abnormal than all the reactions could be seen in the range of normality. The DSM-III defined the symptoms of PTSD in three clusters: reexperiencing, numbing, and a collection of miscellaneous category consisting of arousal symptoms (Brett et al. 1988).

In 1994, APA declared a fourth version of diagnostic manual and elaborated the diagnostic requirements for PTSD which included six criteria:

- A) Exposure to a traumatic event and reactions of excessive fear, horror, or helplessness, at least one symptom from three symptom clusters, namely,
- B) At least one of five re-experiencing symptoms,
- C) At least three of avoidance symptoms,

- D) At least two of hyperarousal symptoms.
- E) Duration of symptoms will last longer than one month, and
- F) Significant distress or functional impairment (APA, 1994).

In the last version aka DSM-5, a new symptom cluster named “posttraumatic cognitions and mood” was added and instead of anxiety disorders, PTSD diagnosis was classified under a new category named *Trauma and Stress-Related Disorders* (APA, 2013). The feature of this new umbrella category was that, every disorder in this group would begin with exposure to a traumatic stressor or negligent environment. Other disorders under the same title are, acute stress disorder, adjustment disorders, reactive attachment disorder, and disinhibited social engagement disorder.

1.3.2. Epidemiology of PTSD

Potentially traumatic events like exposure to natural disasters, terrorism, criminal/political violence, serious illnesses, death of a loved one, motor vehicle accidents, rape, abuse are common. More than two thirds of the college students underwent at least one traumatic event in their lifetime in the US (Bernat, et al., 1998). Similarly, Norris (1992), has found that the lifetime prevalence rate for subjecting to a traumatic event in a nonclinical sample was 69%, tragic death was the most frequent one. In a study with a Turkish sample, the rate was 84%, and exposure to a natural disaster was the second most common traumatic event, after the unexpected death of a loved one (Karanci et al., 2012). In a recent study conducted in Turkey, 67% of the participants reported at least one traumatic event (Gül & Karancı, 2017). There is a consistent finding that the experience of a traumatic event is more common among men than woman. The rate of exposure to a traumatic event can rise up to 87% among males, and 78 among women. On the other hand, PTSD rates are higher among women (Kessler et al, 1995; Stein et al., 1997; Breslau et al., 2004).

Despite the high rate of prevalence of exposure to traumatic events, different studies show that either lifetime or 12 months of PTSD incidence is low, respectively. Kesler

et al., (2005) found that the lifetime prevalence rate of PTSD in American national sample (n=9218) was 6.8% (3.6% for males and 9.7 for females).

1.3.3. Models of PTSD

Traumatic events are common. But the relative rate of prevalence of PTSD is much lower than the frequency of traumatic events. Most of the survivors recover in a few weeks to few months, whereas some suffer from persisting symptoms lasting over years (Ehlers & Clark, 2000).

In order to elucidate why some trauma survivors are prone to develop PTSD and others are not, various psychological theories are evolved. These theories not only aim to explain the trauma survivors' experiences, regarding thoughts, emotions, behaviors, and unconscious processes, but also shape the scope of the psychological therapies of PTSD (Nijdam & Wittman 2015, p 41.) In this section, theories about the PTSD development will be briefly presented.

1.3.3.1. Conditioning Model

Mowrer's (1960) two-factor theory consider that, both classical and operant conditioning mechanisms play a central role in all anxiety and phobic disorders. Keane et al. (1985) developed this model and expanded it for PTSD. In the conditioning model of PTSD, it is claimed that, during the traumatic experience the stimuli that are neutral (the place, time of the day, individuals around the person, sounds, etc.) are paired with the unconditional stimulus (earthquake) and turn into conditional stimuli that will generate excessive fear. In post-trauma conditions, when the conditional stimuli are not paired with the unconditional stimuli, it is expected that the extinction process will begin. But when the survivors begin to avoid from the conditional stimuli, the level of fear or other unwanted emotions begin to decrease in the short run, thus avoidance is negatively reinforced. In summary, acquiring fear and anxiety via classical conditioning is the first factor, acquiring avoidance behavior in operant

conditioning via fear-reducing negative reinforcement is the second factor in this theory (Zoellner et al., 2008, p. 253).

Main criticism against the conditioning model was that, while it explained the hyperarousal and avoidance symptoms of PTSD well, but it remained weak to explain the re-experiencing symptoms such as intrusive thoughts and flashbacks (Foa et al., 1989).

1.3.3.2. Horowitz's Stress Response Syndromes

Horowitz's model is among the influential cognitive models about PTSD. According to Horowitz's "completion principle" all individuals have a tendency to make the new information and experiences consistent with their mental models (preexisting beliefs). This completion tendency is needed for adaptive decisions and behaviors because it lets the mind to stay in harmony with the reality. The inconsistency between the existing beliefs and information introduced by the traumatic event causes an increase to a stress response which demand reappraisal and "revision of both until they agree" (Horowitz, 1986, p.92). During the reconciliation of the old and the new information, if the burden of the traumatic experience is too much loaded then the assimilation process fails and the survivor will be psychologically affected. Intrusion and denial/numbing are the most common defense mechanisms used to cope with this difficulty. Intrusions, which are defined as re-experiencing and hyperarousal, help the assimilation process continue under control, as denial (e.g. avoidance and numbing) serves like a "fuse" when the person is overwhelmed (Horowitz, 1993, p.51). To sum up, if the trauma related information is not harmonized into the mental models through the oscillation between the defenses, the information continues to stay unconscious, and as a result of inadequate processing, posttraumatic symptoms will occur (Brewin & Holmes, 2003).

Critics against Horowitz's model focus on three points, firstly, it does not explain why some individuals do not have posttraumatic symptoms after the same traumatic experience. Secondly, Horowitz's model lacks in paying attention to the importance

of personal interpretation of the traumatic experience. Finally, some important posttraumatic factors in trauma research like attributions or social support has not been explained clearly, how such factors may play a role in completion process (Dalgeish, 1999, p. 197).

1.3.3.3. Cognitive Model of the Maintenance of PTSD (Ehlers & Clark, 2000)

Ehlers and Clark (2000), developed a cognitive model of PTSD in order to explain the question of “why do most of the survivors overcome the negative effects of the traumatic event, in a time range of a few weeks to a few months, while others cannot?” Some of the survivors’ symptoms may endure for years. Their model essentially focused on the continuance of PTSD symptoms in the second group. In their model two main factors contribute to the generating and perpetuation of PTSD: 1) disruption in integrating trauma memories into the autobiographical memory, 2) sense of ongoing threat due to the use of maladaptive appraisals.

Autobiographical memory is a type of episodic memory, refers to the memory of directly experienced events. It includes information that describes the self and narrative identity (Williams & Conway, 2009, p. 33). When the traumatic memory is poorly integrated with the autobiographical memory, the individuals will have difficulties in recalling deliberately information and will face with involuntarily situational accessible memory which includes a lot of sensory information (Lapidow & Brown, 2015, p.2). This mechanism triggers re-experiencing of the trauma and result with using maladaptive appraisals causing a sense of ongoing threat (Regel & Joseph, 2017, p. 25).

Ehlers and Clark (2000) also emphasized the importance of posttraumatic negative appraisals and personal conclusions about themselves in maintaining the PTSD. They named “mental defeat” to refer to the situation when the person has a sense of loss of psychological integrity and lack personal autonomy. Individuals who suffer from PTSD tend to recognize the traumatic event as a persisting process instead of time and place limited event, suggesting the presence of ongoing threat. This perceived threat

can be external “nowhere is safe” or internal “I attract disaster” which will produce excessive fear. It is well documented that not only fear, but also many other negative emotions are common after the trauma, such as shame, anger, guilt. These emotions are enmeshed with appraisals about the traumatic event, its meaning, person, and world (Beck, 1976). Appraisals of injustice “*others have not treated me fairly*” will produce anger; appraisals of responsibility “I deserve that bad things happen to me” will produce guilt; and appraisals of lacking standards “I am weak” will lead to shame (Ehlers & Clark, 2000, p. 322).

Ehlers and Clark’s (2000) cognitive model explains covers many features of PTSD, and it is also supported by empirical findings (Engelhard & Arntz, 2005; Beierl et al., 2020).

1.3.4. Predictors Associated with PTSD After Disasters

The studies aiming to find the PTSD ratio among the survivors have concluded with very different results. The prevalence of PTSD rate according to the characteristics of the traumatic event and survivors has a wide range between 4% and 88 % (Böddvarsdóttir & Elklit, 2004; Goenjian et al., 1994). The reason of such discrepancy may be due to using different assessment tools, in different societies, with different traumatic events, with different exposure level to the event, and finally in different measurement times. On the other hand, despite the rate of the exposure to a traumatic event is high, as mentioned above, the majority of the survivors do not develop PTSD (Kessler et al., 2005). The majority of immediate symptoms of PTSD disappear after a three-month period (Rothbaum et al., 1992).

The correlates of PTSD after disasters are not different from other traumatic events, but since the subject of the study is psychological reactions of earthquake survivors, other traumatic events will be documented without any detail. In order to understand the risk factors for PTSD, the variables can be grouped as pre-traumatic factors, peri-traumatic-factors, and posttraumatic factors. Ozer et al. (2003) define pre-trauma factors as, history of a prior trauma, prior adjustment problems, and psychopathology

of family in their meta-analysis study. Kılıç (2003) and Norris et al. (2002) mentions the importance of female gender, higher age, low education level, being single, being a member of an ethnic minority, lower income, high neuroticism and trait anxiety are reported as a pre-trauma risk factors.

Peri-trauma factors cover the severity of the trauma experience and survivors' emotional responses including dissociation reaction during the traumatic event. It has been well documented that the probability of PTSD is increasing in the man-made and intentional traumas, such as torture, rape, and kidnapping (Neria et al., 2008; Resnick et al 1992). Higher perceived severity of exposure to the trauma, higher fear, unexpected loss of a loved one, property loss, being trapped under the rubble, being alone at the time of the traumatic event, proximity to the epicenter are all peritraumatic risk factors for developing PTSD.

Posttraumatic factors include variables such as negative appraisals about self, event, or world, negative life conditions, lack of social support, negative cognitive patterns, and inappropriate coping strategies (Aho et al, 2017).

Among the pre-trauma factors, gender is the most commonly used variable. It is widely reported that female survivors are more negatively affected because of the traumatic event (Anderson & Manuel 1994; Montazeri et al., 2005; Norris et al., 2002; Tural et al., 2004). In a study conducted by Şalcioğlu et al., (2003), female gender was one of the significant predictor of both PTSD and major depressive episode among the earthquake survivors.

Two studies conducted with the survivors of Marmara earthquakes (1999) showed that lower level of education and previous trauma history significantly predicted PTSD. (Kılıç & Ulusoy, 2003; Başoğlu et al., 2004). Other common variables were loss of a loved one, property loss, and female gender.

Studies show inconsistent results about age and posttraumatic stress. There are some studies supporting that older age is a risk factor for PTSD (Lewin et al., 1998; Şalcioğlu

et al., 2003), on the other hand, Epstein et al., (1998) found that younger age was a risk factor for PTSD among the survivors of an aircraft accident.

We see that the variables related to the peri-traumatic factors give more consistent and similar results in disaster studies. Higher perceived severity of the traumatic event and proximity to the epicenter (Kılıç & Ulusoy, 2003; Şalcıoğlu et al., 2003; Geonjian et al., 1994), loss of a loved one and/or property loss (Armenian et al., 2000; Başoğlu et al., 2004), relocation (Edinsel & Elçi, 2015; Riad & Norris, 1996) are important peritraumatic risk factors for PTSD. In a study conducted by Tural et al. (2004) which aimed to find the risk factors for PTSD among the earthquake survivors, the peritraumatic factors including physical injury due to earthquake, damage to the house, being alone in the earthquake, death of a family member, level of perceived threat, sense of helplessness, and witnessing a dead body explained more variance (9.1%) in PTSD than pre- and post- trauma variables (explained total variance was 21.9%).

The posttraumatic factors can be taken as the factors either buffering or sustaining/transforming factors of acute traumatic stress in to permanent posttraumatic stress. Among them social support is an important one. Social support can be defined as social interactions and bonds that give the person a sense of caring and attachment (Eker & Arkar, 1995). Since there is ambiguity in the definition, “perceived” social support is more commonly used. According to the findings from 11 studies with different groups, ranging from women subjected to violence to burns victims and combat survivors, Özer et al., (2003) noted that survivors reporting lower levels of social support had higher levels of PTSD symptoms. When the circumstances of the survivors are taken into consideration, many of them exposed to death and/or feeling of helplessness, being contained by loving, supportive, understanding and guiding people via social support is critical for using effective coping skills (Kaniasty & Norris, 1995). Stephens et al. (1997), argues that individuals suffering from PTSD avoid from talking about the traumatic experience, resulting with blocking the emotional processing of the trauma. Social support can help survivors to overcome their distress through assistance of speaking of the event.

Another posttraumatic factor is coping. It can be defined as using thought and action strategies to regulate the stressful events and negative emotions. The coping strategies is distinct from how well it works. The ways of coping depend on the coping repertoire of the person, on the circumstance, and personality characteristics (Lazarus, & Lazarus, 1994). The coping strategies can be examined in two clusters, namely, emotion focused and problem focused strategies. The former is more frequently used to regulate the negative emotions arising from the stressful situations, where the situation is perceived as there is nothing else to be done. On the other hand, problem solving strategies are the behavioral actions and thoughts to alter and/or control the problematic situation and circumstances, so that reasons of distress will be solved (Folkman & Moskowitz., 2000; Folkman, & Lazarus, 1985).

In trauma literature it seems that there is a consensus that individuals who use avoidant coping strategy more often will have higher posttraumatic distress. This finding is supported in various traumatic groups, namely combat stress of Israeli soldiers (Solomon et al, 1988), Taiwanese rescue workers of Chi-Chi earthquake (Chang et al., 2003), Newcastle earthquake survivors (Carr et al., 1997). Research on the use of active coping skills and posttraumatic distress yielded different results. Many of them found that individuals using more active coping strategies had less posttraumatic distress, namely Turkish earthquake survivors (Karanci et al., 1999), exposure to a mass murder (North et al., 2001), flood survivors (Morgan et al., 1995). However, there is also contrary evidence that use of active coping would predict higher posttraumatic distress (Spurrel et al., 1993).

Posttraumatic appraisals, optimism and resilience level of the individuals also play a role as a risk a factor for posttraumatic stress. Negative cognitions about self, negative cognitions about world, and self-blame tendencies had high correlation with PTS and depression levels (Foa et al., 1999; Spurrel & McFarlane 1993, Moser et al., 2007). Optimism is found to be a protective factor for traumatic stress. Carbone and Echols (2017) found that being optimistic was one strong protective factor for the post-disaster mental health of the tornado survivors. Dougall et al. (2001) studied traumatic reactions of rescue workers 2, 6, 9, 12 months after the air crash. In their study

optimism level was negatively correlated with general severity index in all of the assessment times. Being resilient and high level of hardiness is also found to be a protective factor for negative posttraumatic outcomes. In a recent study conducted by Aho et al., (2017), resilience was a protective factor for PTSD symptomatology among accident survivors in Korea.

1.4. Posttraumatic Growth

Traumatic life events can force a person to examine his/her values, changing priorities, and gain insight into more meaningful life such as setting new life goals. According to Collins et al., (1990), negative life events have both a direct and indirect effect on individuals. These direct effects are negative, the incorporation of negative information such as vulnerability into existing schemas. The indirect effect occurs through the survivors' response to the event and may lead to positive outcomes, the incorporation of positive information such as the recognition of personal strength. Posttraumatic growth (PTG), although it is referred to many terms such as *thriving* (Carver, 1998) or *perceived benefits* (McMillen et al., 2001), the main theme seems to be positive psychological changes which person gets out of trouble with. PTG has been documented to result from many different kinds of traumatic events: bereavement, sexual assault, disasters, combat, refugee experiences, and terrorist attacks (Elder & Clipp, 1989; Collins et al., 1990; Tedeschi & Calhoun, 1998).

The scientific research on PTG roots in 1980s (Tedeschi et al., 1998). As a result of the struggle with different kinds of life crisis, experience of PTG involves five major domains of change:

- A) greater appreciation of life,
- B) warmer and more intimate relationships,
- C) spiritual development,
- D) greater sense of personal strength
- E) new possibilities

1.4.1. Models of PTG

There are several models explaining PTG, but two mainstream conceptual models, namely Schaefer & Moos' (1992) "life crises and growth model" and Tedeschi & Calhoun's (1995) "functional destructive model" will be discussed.

1.4.1.1. Schaefer and Moose's Life Crises and Growth Model

Schaefer and Moos' life crises and personal growth model (1992), contains the most common related and predictor factors of positive outcomes after the life crisis. In their model the environmental system refers to the individual's relationships with significant others and quality of living, like, financial and community conditions. In crisis conditions, social support, warm family atmosphere, community resources can be key elements for the survivors that they can benefit from. The second panel in the model is the personal system, including sociodemographic characteristics, like age, gender, relationship status, education, etc. Personal characteristics include ego-resilience, optimism, self-efficacy, and prior crisis experience. According to the model, the environmental and personal systems not only produce life crises but also contribute to the appraisals and coping responses of the individual, that in turn may lead to the development of PTG. Event related factors which is also named as life crisis or transition, refer to severity, duration, timing of the crisis and extension of the event. As a result of interaction of these factors, the individual chooses among two coping responses which are approach and avoidance. If approach coping is more used, then the individual tries to analyze the crisis, seeks support when needed and take actions. Avoidance coping involves individual's effort to minimize the problem, looking for other pleasure resources, and easing negative emotions. With those coping efforts of the negative life experience, three major types of positive changes may appear:

- 1- Increased personal resources such as assertiveness, self-understanding, empathy, maturity;
- 2- The development of new coping strategies such as the affect regulation and capability to think logically;

- 3- Increased social resources such as new social bonding and better relationships with friends and family (Moos & Schaefer, 1993, as cited in Tedeschi, Park and Calhoun, 1998).

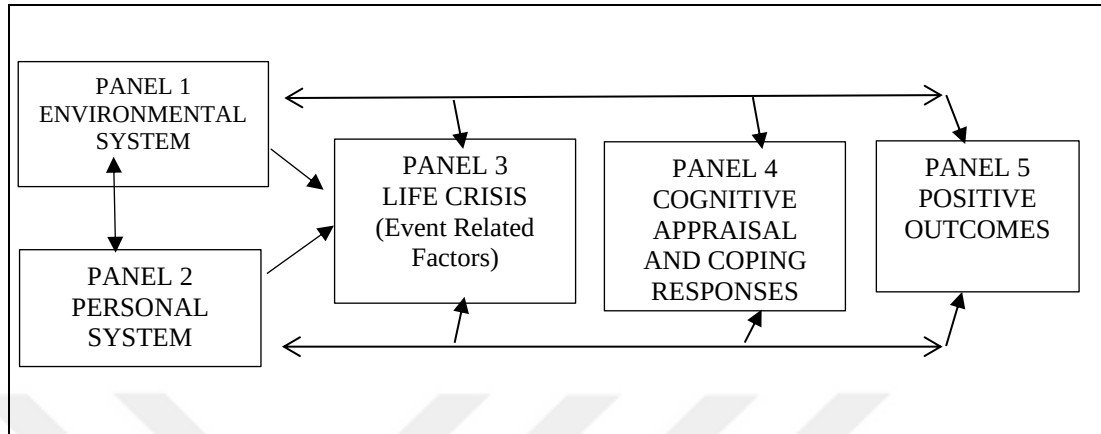


Figure 1

Schaefer and Moos' Conceptual Model of Life Crises and Personal Growth (Schaefer & Moos, 1992).

1.4.1.2. Tedeschi and Calhoun's Functional Descriptive Model

According to Tedeschi and Calhoun (1995) model, a “challenging enough” event should occur that shatters the individual’s assumptive world. In other words, the important personal goals and worldviews of the person is destructed by the crisis. In order to cope with the traumatic event and posttraumatic conditions, the survivor is required to face with the validity and functionality of existing schemas and/or create the new ones. Not only the discordance between the previous schemata and posttraumatic reality, but also understanding process of the traumatic event creates stressful emotions. If the cognitive and emotional efforts to cope the results of the traumatic event result with replacement of higher order beliefs, life aims, philosophy, relationship with her/himself and others, these changes are conceptualized as PTG. Thus, PTG is seen as a product of the process rather than a coping process (Zoellner & Maercker, 2006).

One important factor among the predictors of PTG is rumination. Frequently dealing with the memories and intrusive thoughts about the traumatic event and posttraumatic conditions is called rumination stage. Some automatic ruminations which are more commonly seen in the early stages of post-trauma period, may be detrimental, including sorrow, guilt, or wishful thinking about the traumatic event had never occurred. Following this period rumination turns into a more deliberate activity like, evaluating new conditions, looking for meaning, looking for opportunities, and reappraisal, which is more benign and productive for the new life circumstances. Thus, rumination process is used as a positive cognitive process which play an important role in developing PTG.

If the individual is responded with sympathy and understanding, rumination process can also contribute to the social bonding, since the survivors needs to share the thoughts and memories with their social surroundings (Tedeschi & Calhoun, 1995). One final aspect of rumination is about grief.

Since traumatic events cause some kind of loss, life of a loved ones, loss of an expected future, loss of a lifestyle, etc. Grief is commonly seen after the traumatic events. Deliberate rumination may also help some survivors to have a healthy grief processes. Since thinking on problem solving sources to adapt the new life can also facilitate grief process.

According to this model, some individual characteristics like hope, optimism and openness to experience may make growth more likely. The survivors who develop PTG are seen as “creative copers” (Calhoun & Tedeschi, 1998, p.222), openness and hope increase the individual’s flexibility and activity potentials which are crucial in creating positive gains.

Pretrauma mental health may be also an important factor. According to Calhoun & Tedeschi (1998), there may be a curvilinear relationship with PTG. If the person has dysfunctional coping skills, the traumatic event may be a burden rather than an

opportunity for developing PTG. On the other hand, if the person has a positive lifestyle coherent with PTG dimensions, there may be little room to change positively.

1.4.1.3. Predictors Associated with PTG

Some studies show that females report higher levels of posttraumatic growth than males (Linely & Joseph, 2004; Elçi, 2004; Tedeschi et al., 1998), however the evidence is mixed. In Gunes's study (2001) the growth level of women was not significantly higher than the men. Similarly, in Karancı & Acarturk's study (2005), gender did not significantly predict stress related growth. Higher education and income level were found to be positively correlated with higher PTG (Linely & Joseph, 2004).

According to some researchers the relationship between the level of perceived life threat and PTG is positively correlated (McMillen et al., 1997), on the other hand, some other researchers think that the relationship is curvilinear rather than linear (Linely & Joseph, 2004). If the level of exposure is in an intermediate level, the most benefit is attained. Some personal characteristics like optimism, hardiness and resilience are found to be in relationship with higher level of PTG (Tedeschi & Calhoun; Tedeschi et al., 1998). Social support is found to be a facilitator variable for the PTG (Tedeschi et al., 1998).

1.5. Aims of the Present Study

In this dissertation thesis, predictors of posttraumatic stress and its three subdomains namely, intrusion, hyperarousal and, avoidance, and level of posttraumatic growth will be evaluated among two different survivor groups from two epicenters of earthquake, namely Erciş and Van. Schaefer & Moos' (1992) "life crises and personal growth model" has been taken as a center in this study. The predictive power of demographic variables (age and gender); personality characteristics (ego-resilience, optimism, and perceived social support); disaster related variables (loss of life, amount of property loss, and distance to the epicenter); coping styles (problem focused, helplessness, fatalistic, and seeking support); posttraumatic cognitions (posttraumatic cognitions

about self and posttraumatic cognitions about world) on the development of PTS, its three subdomains (intrusion, hyperarousal, and avoidance) and PTG separately. Moreover, the mediator role of posttraumatic cognitions and coping styles were also examined.

1.6. Importance of the Present Study

Unless comprehensive preventive measures are taken against the destructive effects of natural hazards, the natural disasters will be inevitable and so the negatory psychological results among the survivors. Despite, most of the survivors achieve to adapt the negative conditions of the disasters, still nearly 20% of them have adverse effects, some of which are long-lasting and professional help is needed such as PTS, anxiety, and depression. Given the earthquake disaster if the frequency and destructiveness, the importance of studies around PTSD becomes more evident. When the finding the predictive effects of demographic and personal factors on developing posttraumatic stress is essential in planning and shaping the psychological aid and interventions.

Different demographic, event related, and psychological measures like survivor's gender, income, level of exposure, loss of a loved one, social support network, coping abilities are very important in trauma literature and are well documented. But the effect of ego resilience and posttraumatic cognitions on the development of posttraumatic stress and posttraumatic growth is still not sufficiently researched.

The present study not only focus on the negative outcomes of a traumatic event, from a more holistic perspective, also aims to determine the probable factors that contribute the posttraumatic growth level of the survivors. To reach the aims of the study, Schaefer and Moos's (1992) of Life Crisis and Personal Growth Model of was used.

To sum up, this study aims to find the predictors of PTSD and PTG in the same sample. The findings may contribute important information for understanding the underlying

processes of PTSD and PTG and help to the mental health professionals to design both the community and psychotherapy interventions.



CHAPTER 2

METHOD

This chapter consists of the methodological details of the study. The first section presents the overall design of the study. The second section describes the participants of the study. The third section presents data collection instruments. The fourth section explains the data collection procedure. Next, in the fifth section, data analyses conducted are given. Finally, in the last section limitations of the study are presented.

2.1. Overall Design of the Study

The overall design of the present study is correlational research. Correlational researches aim to examine the relationships between two or more variables without any manipulation. Also, correlational design is used to make predictions about a variable called criterion variable by considering its relationship/s with other variable/s called predictor variable/s (Fraenkel & Wallen, 2005, p.337).

The aim of the present study is to search the differences in posttraumatic growth (PTG) and posttraumatic stress (PTS) scores of the survivors of Van and Erciş earthquakes, and to examine the predictive roles of demographic variables including pretraumatic and posttraumatic features of the participants, ego resilience, perceived social support, optimism, coping styles, and posttraumatic cognitions on those two dependent variables. Descriptive statistics, one-way analysis of variance, multiple regression analysis, and multiple mediation analysis were conducted to analyze the data.

2.2. Participants

The participants of the study consisted of volunteered teachers who experienced Van earthquake in October 23rd 2011 and/or Edremit earthquake in November 9th 2011 in either Van and/or Erciř and who were still working. Since it was not possible to make a proper cluster sampling after the earthquakes, convenient sampling method was used. 32 different schools in Van and 15 different schools in Erciř were visited and 687 teachers participated in this study. After data cleaning, the sample size became 630. Inclusion criteria were experience of the Van and/or Erciř earthquake(s), working as a teacher and willingness to participate in the study. Participants completed a 12-page questionnaire set consisting of seven scales and a demographic information section (See Appendix A).

Forty four percent of the sample were (n=278) female and 56 % were male (n=352). 29 % of the participants were from Erciř (n= 183) and 71% of them were from Van district (n= 447). The mean age of the participants was 30.5 (SD=6.5) with a range of 21 to 58. The mean age of the participants from Erciř was 28.5 (SD=5.1) and the mean age of the participants from Van was 32.1 (SD=6.8). The rate of the singles among the Erciř sample was higher 64.3%, it was 46.3% in Van sample. Most of the total participants' place of birth was out of Van, 72%. Among the Erciř sample %85 of them were born out of Van, on the other hand this ratio was 66% in Van group. Among the participants from Erciř, the ratio of loss of a loved one was much more higher than the Van group, 86% and 69% respectively. There were no participants from Van who stayed under the rubble, while 11 of the participants from Erciř had stayed under the rubble. The ratio of the total participants who joined the rescue work was 18%. 28% of the Erciř group had to stay in the tents after the earthquake, the ratio was 50% for Van. The demographic feature of the participants can be seen at Table 1.

Table 1

***Percentages, Means, and Standard Deviations of the Demographic Variables
(N=630)***

		Van			Erciş			Total		
		n(%)	Mean	SD	n(%)	Mean	SD	N(%)	Mean	SD
Age			31.2	6.79		28.5	5.06		30.4	6.45
Gender										
	Female	184 (29)			94 (15)			278 (44)		
	Male	263 (42)			89 (14)			352 (56)		
Marital Status										
	Married	262 (54)			71 (36)			333 (49)		
	Single	226 (46)			128 (64)			354 (51)		
Place of Birth										
	Van	153 (24)			28 (4)			181 (28)		
	Out of Van	294 (47)			155 (25)			449 (72)		
Loss of Life										
	Yes	141 (22)			156 (25)			297 (47)		
	No	305 (49)			26 (4)			331 (53)		
Stayed Under Rubble										
	Yes	0 (0)			11 (2)			11 (2)		
	No	447 (71)			172 (27)			619 (98)		

Table 1 (Continued)

Percentages, Means, and Standard Deviations of the Demographic Variables (N=687)

		Van	Erciş	Total
		n (%)	n(%)	N(%)
Joined	Recue			
Work				
	Yes	56 (9)	54 (9)	110 (18)
	No	389 (62)	127 (20)	516 (82)
Amount of				
Monetary Loss				
	None	165 (26)	71 (11)	236 (37)
	A Little	165 (26)	58 (9)	223 (36)
	Some	72 (11)	34 (6)	106 (17)
	Much	42 (7)	20 (3)	62 (10)
Stayed in Tent				
	Yes	221 (35)	51 (8)	272 (43)
	No	223 (36)	131 (21)	354 (57)

2.3. Data Collection Instruments

In the present study, the data were gathered by the following instruments: A demographic data form developed by the researcher, The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), Posttraumatic Growth Inventory (PTGI; Tedeschi and Calhoun (1996), Ways of Coping Inventory (Folkman & Lazarus, 1985), Impact of Event Scale-Revised (Weiss and Marmar, 1997),

Posttraumatic Cognitions Inventory (Foa et al., 1999), Ego Resilience (Block & Kremen, 1996), and Life Orientation Test (Scheier & Carver, 1985) were administered to the participants. The psychological variables and how they are measured can be seen in Table 2.

Table 2
Psychological Variables that the Inventories Measure

Inventory	Variable it measures	Meaning of higher scores
The Multidimensional Scale of Perceived Social Support	Perceived social support	The amount of perceived social support is high
Posttraumatic Growth Inventory	Level of growth after the traumatic event	Level of growth is higher
Ways of Coping Questionnaire	Cognitive and behavioral strategies the person use under stressful circumstances	That type of coping is used more often
Impact of Events Scale-R	Posttraumatic symptom severity	Higher PTSD symptoms
Posttraumatic Cognitions Inventory	Thoughts and beliefs of the trauma survivor	Higher negative view of self, world, or self blame
Ego Resilience	The proneness of the person to adapt to the frustrating demands	More adaptive, resilient
Life Orientation Test	Level of optimism	More optimist

2.3.1. Demographic Data Form

In the demographic data form the participants were asked to answer the questions about their age, gender, marital status, place of birth, previous history of mental health, and income. The form also included questions about post disaster life, such as loss of a loved one, monetary loss, staying in the tent, staying under the rubble (see Appendix A).

2.3.2. Multidimensional Scale of Perceived Social Support (MSPSS)

Multidimensional Scale of Perceived Social Support (MSPSS) is a 12 item questionnaire which was developed by Zimet et. al. (1988) in order to measure person's perceived social support from three support domains, namely, family, friends, and significant others. MSPSS is rated on a 7-point Likert scale (1=disagree very strongly; 7= agree very strongly). MSPSS was translated into Turkish by Eker and Arkar (1995) and the psychometric properties of the scale demonstrated that the defined three factors are also valid for our society. The Cronbach alpha values were found to be between .77 and .88 in three Turkish samples, where the total means were (M=53.56, SD=16.9) for psychiatry, (M=65.98, SD=15.6) for surgery, and (M=66.4, SD=11.60) for normal (Eker, Arkar, & Yaldız, 2000). Higher scores on the scale indicate perception of higher positive social support. In the present study the mean was (M=67.3, SD=15.5) and Cronbach's alpha value was found satisfactory for the total scale (.93).

2.3.3. Posttraumatic Growth Inventory (PTGI)

PTGI was developed by Tedeschi and Calhoun (1996), in order to assess positive changes that may occur in people as a result of coping a traumatic event. It consists of 21 items on a 6-point Likert scale ranging from 0 (I did not experience this change as a result of my crisis) to 5 (I experienced this change to a great degree as a result of my crisis). For the participants of the study the instructions were modified to "*after experiencing the earthquake*" rather than "*as a result of my crisis*". The higher the scorers indicate a higher level of growth. PTGI yields a total score and five subscale scores for new possibilities (5 items), relating to others (7 items), personal strength (4 items), spiritual change (2 items), and appreciation of life (3 items). In their first study, Tedeschi and Calhoun (1996) measured the internal reliability $\alpha=.90$. The test retest reliability was found .71.

Kılıç made the first Turkish translation of PTGI in 2005. He used a 5-point scale with a 4-factor solution. In 2006 Dirik translated the scale to Turkish again in an original 6-

points response format, and the Cronbach alpha reliability was high (.94). In another studies conducted in Turkish samples, the Cronbach alpha value was found to be .93 in Dürü's study (Dürü, 2006) and .73 in Şakiroğlu's study (2011). In the present study a mean PTG score was used in order to assess the level of growth ($M=2.77$, $SD=.98$, $Min=0$, $Max=5$). The Cronbach alpha reliability of the total scale was high (.93) in the present study.

2.3.4. Ways of Coping Inventory (WCI)

WCI is a commonly used instrument to examine the cognitive and behavioral strategies that people use under stressful contexts. It was developed by Folkman and Lazarus (1980) and it has been revised by the same authors (Folkman & Lazarus, 1985). They conducted a research with a university student sample and found that WCI had eight subscales namely, problem-focused coping, wishful thinking, distancing, seeking social support, emphasizing the positive, self blame, tension-reduction, and self isolation. The cronbach alphas ranged between .56 and .85.

In 1988, the revised version of WCI, was translated and adapted to Turkish culture by Siva (cited in Uçman, 1990). With the addition of 8 new items which were tapping fatalism and superstition, relevant to Turkish culture, the WCI had 74 items. The internal consistency of whole scale was high (Cronbach alpha=.91). Siva found eight factors after the factor analysis: problem solving, escape/avoidance, emotional control, growth, fatalistic approach, helplessness, self blame, and seeking refuge in supernatural forces.

Karancı et al (1999) applied the scale to the survivors of Dinar earthquake with a three-point scale (1=never, 2=sometimes, 3=always) and their study yielded five factors: problem solving/optimistic, fatalistic approach, helplessness approach, seeking social support, and escape. The Cronbach alphas were between .78 and .51.

In the present study, the 42-item WCI form obtained from Karancı et al's study (1999) was used. The factor analysis yielded a four-factor solution, explaining 39.8% of the

total variance. Nineteen items were loaded on the first factor which was labeled as *problem solving coping*. The internal reliability coefficient was found to be .89. Ten items were loaded on the second factor which was labeled as *fatalistic coping*, with a Cronbach alpha = .83. Nine items were loaded on the third factor, *helplessness* and its Cronbach alpha reliability coefficient was found to be .77. Four items loaded on the last factor, *indirect coping/seeking help*. Cronbach alpha reliability coefficient for this subscale was found to be .58. This four factor solution seems stable in different Turkish samples; survivors of Duzce earthquake (Şakiroğlu, 2019), university students (Arıkan and Karancı, 2013), rheumatoid arthritis patients (Dirik and Karancı, 2008), and parents of children with autism (Elçi, 2004).

2.3.5. Impact of Events Scale-Revised (IES-R)

Impact of Events Scale-Revised (IES-R) is developed by Weiss and Marmar (1997) to evaluate posttraumatic symptom severity over the past week related to a previous disaster. This scale has 22 items, using a 5-point Likert scale ranging from 0= not at all, to 4= extremely. It has three subscales which are intrusion (8 items), avoidance (8 items), and hyperarousal (6 items). Weiss and Marmar (1997) reported that the subscales have high levels of internal consistency with coefficient alphas .87 - .92 for intrusion, .84 - .85 for avoidance, and .79 - .90 in two different samples. In a 6-month interval, the test-retest reliability ranged from .89 to .94 for the total scale scores.

The scale was translated into Turkish by Çorapcıoğlu et al. (2006). Cronbach alpha of the scale was found to be .94. They also found that total IES-R scores' correlation with Clinician Administered Post Traumatic Stress Disorder Scale (CAPS) as (Spearman $r = .71$, $p < .001$) which indicates it is a valid instrument for detecting PTSD. In the current study the internal consistency of the whole scale was found to be .93. The Cronbach's alpha scores of intrusion, avoidance, and hyperarousal was .93, .72, and .92, respectively.

2.3.6. Posttraumatic Cognitions Inventory (PTCI)

Posttraumatic Cognitions Inventory (PTCI) is a 36-item self report questionnaire to assess the negative thoughts and beliefs of the trauma survivors (Foa et al 1999). Each item is rated on a seven-point, Likert-type scale. The original inventory has three factors, namely, negative view of the self, negative view of the world, and self blame. The internal consistency was found high in Foa's study, Cronbach's alpha = .97 and test-retest reliability was found to be .85 at a three week follow up.

The scale was translated into Turkish by Yağcıoğlu (2010). The factor analysis of items have yielded two factors, namely, negative cognitions about the self and negative cognitions about world. The Cronbach's alpha value of total inventory was found to be .95, .95 for negative cognitions about self and .89 for negative cognitions about the world. The test retest reliability was found to be .76 in a three week follow up.

The factor analysis results were similar in the present study. A two-factor solution explaining 51% of the total variance produced the clearest result. So Yağcıoğlu's factor loadings were used. The Cronbach's alpha scores for total inventory, negative cognitions about self and negative cognitions about world was .96, .96, and .88 respectively.

2.3.7. Ego Resiliency Scale (ER)

Ego resilience is the proneness of the person to adapt responses to the frustrating situational demands. Ego-Resiliency Scale is developed by Block and Kremen (1996), composed of 14 items responded to on a 4-point Likert scale. The coefficient alpha reliability of the scale reported by Block and Kremen was .76.

Karairmak (2007) has made the adaptation of the scale to Turkish population. In her study, the principal component analysis yielded three factors, including personal strengths, positive self appraisal, and openness to new experience. In her study the test retest reliability was .76. The internal reliability score of Cronbach's alpha was found

to be .80. In the present study total mean scores are used and Cronbach's alpha was calculated as .84.

2.3.8. Life Orientation Test (LOT)

Life Orientation Test (LOT) is developed by (Scheier & Carver, 1985) in order to measure the level of optimism which consists of 12 items. Four of the items are positive (1, 4, 5, 11), the other four items are negative (3, 8, 9, 12) and the rest four items are filler items (2, 6, 7, and 10). It is a five point likert type scale. The internal consistency for the 8 items has found to be Cronbach's alpha .76, and the test retest reliability has been found to be .76.

Aydın and Tezer (1991) have adapted the test to Turkish population. The internal consistency of the scale was assessed by Cronbach alpha (.72). In the present study the Cronbach alpha of the total scale was calculated as .77

2.4. Data Collection Procedure

A set of seven scales and a demographic data form were used in order to collect the data. Before collecting the data, permissions from Ethics Committee of Middle East Technical University was requested. After having approval from the committee, the researcher asked permissions from Governorship of Van and National Education Management of Van to conduct the study in the schools. Getting permissions from both of the institutions, the principals of the schools were informed. In Van 32 schools and in Erciş 15 schools were visited.

After debriefing the principals of the schools and teachers about the aim of the study, the scales were administered to the volunteered teachers. The volunteers also given informed consent forms to read and sign in. They were also debriefed about the confidentiality and anonymity, and right to quit filling the answers at any time. Contact info was also provided for the participants. They got no monetary support for joining to the study. The scales were completed in nearly 40 minutes.

2.5. Statistical Analysis

In the present study, the data obtained from 630 teachers who were survivors of the earthquake(s) were analyzed. The analyses were carried out with Statistical Package of Social Sciences (SPSS) version 20.0 for Windows. Prior to the analysis, all data were examined in terms of accuracy of data entry, missing values, and univariate and multivariate outliers. The missing values were replaced with series mean. Mahalanobis distance was conducted to find the multiple outliers. Factor analysis was conducted for ways of coping inventory with principal component analysis and varimax rotation. In order to investigate the effects of gender and location Multivariate Analysis of Variance (MANOVA) was conducted for PTG and PTS. Correlation analysis were used to understand the relations between the study variables. The predictors of the PTG, Intrusion, Avoidance, Hyperarousal, and total PTS were examined by using Hierarchical Multiple Regression. Finally, mediator role of coping types and posttraumatic cognitions were examined through multiple mediational analysis. The alpha level of .05 is chosen as a criterion for statistical significance.

CHAPTER 3

RESULTS

This chapter presents the result of the statistical analyses conducted in the study. In the first section, data cleaning process is presented. In the second section, descriptive statistics including means and standard deviations of the variables are given. The third section covers result of multivariate analysis of variance (MANOVA) considering the study questions. Next, correlations among the research variables are reported. In the fifth section, results of multiple regression analysis predicting posttraumatic stress (PTS) and posttraumatic growth (PTG) are given. Finally, in the last session results of multiple mediation analysis with bootstrapping method are presented (Preacher & Hayes 2008).

3.1. Data Cleaning

The initial dataset contained 687 cases, including those who did not complete the survey. I removed 36 cases because they began but did not complete the survey. Additionally, I removed three cases for suspected haphazard responding, so the dataset contained 648 cases. The missing values in the cases were not greater than 5%. Therefore, missing values were replaced by means. Also, “excluding cases listwise” procedure followed in the main statistical analyses performed (Field, 2005). In order to identify possible univariate outliers, standardized values (z-scores) were used. Seven univariate outlier cases were omitted from the dataset, that were outside the absolute value of 3.29. Calculating Mahalanobis distance values for each case is one method for identifying multiple outliers. 11 multivariate outlier cases were removed from the dataset. For this final dataset, on which all subsequent analyses were conducted, $N = 630$.

3.2. Descriptive Statistics for the Major Study Variables

Descriptive statistics were used to describe the quantitative variables consisting of optimism, ego-resiliency, perceived social support, four ways of coping, namely, problem solving, fatalistic coping, helplessness, seeking support, two posttraumatic cognitions namely, posttraumatic cognitions about self, and posttraumatic cognitions about world, posttraumatic growth, posttraumatic stress and its three subscales namely, hyperarousal, intrusion, avoidance. The descriptives of variables can be seen at Table 3.

Table 3
Descriptive Statistics of Variables Used in the Study

Variables	Mean	SD	Scale Range	Data Range	Alpha
Personal Variables					
1. Optimism	2.53	.53	0-4	.73-3.92	.77
2. Ego-Resilience	1.89	.46	0-3	.64-3	.85
3. Social Support	5.65	1.22	1-7	1-7	.93
Ways of Coping					
4. Problem Focused Coping	2.39	.31	1-3	1.21-3	.89
5. Fatalistic Coping	2.14	.40	1-3	1-3	.83
6. Helplessness	1.70	.36	1-3	1-3	.77
7. Seeking Support	2.16	.36	1-3	1-3	.58
Posttraumatic Cognitions (PTC)					
8. PTC about self	2.15	.99	1-7	1-6	.96
9. PTC about world	4.10	1.38	1-7	1-7	.88
Dependent Variables					
10. PTG	2.82	.96	0-5	.14-4.90	.93
11. Hyperarousal	1.86	1.01	0-4	0-4	.92
12. Intrusion	2.03	.94	0-4	0-4	.93
13. Avoidance	1.58	.77	0-4	0-4	.72
14. Total PTS	1.84	.81	0-4	0-4	.93

3.3. Posttraumatic Stress: Place of Residence (Location) and Gender

To examine the impact of location (Erciş, Van) and gender (male, female) on PTSS a 2x2 Between Subjects ANOVA was conducted. The results showed that gender [$F(1,626) = 20.74, p < .001$; partial $\eta^2 = .03$] and location [$F(1,626) = 30.93, p < .001$; partial $\eta^2 = .05$] had significant main effects on Posttraumatic stress, but the interaction effect was not significant. Women ($M=2.05, SD=.76$) showed significantly higher levels of PTS than men ($M= 1.69, SD=.81$). Participants from Erciş ($M=2.14, SD=.74$) had higher levels of PTS than the participants from Van ($M=1.95, SD=.80$). ANOVA summary for PTS and mean values can be seen at Table 4 and Table 5, respectively.

Table 4
ANOVA Summary Table for Posttraumatic Stress

Source	df	MS	F	P	Effect Size
Gender	1,626	12.24	20.74	.000	.03
Location	1,626	18.25	30.93	.000	.05
Gender x Location	1,626	.20	.34	.561	.001

** $p < .01$, *** $p < .001$

Table 5
Mean Values of Participants' PTS

	Erciş	SD	Van	SD	Total	SD
Male	1.99	.73	1.58	.81	1.69	.81
Female	2.27	.73	1.93	.75	2.05	.76
Total	2.14	.74	1.95	.80	1.85	.81

3.4. Posttraumatic Growth: Location and Gender

To examine location (Erciş, Van) and gender (male, female) differences a 2x2 Between Subjects ANOVA was conducted with PTG. The results revealed that there were significant main effects of gender [$F(1,626) = 12.01, p < .01$; partial $\eta^2 = .02$] and location [$F(1,626) = 11.40, p < .01$; partial $\eta^2 = .02$], but the interaction effect was not significant. Women ($M=3.01, SD=.93$) showed significantly higher levels of PTG than men ($M= 2.67, SD=.96$). Participants from Erciş ($M=3.04, SD=.86$) had higher levels of PTG than the participants from Van ($M=2.73, SD=.99$). ANOVA summary for PTG is presented at Table 6 and mean values are at Table 7.

Table 6
ANOVA Summary Table for PTG

Source	df	MS	F	P	Effect Size
Gender	1,626	10.61	12.01	.001	.02
Location	1,626	10.07	11.40	.001	.02
Gender x Location	1,626	.99	1.12	.29	.002

** $p < .01$, *** $p < .001$

Table 7
Mean Values of Participants' PTG

	Erciş	SD	Van	SD	Total	SD
Male	2.94	.88	2.57	.97	2.67	.96
Female	3.14	.84	2.95	.96	3.01	.93
Total	3.04	.86	2.73	.99	2.82	.96

Table 8
Pearson Product-Moment Correlation for Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Age	1																	
2. Gender (M=1/F=2)	-.27**	1																
3. Location Erci=1/Van=2	.19**	-.09*	1															
4. Loss of Life	-.01	-.06	-.49**	1														
5. Property loss	.27**	-.15**	-.02	.11**	1													
6. Optimism	.01	-.02	.06	-.05	-.13**	1												
7. Ego resilience	-.01	-.05	-.00	.05	.02	.48**	1											
8. Social Support	-.15**	.23**	-.06	.05	-.08*	.36**	.29**	1										
9. Problem Focused Cope	.00	.05	.03	-.03	-.06	.56**	.52**	.29**	1									
10. Fatalistic Cope	-.02	.07	-.14**	.08*	.05	.04	.01	.06	.11**	1								
11. Helplessness	-.08	.08	-.15**	.09*	.06	-.42**	-.20**	-.09*	-.30**	.29**	1							
12. Seeking support	-.14**	.11**	-.12**	.09*	-.06	.14**	.18**	.29**	.24**	.21**	.22**	1						
13. PTC_self	-.08	.06	-.12**	.11**	.12**	-.47**	-.20**	-.21**	-.33**	.20**	.60**	.10**	1					
14. PTC_world	-.13**	.21**	-.15**	.11**	.09*	-.30**	-.12**	-.11**	-.11**	.25**	.39**	.07	.61**	1				
15. PTG	-.11**	.18**	-.15**	.10*	.07	.16**	.23**	.28**	.26**	.32**	.12**	.30**	.08*	.15**	1			
16. Arousal	-.12**	.25**	-.25**	.20**	.08*	-.29**	.01	.05	-.10*	.16**	.44**	.15**	.52**	.46**	.33**	1		
17. Intrusion	-.14**	.23**	-.26**	.20**	.05	-.24**	-.01	.06	-.08*	.16**	.44**	.15**	.48**	.43**	.34**	.91**	1	
18. Avoidance	-.05	.03	-.03	.10*	.05	-.02	.18**	.08*	.11**	.07	.15**	.03	.18**	.15**	.23**	.43**	.40**	1
19. PTS	-.12**	.22**	-.23**	.20**	.07	-.24**	.05	.07	-.05	.16**	.42**	.14**	.49**	.43**	.35**	.95**	.95**	.63**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

3.5. Correlations Among Variables of the Present Study

Pearson correlation coefficients of the study variables are presented in Table 6. Results showed that the outcome variable Posttraumatic Stress was positively correlated with gender (male=1, female=2) ($r = .22, p < .01$), loss of life ($r = .20, p < .01$), fatalistic coping ($r = .16, p < .01$), helpless coping ($r = .42, p < .01$), seeking support ($r = .14, p < .01$), negative cognitions about self ($r = .49, p < .01$), negative cognitions about world ($r = .43, p < .01$), proximity to the epicenter ($r = .23, p < .01$) and Posttraumatic Growth ($r = .35, p < .01$). Whereas age ($r = -.12, p < .01$) and optimism ($r = -.24, p < .01$) were negatively correlated with total Posttraumatic Stress scores. In addition, surprisingly social support was not correlated with PTS scores. So, with younger age, female gender, proximity to the epicenter, loss of life, being pessimistic, using fatalistic, indirect or helpless coping, and having negative posttraumatic cognitions, were related to higher posttraumatic stress scores.

The outcome variable Hyperarousal factor of Posttraumatic Stress was positively correlated with female gender ($r = .25, p < .01$), loss of life ($r = .20, p < .01$), property loss ($r = .08, p < .05$), fatalistic coping ($r = .16, p < .01$), helpless coping ($r = .44, p < .01$), seeking support ($r = .15, p < .01$), negative cognitions about self ($r = .52, p < .01$), negative cognitions about world ($r = .46, p < .01$), proximity to the epicenter ($r = .25, p < .01$) and Posttraumatic Growth ($r = .33, p < .01$). Whereas age ($r = -.12, p < .01$), optimism ($r = -.29, p < .01$), and problem focused coping ($r = -.10, p < .05$) were negatively correlated with total hyperarousal scores. In other words, with younger age, female gender, proximity to the epicenter, loss of life, property loss, being pessimistic, using other coping strategies than problem focused coping, namely fatalistic, indirect or helpless coping, and having negative posttraumatic cognitions, hyperarousal factor of posttraumatic stress scores also increased.

The outcome variable Intrusion factor of Posttraumatic Stress was positively correlated with female gender ($r = .23, p < .01$), loss of life ($r = .20, p < .01$), fatalistic coping ($r = .16, p < .01$), helpless coping ($r = .44, p < .01$), seeking support ($r = .15, p < .01$), negative cognitions about self ($r = .48, p < .01$), negative cognitions about

world ($r = .43, p < .01$), proximity to the epicenter ($r = .26, p < .01$) and Posttraumatic Growth ($r = .34, p < .01$). Whereas age ($r = -.14, p < .01$), optimism ($r = -.24, p < .01$), and problem focused coping ($r = -.08, p < .05$) were negatively correlated with total intrusion scores. With younger age, female gender, proximity to the epicenter, loss of life, being pessimistic, using other coping strategies than problem focused coping, namely fatalistic, indirect or helpless coping, and having negative posttraumatic cognitions, intrusion factor of posttraumatic stress scores also increased.

The correlation analysis about the outcome variable avoidance yielded some different associations with the independent variables. Avoidance was positively correlated with loss of life ($r = .10, p < .05$), ego resilience ($r = .18, p < .01$), problem solving coping ($r = .11, p < .01$), helpless coping ($r = .15, p < .01$), negative cognitions about self ($r = .18, p < .01$), negative cognitions about world ($r = .15, p < .01$), and Posttraumatic Growth ($r = .23, p < .01$). Surprisingly, social support is slightly but positively correlated with avoidance factor ($r = .08, p < .05$). With loss of life, higher ego resilience, using problem focused coping and helpless coping, and having negative posttraumatic cognitions, avoidance scores increased.

Finally, the outcome variable Posttraumatic Growth was positively correlated with female gender ($r = .18, p < .01$), loss of life ($r = .10, p < .05$), optimism ($r = .16, p < .01$), ego resilience ($r = .23, p < .01$), social support ($r = .28, p < .01$), problem focused coping ($r = .26, p < .01$), fatalistic coping ($r = .32, p < .01$), helpless coping ($r = .12, p < .01$), seeking support ($r = .30, p < .01$), negative cognitions about self ($r = .08, p < .05$), negative cognitions about world ($r = .15, p < .01$), proximity to the epicenter ($r = .15, p < .01$), total posttraumatic stress ($r = .35, p < .01$), hyperarousal ($r = .33, p < .01$), intrusion ($r = .34, p < .01$), and avoidance ($r = .23, p < .01$). PTG scores were negatively associated with age ($r = -.11, p < .01$). The Pearson Product-Moment correlations are presented at Table 8 and summary of the significant correlations with the dependent variables are presented at Table 9.

Table 9

Summary of Significant Correlations between the Study Variables and the Dependent Variables

<u>PTSD</u>	<u>Hyperarousal</u>	<u>Intrusion</u>	<u>Avoidance</u>	<u>PTG</u>
+ Neg Cog Self	+ Neg Cog Self	+ Neg Cog Self	+ Neg Cog Self	+ Neg Cog Self
+ Neg Cog	+ Neg Cog	+ Neg Cog	+ Neg Cog	+ Neg Cog
World	World	World	World	World
+ Helplessness	+ Helplessness	+ Helplessness	+ Helplessness	+ Helplessness
+ Fatalistic	+ Fatalistic	+ Fatalistic		+ Fatalistic
+ Seeking	+ Seeking	+ Seeking		+ Seeking
support	support	support		support
	- Problem	- Problem	+ Problem	+ Problem
	focused	focused	focused	focused
- Optimism	- Optimism	- Optimism		+ Optimism
			+ Ego	+ Ego
			Resilience	Resilience
			+ Support	+ Support
+ Loss of Life	+ Loss of Life	+ Loss of Life	+ Loss of Life	+ Loss of Life
- Age	- Age	- Age		- Age
+ Female	+ Female	+ Female		+ Female
Gender	Gender	Gender		Gender
+ Erciş	+ Erciş	+ Erciş		+ Erciş
Epicenter	Epicenter	Epicenter		Epicenter
	+ Property Loss			

3.6. Hierarchical Regression Analyses

In this section, the results of five separate hierarchical regression analyses conducted to see possible predictor effects of personal, environmental, disaster related factors and coping and appraisals associated with posttraumatic stress and its factors, namely hyperarousal, intrusion, and avoidance and posttraumatic growth will be presented. Preliminary analyses were conducted to ensure no violation of the assumptions of

normality, linearity, and homoscedasticity. Additionally, the correlations among the predictor variables were examined and these are presented in Table 3.6. All correlations were weak to moderate, ranging between $r = .09, p < .05$ and $r = .61, p < .001$. This indicates that multicollinearity was unlikely to be a problem (see Tabachnick and Fidell, 2007). Table 10 presents the variables used in the regression analysis.

Table 10
Variables Used in the Regression Analysis

Block	Predictors	Method
1	Control Variables	Enter
	Age	
	Gender (male=1; female=2)	
2	Personal Factors	Enter
	Optimism	
	Ego Resilience	
	Social Support	
3	Disaster Related Factors	Enter
	Loss of life	
	Property loss	
	Location (1=Erciş; 2=Van)	
4	Cognitions and Coping	Enter
	Problem Focused Cope	
	Fatalistic Cope	
	Helpless Cope	
	Seeking Support Cope	
	Negative cognitions self	
	Negative cognitions world	

3.6.1. Predictors of Posttraumatic Stress

A hierarchical regression analysis was conducted to evaluate the predictors of posttraumatic stress. Only the predictor variables in the model which were significantly correlated with the DV were entered into the regression. In order to control for the effects of each step, enter method was employed. In the first step two sociodemographic factors namely, age and gender (1=male, 2=female) were entered. In the second step, optimism was entered as personal factor. In the third step, loss of life (1=no, 2=yes) and place of the earthquake (1=Erciş, 2=Van) were entered as disaster related factors. Finally, three types of coping, namely fatalistic coping, helplessness, seeking support; and two types of posttraumatic cognitions namely, negative thoughts about self and negative thoughts about world were included in the regression analysis.

The results revealed that, taken as a set, all the predictors in the four-step model accounted for 34% of the total variance in the posttraumatic stress scores, R^2 value of .34 (adjusted $R^2 = .33$). All of the four models were statistically significant. The first step explained 5.2 % of variance, $F(2, 620) = 17.08, p < .001$. The second step made a 5.4 % contribution to the variance, and explained variance increased to 10.6 %, $F(1, 619) = 37.20, p < .001$. The variables in the third step also made a significant contribution to the variance, an incremental 5.1 %, $F(2, 617) = 18.82, p < .001$. The final step explained the highest incremental 18.2% to the variance in posttraumatic stress scores, $F(5, 612) = 33.80, p < .001$. In the final adjusted model six out of predictor variables were statistically significant, with negative cognitions about self ($\beta = .27, p < .001$), negative cognitions about world ($\beta = .14, p < .01$), helplessness ($\beta = .18, p < .001$), loss of life ($\beta = .11, p < .01$), location (1=Erciş, 2=Van) ($\beta = -.08, p < .05$), and gender (male=1, female=2) ($\beta = .16, p < .001$). Table 11 summarizes the results of regression analysis for PTS.

Table 11***Variables Related to Posttraumatic Stress***

Variables	R²	ΔR²	β	t	sr²
Block 1: Demographic Factors	.05	.05***			
Age			-.07	-1.72	.00
Gender (male=1; female=2)			.20	4.91***	.04
Block 2: Personal Factor	.11	.06***			
Age			-.07	-1.77	.00
Gender			.19	4.93***	.04
Optimism			-.23	-6.10***	.05
Block 3: Disaster related factors	.16	.05***			
Age			-.05	-1.16	.00
Gender			.20	5.17***	.04
Optimism			-.22	-5.88***	.05
Loss of life			.15	3.37**	.02
Location (1=Erciř; 2=Van)			-.12	-2.71**	.01
Block 4: Cognitions and Coping	.34	.18***			
Age			-.01	-,29	.00
Gender			.16	4.50**	.02
Optimism			.02	.39	.00
Loss of life			.11	2.90**	.01
Location (1=Erciř; 2=Van)			-.08	-2.04*	.01
Fatalistic cope			-.02	-.46	.00
Helplessness cope			.18	3.95**	.02
Support seeking cope			.03	.70	.00
Negative cognitions about self			.27	5.43**	.03
Negative cognitions about world			.14	3.32**	.01

*p<.05; **p<.01; ***p<.001

3.6.2. Predictors of Hyperarousal Factor

A hierarchical regression analysis was conducted to evaluate the predictors of hyperarousal factor of posttraumatic stress. The predictor variables in the model which were significantly correlated with the DV were entered into the regression. In order to control for the effects of each step, enter method was employed. In the first step two sociodemographic factors namely, age and gender (1=male, 2=female) were entered. In the second step, optimism was entered as a personal factor. In the third step, loss of life (1=no, 2=yes), amount of property loss and place of the earthquake (1=Erciș, 2=Van) were entered as disaster related factors. Finally, four types of coping, namely problem solving, fatalistic coping, helplessness, seeking support; and two types of posttraumatic cognitions namely, negative thoughts about self and negative thoughts about world were included in the regression analysis.

The variables in the final model accounted for 39% of the total variance in the Hyperarousal Factor, R^2 value of .40 (adjusted $R^2 = .38$). All of the models were statistically significant. The first step explained 6.4% of variance, $F(2, 617) = 21.12$, $p < .001$. After the second step, the variance explained increased to 14.2% , $F(1, 616) = 56.28$, $p < .001$. The variables in the third step also made a significant contribution to the variance, an incremental 6.1%, $F(3, 613) = 15.53$, $p < .001$. The final step explained the highest incremental 19.2% to the variance in posttraumatic stress scores, $F(6, 607) = 32.02$, $p < .001$.

In the final adjusted model seven of predictor variables were statistically significant, with negative cognitions about self ($\beta = .31$, $p < .001$), negative cognitions about world ($\beta = .13$, $p < .01$), helplessness ($\beta = .16$, $p < .001$), problem solving coping ($\beta = .10$, $p < .05$), (loss of life ($\beta = .09$, $p < .05$), location (1=Erciș, 2=Van) ($\beta = -.11$, $p < .01$), and female gender ($\beta = .19$, $p < .001$). The unexpected effect of problem solving is thought to be the result of probable suppression effect. Since its zero order correlation with Hyperarousal Factor is $r = -.10$, $p < .05$ but the direction of Unstandardized Beta is positive ($\beta = .10$, $p < .05$). Consequently, it is not

recommended to take this finding into consideration. Table 12 summarizes the results of regression analysis for Hyperarousal.

Table 12

Variables Related to Hyperarousal Factor of Posttraumatic Stress

Variables	R²	ΔR²	β	t	sr²
Block 1: Demographic Factors	.06	.06***			
Age			-.05	-1.30	.00
Gender (male=1; female=2)			.23	5.78***	.05
Block 2: Personal Factor	.14	.08***			
Age			-.05	-1.37	.00
Gender			.23	5.85***	.04
Optimism			-.28	-7.50***	.08
Block 3: Disaster related factors	.20	.06***			
Age			-.04	-1.07	.00
Gender			.24	6.25***	.05
Optimism			-.26	-6.99***	.06
Loss of life			.12	2.92**	.01
Property Loss			.07	1.94	.00
Location (1=Erciş; 2=Van)			-.14	-3.38**	.02
Block 4: Cognitions and Coping	.40	.19***			
Age			.00	.10	.00
Gender			.19	5.53***	.03
Optimism			-	-1.76	.00
Loss of life			.09	2.45*	.01
Property Loss			.04	1.03	.00
Location (1=Erciş; 2=Van)			-	-2.92**	.01
Problem Focused Cope			.10	2.47*	.01
Fatalistic Cope			-	-.90	.00
Helplessness Cope			.16	3.65***	.01
Seeking Support			.03	.79	.00
Negative cognitions about self			.31	6.45***	.04
Negative cognitions about world			.13	3.15**	.01

*p<.05; **p<.01; ***p<.001

3.6.3. Predictors of Intrusion Factor

A hierarchical regression analysis was conducted to evaluate the predictors of intrusion factor. The predictor variables in the model which were significantly correlated with the DV were entered into the regression. In order to control the effects of each step, enter method was employed. In the first step two sociodemographic factors namely, age and gender (1=male, 2=female) were entered. In the second step, optimism was entered as a personal factor. In the third step, loss of life (1=no, 2=yes) and place of the earthquake (1=Erciř, 2=Van) were entered as disaster related factors. Finally, four types of coping, namely problem solving, fatalistic coping, helplessness, seeking support; and two types of posttraumatic cognitions namely, negative thoughts about self and negative thoughts about world were included in the regression analysis.

The variables in the final model accounted for 35.6% of the total variance in the Intrusion Factor, R^2 value of .36 (adjusted $R^2 = .34$). All of the models were statistically significant. The first step explained 6% of variance, $F(2, 620) = 19.66, p < .001$. After the second step, the explained variance increased to 11.3%, $F(1, 619) = 37.40, p < .001$. The variables in the third step also made a significant contribution to the variance, an incremental 5.8%, $F(2, 617) = 21.69, p < .001$. The final step explained the highest incremental 18.4% to the variance in posttraumatic stress scores, $F(6, 611) = 29.09, p < .001$. In the final adjusted model seven out of predictor variables were statistically significant, with negative cognitions about self ($\beta = .25, p < .001$), negative cognitions about world ($\beta = .14, p < .01$), helplessness ($\beta = .22, p < .001$), problem solving coping ($\beta = .10, p < .05$), (loss of life ($\beta = .10, p < .01$), location (1=Erciř, 2=Van) ($\beta = -.11, p < .01$), and female gender ($\beta = .16, p < .001$). The unexpected effect of problem solving is thought to be the result of probable suppression effect. Since its zero order correlation with Intrusion Factor is $r = -.08, p < .05$ but the direction of unstandardized Beta is positive ($\beta = .10, p < .05$). Consequently, it is not recommended to take this finding into consideration. Results can be seen at Table 13.

Table 13***Variables Related to Intrusion Factor***

Variables	R²	ΔR²	β	t	sr²
Block 1: Demographic Factors	.06	.06***			
Age			-.08	-2.08*	.01
Gender (male=1; female=2)			.21	5.15***	.04
Block 2: Personal Factor	.11	.05***			
Age			-.08	-2.14*	.01
Gender			.20	5.16***	.04
Optimism			-.23	-6.12***	.05
Block 3: Disaster related factors	.17	.06***			
Age			-.06	-1.41	.00
Gender			.21	5.37***	.04
Optimism			-.22	-5.90***	.05
Loss of life			.14	3.15**	.01
Location (1=Erciş; 2=Van)			-.15	-3.38**	.02
Block 4: Cognitions and Coping	.36	.18***			
Age			-	-.65	.00
Gender			.16	4.60***	.02
Optimism			-	-.67	.00
Loss of life			.10	2.72**	.01
Location (1=Erciş; 2=Van)			-	-2.81**	.01
Problem Focused Cope			.10	2.44*	.01
Fatalistic Cope			-	-.87	.00
Helplessness Cope			.22	4.92***	.03
Seeking Support			.01	.14	.00
Negative cognitions about self			.25	5.07***	.03
Negative cognitions about world			.14	3.16**	.01

*p<.05; **p<.01; ***p<.001

3.6.4. Predictors of Avoidance Factor

A hierarchical regression analysis was conducted to evaluate the predictors of intrusion factor. Only the predictor variables in the model which were significantly correlated

with the DV were entered into the regression. In order to control the effects of each step, enter method was employed. Since the sociodemographic variables were not significantly correlated with the Avoidance Factor, in the first step social support and ego resilience variables were entered. In the second step loss of life (1=no, 2=yes) was entered as a personal factor. Finally, in the third step, two types of coping, namely problem solving and helplessness; and two types of posttraumatic cognitions namely, negative thoughts about self and negative thoughts about world were included in the regression analysis. 4 step model was also implemented but first and third steps were not significant. So considering the correlation coefficients, three-step model was used.

Table 14
Variables Related to Avoidance Factor

Variables	R²	ΔR²	β	t	sr²
Block 1: Personal Factor	.03	.03***			
Ego Resilience			.17	4.21***	.03
Social Support			.03	.76	.00
Block 2: Disaster related factors	.04	.01*			
Ego Resilience			.17	4.14***	.03
Social Support			.03	.68	.00
Loss of life			.09	2.19*	.01
Block 3: Cognitions and Coping	.10	.06***			
Ego Resilience			.18	3.84***	.02
Social Support			.05	1.18	.00
Loss of life			.06	1.44	.00
Problem Focused Cope			.09	1.97	.01
Helplessness Cope			.10	2.01*	.01
Negative cognitions about self			.16	2.82**	.01
Negative cognitions about world			.04	.85	.00

*p<.05; **p<.01; ***p<.001

Among the three factors of Posttraumatic stress, the regression model explained the least variance for the avoidance factor. The variables in the final model accounted for only 10% of the total variance in the Intrusion Factor, R² value of .10 (adjusted R² = .09). All of the models were statistically significant. The first step explained 3.4% of variance, $F(2, 625) = 11.01, p < .001$. After the second step, the variance explained

increased to 4.1%, $F(1, 624) = 4.79, p < .05$. The third step explained the highest incremental 5.9% to the variance in intrusion factor scores, $F(4, 620) = 10.18, p < .001$. In the final adjusted model three out of predictor variables were statistically significant, with negative cognitions about self ($\beta = .16, p < .001$), helplessness ($\beta = .10, p < .05$), and ego resilience ($\beta = .18, p < .001$). Table 14 summarizes the results of regression analysis of Avoidance factor.

3.6.5. Predictors of Posttraumatic Growth

One last hierarchical regression analysis was performed to assess the predictive power of dependent variables on posttraumatic growth. Only the significantly correlated predictor variables in the model were entered into the regression. To control the effects of each step, enter method was employed. In the first step age and gender (1=male, 2=female) were entered. In the second step, social support, optimism and ego resilience were entered as personal factors. In the third step, loss of life (1=no, 2=yes) and place of the earthquake (1=Erciş, 2=Van) were entered as disaster related factors. Finally, four types of coping, namely problem focused, fatalistic, helplessness, seeking support; and two types of posttraumatic cognitions namely, negative thoughts about self and negative thoughts about world were included in the regression analysis.

The multiple correlation coefficient was $R = .51$, indicating that approximately 26% of the variance of posttraumatic growth can be accounted by the dependent variables (adjusted $R^2 = .24$). All of the steps were statistically significant. The first step explained 3.6% of variance, $F(2, 620) = 11.68, p < .001$. After entry of the factors in step two, the variance explained increased to 12.4%, $F(3, 617) = 20.59, p < .001$. The variables in the third step also made a significant but a lesser contribution to the variance, an incremental 1.6%, $F(2, 615) = 5.55, p < .01$. The final step explained the highest incremental 11.6% to the variance in posttraumatic growth scores $F(6, 609) = 16.13, p < .001$. In the final adjusted model six out the predictor variables were statistically significant, with fatalistic coping ($\beta = .23, p < .001$), seeking support ($\beta = .11, p < .01$), problem focused coping ($\beta = .12, p < .05$), ego resilience ($\beta = .12, p < .01$), social support ($\beta = .14, p < .001$), and female gender ($\beta = .10, p < .05$).

The results of regression analysis on PTG can be seen at Table 15. Table 16 summarizes the significant predictors.

Table 15
Variables Related to Posttraumatic Growth

Variables	R²	ΔR²	β	t	sr²
Block 1: Demographic Factors	.04	.04***			
Age			-.07	-1.61	.00
Gender (male=1; female=2)			.16	3.96***	.02
Block 2: Personal Factor	.12	.09***			
Age			-.05	-1.14	.00
Gender			.14	3.36**	.02
Optimism			.02	.36	.00
Ego resilience			.18	4.11***	.02
Social support			.18	4.29***	.03
Block 3: Disaster related factors	.14	.02**			
Age			-.03	-.69	.00
Gender			.14	3.38**	.02
Optimism			.03	.67	.00
Ego resilience			.17	3.99***	.02
Social support			.17	4.09***	.02
Loss of life			.05	1.09	.00
Location (1=Erciř; 2=Van)			-.10	-2.17*	.01
Block 4: Cognitions and Coping	.26	.12***			
Age			-.02	-.41	.00
Gender			.10	2.55*	.02
Optimism			.03	.61	.03
Ego resilience			.12	2.88**	.00
Social support			.14	3.50***	.00
Loss of life			.03	.74	.00
Location (1=Erciř; 2=Van)			-.05	-1.25	.01
Problem Focused Copelem Focused			.12	2.48*	.01
Fatalistic Cope			.23	5.87***	.04
Helplessness Cope			.03	.71	.00
Seeking Support			.11	2.84**	.01

Table 15 (Continued)***Variables Related to Posttraumatic Growth***

Negative cognitions about self	.06	1.15	.00
Negative cognitions about world	.06	1.23	.00

*p<.05; **p<.01; ***p<.001

Table 16***Significant predictors of PTS, PTS subscales, and PTG***

<i>Dependent Variable</i>	<i>Predictor Variables</i>	<i>Model R²</i>
- PTS	Female gender Loss of life Proximity to the epicenter Helplessness coping Negative cognitions about self Negative cognitions about world	.34
- Hyperarousal	Female gender Loss of life Proximity to the epicenter Helplessness coping Problem focused coping Negative cognitions about self Negative cognitions about world	.40
- Intrusion	Female gender Loss of life Proximity to the epicenter Helplessness coping Problem focused coping Negative cognitions about self Negative cognitions about world	.36
- Avoidance	Ego resilience Helplessness Coping Negative cognitions about self	.10

Table 16 (Continued)***Significant predictors of PTS, PTS subscales, and PTG***

- PTG	Female gender	.26
	Ego resilience	
	Social support	
	Problem focused coping	
	Fatalistic Coping	
	Seeking support	

3.7. Multiple Mediation Analyses

Bivariate correlations were used to investigate the relationships among the study variables and to figure out which would be included in the mediation model. In order to test the indirect effects of ego resilience and optimism on posttraumatic stress and posttraumatic growth through posttraumatic cognitions and coping styles, four multiple mediation analyses were tested with bootstrapping procedure in multiple mediation analysis (Preacher & Hayes, 2008) (Table 17). Age, gender, loss of life, amount of property loss, location and perceived social support were taken as covariates, in order to find the psychological variables' effect. Bootstrapping method is known as a solid and valid method, enables testing the effects of multiple mediators in a single model and secure against Type 2 error (Hayes, 2009; Williams & MacKinnon, 2008). An SPSS macro, written by Hayes (2013), named PROCESS, which provide the total, direct and indirect effects, and significance of the test was used for the bootstrapping procedure. Unstandardized indirect effects were calculated for 2,000 bootstrapped samples and 95% bias-corrected and accelerated confidence interval (BCa CI) was employed. The effect is significant (at a $p < 0.05$ level) if the value of a BCa CI does not include zero. In order to find out the unique effects of personal psychological variables gender, age, loss of life, amount of property loss, distance to the epicenter and perceived social support were taken as covariates.

Table 17
Mediation Analyses

Variables		
Independent	Common Mediators	Dependent
1. Ego Resilience	• Problem Focused Coping	PTS
	• Fatalistic Coping	
2. Ego Resilience	• Helplessness	PTG
	• Seeking support	
3. Optimism	• Negative cognitions about self	PTS
	• Negative cognitions about world	
4. Optimism		PTG

3.7.1. Mediator Role of Coping Styles and Posttraumatic Cognitions Between Ego Resilience and Posttraumatic Stress

The first mediation model was implemented to assess whether the relationship between ego resilience and post-traumatic stress was mediated by coping styles and appraisals after controlling for gender, loss of life, property loss, location, age, and social support. The mediators were four coping styles which are problem focused coping, fatalistic coping, helplessness, and seeking social support and two appraisals, namely negative cognitions about self and world (Figure 2). Macro (Preacher & Hayes, 2008) for bootstrapping with resampling size of 10000 was executed in SPSS.

The model with six mediators explained additional 12 %variance ($\Delta R^2=.12$, $F(7,612)=12.14$, $p<.001$). The results indicated that only indirect effects of helplessness ($\beta = -.07$, $SE = .021$), 95% $CI [-.114, -.030]$) and negative cognitions about self were significant ($\beta = -.08$, $SE = .025$), 95% $CI [-.130, -.034]$). Resilience was a significant predictor of post-traumatic stress after controlling the mediating effects of helpless and negative cognitions about self ($\beta = .22$, $SE = .07$, $p = .001$). Therefore, helplessness and negative cognitions about self partially mediated the relationship between ego resilience and post-traumatic stress.

In conclusion, results of the mediation analysis showed that resilience was associated with lower helplessness and negative cognitions about self scores, which, in turn, predicted lower levels of post-traumatic stress. The results of the analysis can be seen at Table 18.

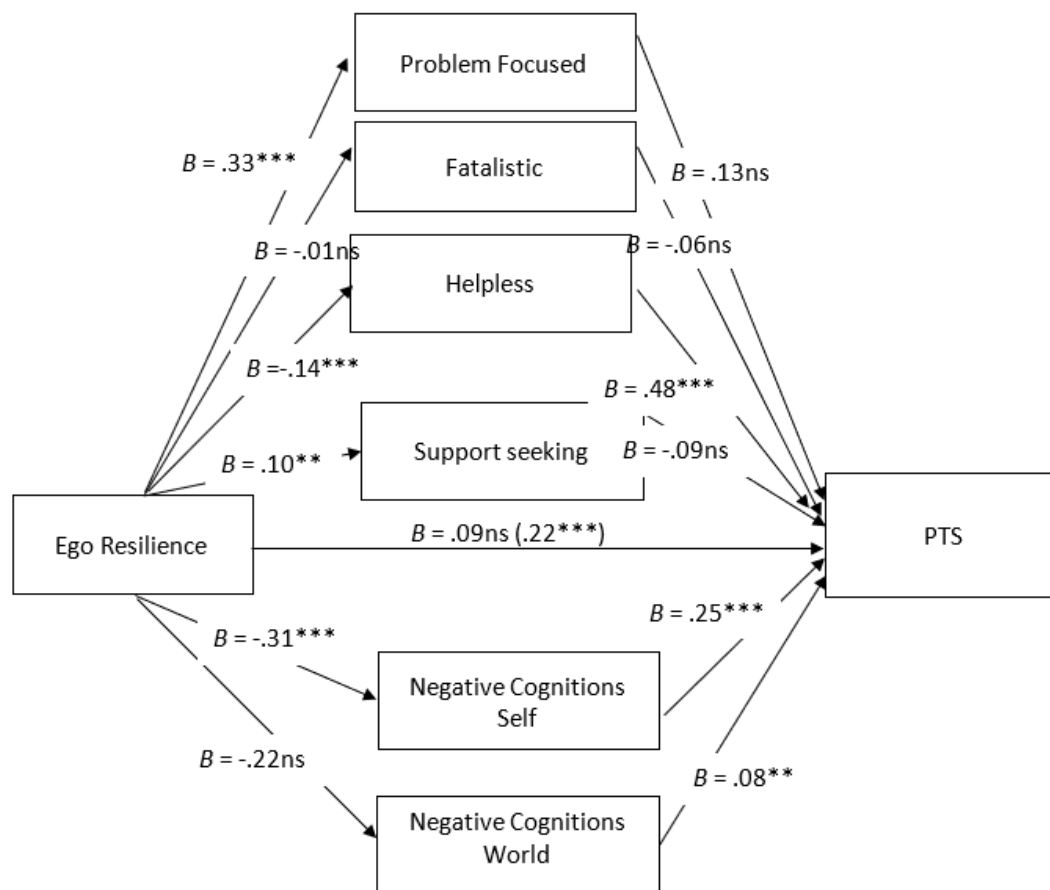


Figure 2

*Indirect Effects of Ego Resilience on Posttraumatic Stress Note. B = Unstandardized regression coefficient, * $p = .01$, ** $p < .001$, *** $p < .001$*

Table 18***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Resilience and Post Traumatic Stress***

	B	t	p
Mediation path a1 (Resilience on Problem Focused Coping)	.33	13.45	.000
Mediation path b1 (Problem Focused Coping on PTS)	.13	1.19	.236
Indirect effect bootstrapped 95% Confidence Interval [-.03, .12]	.04		
Mediation path a2 (Resilience on Fatalistic Coping)	-.01	-.28	.783ns
Mediation path b2 Fatalistic Coping on PTS	-.06	-.88	.379
Indirect effect bootstrapped 95% Confidence Interval [-.01, .01]	.001		
Mediation path a3 (Resilience on Helplessness Coping)	-.14	-4.40	.000
Mediation path b3 Helplessness Coping on PTS	.48	4.95	.000
Indirect effect bootstrapped 95% Confidence Interval [-.11, -.03]	-.07		
Mediation path a4 Resilience on Seeking Support	.10	2.99	.003
Mediation path b4 Seeking Support on PTS	-.09	-1.08	.282
Indirect effect bootstrapped 95% Confidence Interval [-.03, .01]	-.01		
Mediation path a5 Resilience on PTCA Self	-.31	-3.57	.000
Mediation path b5 PTC Self on PTS	.25	6.39	.000
Indirect effect bootstrapped 95% Confidence Interval [-.13, -.03]	-.08		
Mediation path a6 <i>Resilience on PTCA World</i>	-.22	-1.82	.069
Mediation path b6	.08	3.21	.001

Table 18 (Continued)***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Resilience and Post Traumatic Stress***

PTC World on PTS

Indirect effect bootstrapped 95% Confidence Interval [-.04, .00]	-.02		
Total effect, path c (Resilience on PTS)	.09	1.33	.183
Direct effect, path c' (Resilience on PTS with mediators)	.22	3.26	.001
Covariate Gender			
<i>Loss of Life</i>	.23	3.23	.001
<i>Property Loss</i>	.08	2.44	.015
<i>Epicenter</i>	-.22	-2.77	.006
<i>Age</i>	-.01	-1.60	.109
<i>Social Support</i>	-.01	-.27	.784
Model $R^2 = .12$, $F(7, 612) = 12.14$, $p < .001$			

3.7.2. Mediator Role of Coping Styles and Posttraumatic Cognitions Between Ego Resilience and Posttraumatic Growth

The second mediation model was implemented to assess whether the relationship between ego resilience and post-traumatic growth was mediated by coping styles and appraisals after controlling for gender, loss of life, property loss, location, age, and social support. The mediators were four coping styles which are problem focused coping, fatalistic coping, helplessness, and seeking social support and two appraisals, namely negative cognitions about self and world (Figure 3). Macro (Preacher & Hayes, 2008) for bootstrapping with resampling size of 10000 was executed in SPSS.

The model with six mediators explained 15 %variance ($\Delta R^2 = .15$, $F(7, 612) = 15.44$, $p < .001$). The results indicated that indirect effects of problem focused coping ($\beta = .13$, $SE = .045$), 95% $CI [.046, .225]$) and seeking support coping was significant ($\beta = .03$, $SE = .016$), 95% $CI [.001, .066]$). Resilience was a significant predictor of post-traumatic growth after controlling the mediating effects of problem focused and support seeking copings ($\beta = .27$, $SE = .08$, $p = .003$). Therefore, problem focused and

support seeking copings partially mediated the relationship between ego resilience and post-traumatic growth. In conclusion, results of the mediation analysis showed that resilience was associated with higher problem focused and support seeking coping scores, which, in turn, predicted higher levels of post-traumatic growth. Table 19 summarizes the results of multiple mediation analysis.

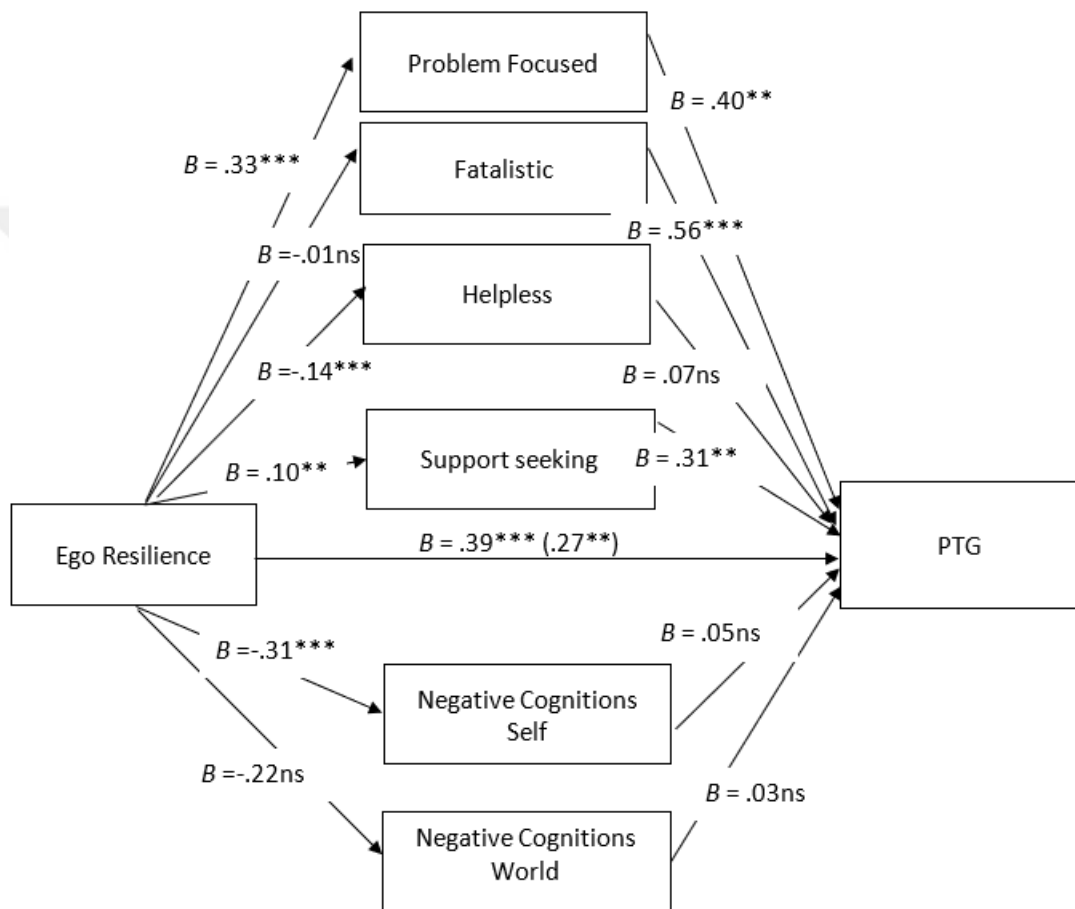


Figure 3

*Indirect Effects of Ego Resilience on Posttraumatic Growth Note. B = Unstandardized regression coefficient, * $p = .01$, ** $p < .001$, *** $p < .001$*

Table 19***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Ego Resilience and Post Traumatic Growth***

	B	t	p
Mediation path a1 (Resilience on Problem Focused Coping)	.33	13.45	.000
Mediation path b1 (Problem Focused Coping on PTG)	.40	2.87	.004
Indirect effect bootstrapped 95% Confidence Interval [.05, .23]	.13		
Mediation path a2 (Resilience on Fatalistic Coping)	-.01	-.28	.783
Mediation path b2 Fatalistic Coping on PTG	.56	5.98	.000
Indirect effect bootstrapped 95% Confidence Interval [-.05, .035]	-.006		
Mediation path a3 (Resilience on Helplessness Coping)	-.14	-4.40	.000
Mediation path b3 Helplessness Coping on PTG	.07	.52	.600
Indirect effect bootstrapped 95% Confidence Interval [-.05, .03]	-.001		
Mediation path a4 Resilience on Seeking Support	.10	2.99	.003
Mediation path b4 Seeking Support on PTG	.31	2.96	.003
Indirect effect bootstrapped 95% Confidence Interval [.01, .07]	.03		
Mediation path a5 Resilience on PTC Self	-.31	-3.57	.000
Mediation path b5 PTC Self on PTG	.05	.91	.364
Indirect effect bootstrapped 95% Confidence Interval [-.05, .02]	-.02		
Mediation path a6 <i>Resilience on PTC World</i>	-.22	-1.82	.069
Mediation path b6	.03	1.04	.300

Table 19 (Continued)***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Ego Resilience and Post Traumatic Growth***

PTC World on PTG

Indirect effect bootstrapped 95% Confidence Interval [-.03, .01]	-.01		
Total effect, path c (Resilience on PTG)	.39	4.75	.000
Direct effect, path c' (Resilience on PTG with mediators)	.27	3.04	.003
Covariate Gender	.27	3.50	.000
<i>Loss of Life</i>	.07	.81	.420
<i>Property Loss</i>	.11	2.77	.006
<i>Epicenter</i>	-.20	-2.10	.037
<i>Age</i>	-.01	-1.37	.170
<i>Social Support</i>	.14	4.46	.000
Model $R^2 = .15$, $F(7, 612) = 15.54$, $p < .001$			

3.7.3. Mediator Role of Coping Styles and Posttraumatic Cognitions Between Optimism and Posttraumatic Stress

The third mediation model was implemented to assess the relationship between optimism and post-traumatic stress when it was mediated by coping styles and appraisals after controlling for gender, loss of life, property loss, location, age, and social support. The mediators were four coping styles which are problem focused coping, fatalistic coping, helplessness, and seeking social support and two appraisals, namely negative cognitions about self and world (Figure 4). Macro (Preacher & Hayes, 2008) for bootstrapping with resampling size of 10000 was executed in SPSS.

The model with six mediators explained additional 17 %variance ($\Delta R^2 = .17$, $F(7, 612) = 17.90$, $p < .001$). The results indicated that indirect effects of problem focused coping ($\beta = .11$, $SE = .04$, 95% CI [.04, .18]), helplessness ($\beta = -.12$, $SE = .03$, 95% CI [-.18, -.06]), negative cognitions about self ($\beta = -.19$, $SE = .04$, 95% CI [-.27, -.13]) and negative cognitions about world ($\beta = -.05$, $SE = .02$, 95% CI [-.09, -.01]) were significant.

Optimism was not a significant predictor of post-traumatic stress after controlling the mediating effects of the mediators ($\beta = -.12$, $SE = .07$, $p > .05$). Problem focused coping, helplessness, negative cognitions about self, and negative cognitions about world fully mediated the relation between optimism and posttraumatic stress. As a result, optimism was associated with higher problem focused coping and with lower helplessness, lower negative cognitions about self and lower negative cognitions about world, which in turn predicted higher levels of posttraumatic stress. Table 20 summarizes the results of multiple mediation analysis.

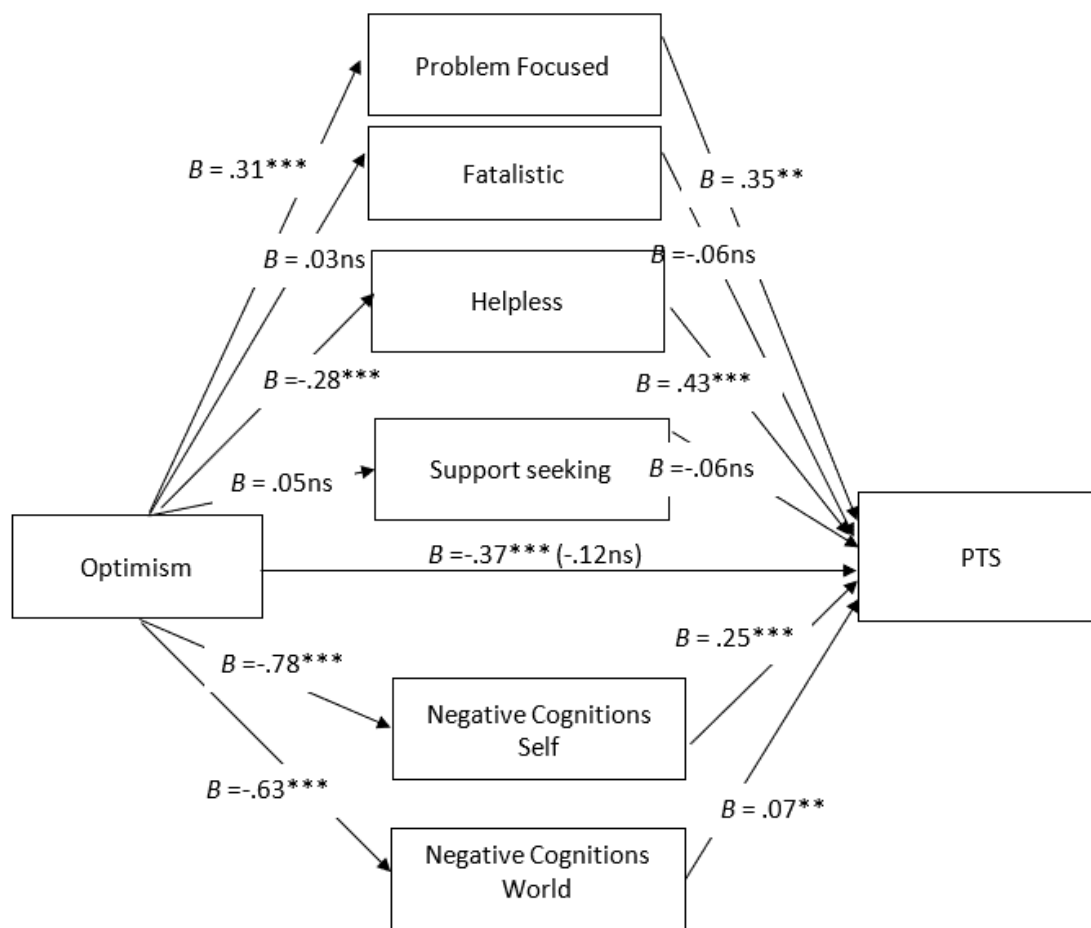


Figure 4

Indirect Effects of Optimism on Posttraumatic Stress Note. B = Unstandardized regression coefficient, * $p = .01$, ** $p < .001$, *** $p < .001$

Table 20***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Optimism and Post Traumatic Stress***

	B	t	p
Mediation path a1 (Optimism on Problem Focused Coping)	.31	14.34	.000
Mediation path b1 (Problem Focused Coping on PTS)	.35	3.30	.001
Indirect effect bootstrapped 95% Confidence Interval [.04,.18]	.11		
Mediation path a2 (Optimism on Fatalistic Coping)	.03	.92	.356ns
Mediation path b2 Fatalistic Coping on PTS	-.06	-.87	.385ns
Indirect effect bootstrapped 95% Confidence Interval [-.01, .01]	-.001		
Mediation path a3 (Optimism on Helplessness Coping)	-.28	-10.56	.000
Mediation path b3 Helplessness Coping on PTS	.43	4.32	.000
Indirect effect bootstrapped 95% Confidence Interval [-.18, -.06]	-.12		
Mediation path a4 Optimism on Seeking Support	.05	1.68	.094ns
Mediation path b4 Seeking Support on PTS	-.06	-.76	.447ns
Indirect effect bootstrapped 95% Confidence Interval [-.01, .01]	-.00		
Mediation path a5 Optimism on PTCA Self	-.78	-10.80	.000
Mediation path b5 PTC Self on PTS	.25	6.15	.000
Indirect effect bootstrapped 95% Confidence Interval [-.27, -.13]	-.19		
Mediation path a6 <i>Optimism on PTC World</i>	-.63	-6.01	.000
Mediation path b6	.07	2.95	.003

Table 20 (Continued)***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Optimism and Post Traumatic Stress***

PTC World on PTS

Indirect effect bootstrapped 95% Confidence Interval [-.35, -.16]	-.26		
Total effect, path c (Optimism on PTS with mediators)	-.37	-.49	-.25
Direct effect, path c' (Optimism on PTS)	-.12	-.25	.16
Covariate Gender	.30	4.62	.000
<i>Loss of Life</i>	.21	3.06	.002
<i>Property Loss</i>	.06	1.69	.091
<i>Epicenter</i>	-.21	-2.67	.008
<i>Age</i>	-.01	-1.28	.199
<i>Social Support</i>	.07	2.49	.013
Model $R^2 = .17$, $F(7, 612) = 17.90$, $p < .001$			

3.7.4. Mediator Role of Coping Styles and Posttraumatic Cognitions Between Optimism and Posttraumatic Growth

The last mediation model was used to assess the relationship between optimism and post-traumatic growth when it was mediated by coping styles and appraisals after controlling for gender, loss of life, property loss, location, age, and social support. The mediators were four coping styles which are problem focused coping, fatalistic coping, helplessness, and seeking social support and two appraisals, namely negative cognitions about self and world (Figure 5). Macro (Preacher & Hayes, 2008) for bootstrapping with resampling size of 10000 was executed in SPSS.

The model with six mediators explained additional 13 %variance ($\Delta R^2 = .13$, $F(7, 612) = 13.22$, $p < .001$). The results indicated that only indirect effect of problem focused coping was significant ($\beta = .16$, $SE = .04$), 95% CI [.07, .24]).

Effect of optimism on posttraumatic growth was not significant ($\beta = .13$, $SE = .09$, $p > .05$). Problem focused coping fully mediated the relationship between optimism and

post-traumatic growth. In conclusion, results of the mediation analysis showed that optimism was associated with higher problem focused coping scores, which, in turn, predicted higher levels of post-traumatic growth. Table 19 summarizes the results of multiple mediation analysis. Table 21 consists of the significant pathways in four mediational analysis. Table 22 summarizes the significant predictors and directions in the mediational analysis.

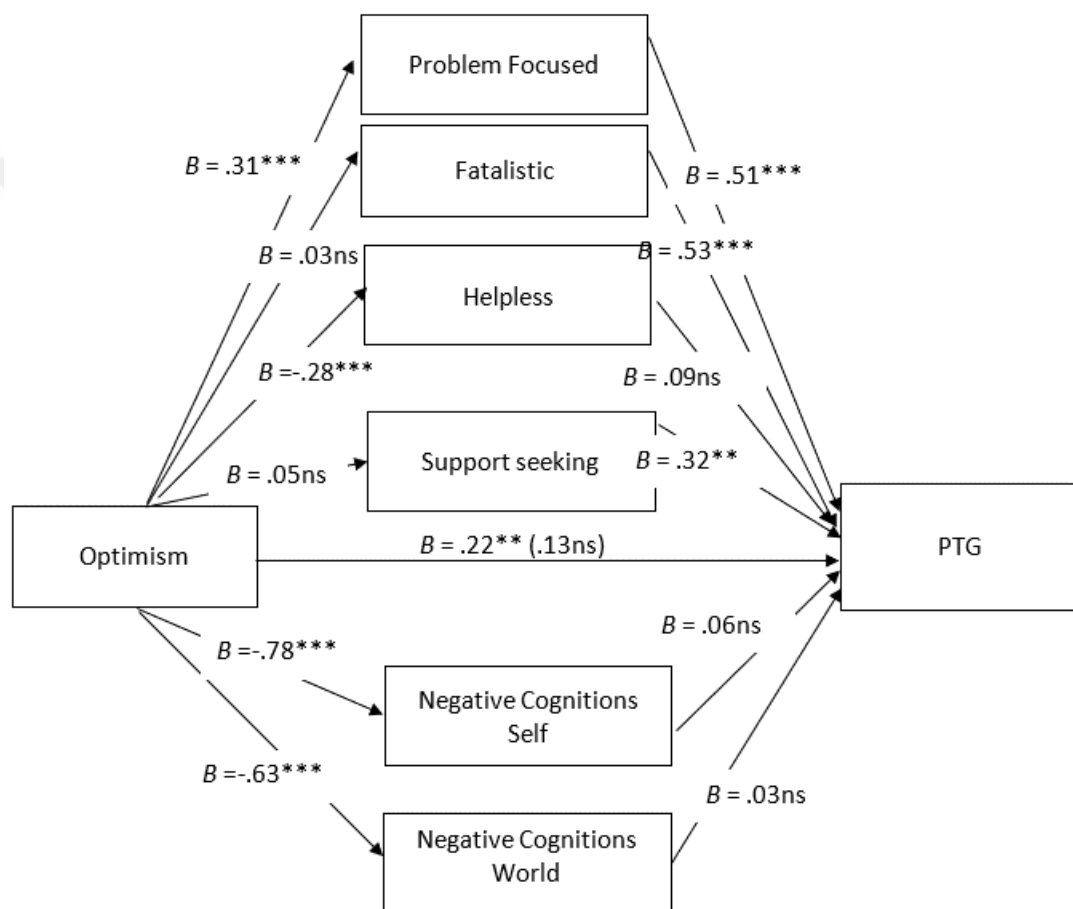


Figure 5

*Indirect Effects of Optimism on Posttraumatic Growth Note. B = Unstandardized regression coefficient, * $p = .01$, ** $p < .001$, *** $p < .001$*

Table 21***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Optimism and Post Traumatic Growth***

	B	t	p
Mediation path a1 (Optimism on Problem Focused Coping)	.31	14.34	.000
Mediation path b1 (Problem Focused Coping on PTG)	.51	3.67	.000
Indirect effect bootstrapped 95% Confidence Interval [.07, .24]	.16		
Mediation path a2 (Optimism on Fatalistic Coping)	.03	.92	.356ns
Mediation path b2 Fatalistic Coping on PTG	.53	5.59	.000
Indirect effect bootstrapped 95% Confidence Interval [-.02, .05]	.02		
Mediation path a3 (Optimism on Helplessness Coping)	-.28	-10.56	.000
Mediation path b3 Helplessness Coping on PTG	.09	.67	.510
Indirect effect bootstrapped 95% Confidence Interval [-.10, .05]	-.02		
Mediation path a4 Optimism on Seeking Support	.05	1.68	.094ns
Mediation path b4 Seeking Support on PTG	.32	3.01	.003
Indirect effect bootstrapped 95% Confidence Interval [-.01, .04]	.02		
Mediation path a5 Optimism on PTCA Self	-.78	-10.80	.000
Mediation path b5 PTC Self on PTG	.06	1.20	.229
Indirect effect bootstrapped 95% Confidence Interval [-.13, .03]	-.05		
Mediation path a6 <i>Optimism on PTC World</i>	-.63	-6.01	.000
Mediation path b6	.03	1.03	.306

Table 21 (Continued)***Mediation Effects of Ways of Coping and Post Traumatic Cognitions on Relationship between Optimism and Post Traumatic Growth***

PTC World on PTG

Indirect effect bootstrapped 95% Confidence Interval [-.06, .02]	-.02		
Total effect, path c (Optimism on PTG)	.22	2.98	.003
Direct effect, path c' (Optimism on PTG with mediators)	.13	1.51	.132
Covariate Gender	.19	2.49	.013
<i>Loss of Life</i>	.06	.72	.47
<i>Property Loss</i>	.11	2.83	.005
<i>Epicenter</i>	-.11	-1.20	.23
<i>Age</i>	-.01	-1.21	.23
<i>Social Support</i>	.12	3.70	.001
Model $R^2 = .13$, $F(7, 612) = 13.22$, $p < .001$			

Table 22***Significant Mediators and Directions***

<i>Independent Variable</i>	<i>Direction</i>	<i>Mediators</i>	<i>Direction</i>	<i>Dependent Variable</i>
Ego Resilience	-	Helplessness	+	PTS
	-	Negative Cognitions about self	+	
Ego Resilience	+	Problem Focused Coping	+	PTG
	+	Seeking Support	+	PTG
Optimism	+	Problem Focused Coping	+	PTS
	-	Helplessness	+	PTS
	-	Negative Cognitions About Self	+	PTS
	-	Negative Cognitions About World	+	PTS
Optimism	+	Problem Focused Coping	+	PTG

CHAPTER 4

DISCUSSION

The aim of this study was to explore the predictors of posttraumatic stress and posttraumatic growth among the survivors of the Van earthquakes that hit in 2011. Since PTS and PTG stems from the common factor, namely traumatic event and coping efforts, Schaefer and Moose's Life Crises and Growth Model (1992) used. Joseph and Linley (2005) stated that the theories explaining growth should also include theories explaining PTSD because the emergence mechanisms of growth and posttraumatic symptoms may be similar. In Schaefer and Moos's model there are four main set of variables are in interaction with the output variable. These are personal factors, environmental factors, event related factors, and appraisals and coping. In our model, age, gender, ego-resilience, and optimism were the personal factors; perceived social support was the environmental factor; loss of a significant person, amount of property loss, and proximity to the more devastated area were event related factors; finally, negative cognitions about self, negative cognitions about world, and four ways of coping, namely, problem solving, fatalistic coping, helplessness, and seeking support were among the appraisals and coping set. The output variables were PTG and PTS.

In this chapter, the results of the analysis will be discussed in the light of relevant literature. Subsequently, limitation of the research and probable clinical implications will be given.

4.1. Predictors of PTS

The trauma literature points out that there is little hesitation in that there is a strong relation between the dose (severity) of the traumatic event and response (posttraumatic distress) (Brewin et al., 2000; Salcioglu et al., 2003; Norris et al., 2002; Bonanno et al., 2010; Neria et al., 2008). In our study survivors from Erciş district where the devastation of the earthquake and loss of life were much higher, showed greater posttraumatic stress reactions than the survivors from Van. In the regression analysis, proximity to the epicenter was significant in all firstly entered steps, except in predicting Avoidance variable. Similarly, loss of life as a traumatic event related factor in the model was also a significant predictor of PTS, and this finding was coherent with the literature (Brewin et al., 2000). Unexpected results achieved about avoidance variable will be discussed later.

This finding was also valid for PTG, participants from Erciş represented higher level of PTG than participants from Van. In a study conducted with the civil war survivors of former Yugoslavia, (Krizmanic & Kolesaric, 1996 as cited in Powell et al., 2002), it was seen that individuals coming from those conflict-ridden cities declared both negative and positive changes more than the individuals from less affected by war. Janoff-Bullman (1992) states that in order for an individual to experience both post-traumatic stress symptoms and post-traumatic growth, their assumptions must be shattered and the traumatic event must be severe enough to shatter those assumptions. Thus, PTG emerges when the consequences of traumatic event are severe enough to motivate an exploration for a meaning, but not too severe for the individuals to deal with. Tedeschi and Calhoun (1998) describe the traumatic event as a "seismic event" in their model. Thus, earthquake as a seismic event used as both literally and metaphorically.

Powell et al (2002) propose that the relationship between the PTS and PTG is not linear, rather there is an inverted U-shape relationship. In this inverted U-shape PTG will be highest when the PTS is moderate, and PTG will low if the PTS is too mild or too severe conditions.

Female gender as a risk factor for developing PTSD has been observed widely in the trauma research (Basoglu et al., 2002; Carr et al., 1997; Norris et al., 2002). In the present study, women reported higher levels of PTS than men, and hierarchical regression analysis showed that, female gender was a significant predictor of total PTS, Hyperarousal, and Intrusion, but not Avoidance. There are several explanations why women affect more negatively from the traumatic events. It is claimed that women experience childhood traumas more often and report their more posttrauma symptoms than men may result in the emergence of the gender differences (Brewin et al., 2000). Moreover, Mercz et al., (2012) the results of the traumatic events should be evaluated with its posttrauma difficulties and burdens. These secondary life stressors may affect the psychological adjustment of women more than men, because of their traditional gender roles. With the same reason, namely gender roles, men may tend to report less their posttraumatic distress, since they may expect to be tough from themselves. The higher rate of PTS symptoms among women may be also due to women's cognitive and affective processing of the event. Tolin & Foa (2006) propose that, this higher rate may be a result of greater perception of threat and loss of control.

Hierarchical regression analysis in the current study showed that coping types and posttraumatic negative appraisals play a very important role in predicting posttraumatic symptomatology. Except avoidance, the predictors of total PTS, intrusion and hyperarousal were very similar. Avoidance factor yielded unexpected relationship which was different from the other two subdomains of PTS, namely intrusion and hyperarousal. Firstly, the zero order correlations of avoidance with study variables were different. For example, problem focused coping was negatively correlated with intrusion and hyperarousal, where avoidance was correlated positively. Being female and proximity to the epicenter were positively, age was negatively correlated with intrusion and hyperarousal, where avoidance did not have any significant correlations with them. Contrary to the trauma literature, avoidance was positively correlated with ego-resilience and social support. The result of regression analysis which was conducted to find the predictors of avoidance was also different; explained variance in avoidance factor was very low which was .10, where it was .36 for intrusion, .40 for hyperarousal, and .34 for total PTS. The hierarchical regression

analysis for avoidance yielded three steps, it was four in others. The significant predictors in the last step were also different. Similar findings about avoidance variable were also seen in another study conducted with the survivors of Van earthquakes (İkizer, 2014). Because of the wording, the questions may be understood as a positive way, rather as a symptom of PTSD. Some survivors may use trying not to think about the event or its' reminders as a coping strategy, resulting with a short-term relief, may direct them to perceive the avoidance items as favorable. Another explanation about the unexpected results about avoidance factor may be due to cultural context. Avoidance may be taken as a positive way of coping in this collective culture under such a collective traumatic event. Since not becoming a burden for the others or being a rescuer for others are preferred traits in collective cultures, in order to seem tough individuals may have chosen more often this way of coping. Moreover, avoidance may be taken as functional by the survivors, because it may help to escape from the unwanted emotions in the short run.

The regression analysis, in line with the literature, demonstrated that negative posttraumatic cognitions and coping styles were important in the increasing of PTS symptomatology (Brewin et al., 2000; Norris et al., 2002). Negative (posttraumatic) cognitions about self and about world were among the strong predictors of posttrauma symptomatology. Among posttraumatic cognitions, negative cognitions about world did not predict avoidance. According to Ehlers and Clark's (2000) cognitive model of maintenance of PTSD, posttraumatic negative appraisals and negative personal conclusions about themselves play a central role both feeding the conditioned fear and cultivating the perception of enduring threat resulting in maintaining the PTSD. Those negative cognitions feed the negative emotions such as fear, guilt, anger, shame which in turn also decrease the proper use of coping skills and blocks the processing of the traumatic event. Those cognitions also direct the survivors to have a sense of negative experience without an end and increase the pessimism. The tie between posttraumatic cognitions and the tenacity and severity of PTSD symptom has been supported by the empirical research, decrease in negative cognitions is associated with decreased PTSD symptoms, or vice versa. Moreover, Shahar et al. (2013) illustrate a cyclical pattern between PTSD symptoms and posttraumatic negative cognitions which contribute

each other. Psychotherapy research also gives further evidence about the importance of negative cognitions on PTSD symptoms. Psychotherapies, aiming to alter these cognitions, like cognitive processing therapy has been effective in decreasing PTSD symptoms (Kaczurkin & Foa, 2015).

Among the coping strategies helplessness was an important risk factor for PTSD (Agaibi & Wilon, 2005). Helplessness may give damage to the primary and secondary appraisals of the stress (Folkman & Lazarus, 1980). The survivors using more often helplessness may exaggerate the difficulty of the stressful conditions, perceive the situation more uncertain and underestimate their personal resources to overcome the problems. All these mechanisms may increase the distress and anxiety. In current study helplessness coping was found as a significant common predictor of PTS total and its three subdomains, intrusion, hyperarousal and avoidance.

Problem solving coping was another predictor of two PTS subdomains, intrusion and hyperarousal in the current study. Despite majority of the research show that problem solving coping reduces the PTSD symptomatology, still there are controversial findings about the relationship between the use of problem solving and traumatic stress (Aldwin & Yancura, 2004; Norries et al., 2002; Penley, Tomaka, & Wiebe, 2002). According to Folkman and Lazarus (1985), rather than a trait, coping is transactional and it changes in accordance with the needs of the stressful situations. They propose that coping may involve the efforts to change the situation (problem focused coping) or regulate the negative emotions arising because of the adverse situation (emotion-focused coping).

Problem focused coping is more related with psychological well-being and emotion focused coping with more negative psychological results (Norries et al., 2002). However, (Penley et al., 2002) proposes that problem focused coping can be unsuccessful for wellbeing and strengthen the stress. According to Zuckerman et al., (2004), if the individuals see the stressors as controllable then using problem focused coping increase the positive adaptation, in uncontrollable situations emotion-focused coping may result with better outcomes.

Another unusual finding in the current study was the effect of social support on the posttraumatic stress level of the participants. In well-known meta-analysis studies (Brewin et al., 2000; Ozer et al., 2009) social support was one of the robust predictor of lower levels of PTSD. In our study, the regression analysis results yielded that social support was not a significant predictor of PTS symptoms. Moreover, it was positively correlated with Avoidance ($r=.08^*$). On the other hand, Zoellner et al., (1999) propose that, the increasing effect of friendship tensions on PTSD symptomatology is more important than the reducing effect of positive social support on PTS.

One explanation of this may be due to the application of self-report questionnaire resulting with a probable tendency of answering socially desirable way. Another explanation may be about the burden of the participants in posttrauma conditions. Since some of the schools were damaged and the remaining schools were combined, the teachers were working with too many students, with too short break times (5 minutes), and with high course load could which could increase the burden of the teachers that high social support could not help. Similarly, Andrew et al., (2003), negative responses from social support resources were associated with PTS.

One final result about the predictors of PTS symptomatology was, ego-resilience (E-R) significantly predicted avoidance. Contrary to coping, E-R is relatively trait feature of the person to adapt to stressful situations (Block & Block, 1980). It consists of personal strength, positive self-appraisal and openness to new experiences. Individuals presenting higher level of E-R tend to adapt stressful situations more easily, and show higher life satisfaction. The result in the current study stem from socially desirable answering. Another reason may be, higher E-R may give the person an unrealistic self-confidence, and when this unrealistic self-confidence is not sufficient enough to handle the problematic situations, can make the person feel inadequate and trigger avoidance symptoms.

On the other hand, multiple mediation analysis showed that ego resilience was an important variable for decreasing the level of total PTS. Survivors who had high ego

resilience were more likely used helplessness coping and had less negative cognitions about self which in turn led to the development of PTS.

A similar personal variable, namely optimism was not a significant predictor of PTS and its subdomains. The results of multiple mediation analysis showed that, survivors who were more optimist were more likely to use problem focused coping, less likely to use helplessness coping, and less likely to have negative cognitions about self and world, which in turn led to the development of PTS. Thus, being optimist may have helped survivors to act more creatively which would in turn decrease the PTS level.

4.2. Predictors of PTG

Results of regression analysis showed that the predictors of posttraumatic growth were female gender, ego resilience, social support, problem focused coping, fatalistic coping, and seeking support coping. The hierarchical regression analysis of PTG results were more in line with the literature than PTS and its subdomains. Optimism and negative posttraumatic cognitions were not significant in predicting PTG. As mentioned above, female participants presented a higher level of PTG than men in the current study. This finding was in line with the previous studies which show that women expose higher level of PTG than men after traumatic events (Park et al., 1996; Vichnevsky et al., 2010). According to Jin et al., (2004) tendency of women to participate deliberate rumination may result with the consciousness of individual strong parts and appreciation of the things that they have. This awareness may contribute women's PTG.

Optimism is a variable which can be seen more commonly seen in PTS/PTG literature than ego resilience. Basically optimists “tend to expect good rather bad things will happen to them” (Scheir & Carver, 1985, p219). According to Tennen & Affleck (1998), optimists may develop benefit from adversity more than the pessimists. Secondly, they may be more flexible in adaptive coping strategies in stressful conditions. Thirdly, optimists tend to be more successful in handling the needs in face of traumatic event. In current study both optimism and ego resilience (ER) was

positively correlated with PTG. But the multiple regression analysis results showed that only ER was significant predictor. The multiple mediation analysis results also showed that ER was an important variable for PTG, because it had indirect effect on PTG too. Survivors who had high ego resilience were more likely use problem focused and seeking support coping which in turn increased the level of PTG.

Optimism may help the person to have a more positive appraisal and increase resilience (Rioli et al., 2002). Ego resilience, as a personality variable, refers to openness to new experiences, optimism, and better emotion regulation skills (Block & Kremen, 1996). The variance in the PTG may statistically overlap with optimism resulting in optimism as an insignificant factor on PTG. On the other hand, the results of multiple mediation analysis showed that survivors who were more optimist were more likely to use problem focused coping which in turn increased the level of PTG. As a result, despite optimism was not a significant predictor of PTG, but it's positive effect was indirect.

The hierarchical regression analysis showed that, perceived social support was one of the important predictors of PTG. Higher level of social support made positive contribution to the PTG level. Social support is one of the key concepts in Schaefer and Moos (1998) model for positive outcomes of life crises. They claim that social support helps the person to use more effective coping skills, increasing better adaptation and resulting with a higher level of PTG. Tedeschi and Calhoun (2004) also cover social support as a predictor of PTG, since supportive others may facilitate to create narratives about changes and provide new perspectives. According to Scharwer et al., (2006), timing and content of the support may be important in developing PTG. In the early stages of posttraumatic period, emotional support is much more needed.

Seeking support as a coping style was found as a significant predictor of PTG. It is proposed that seeking social support and social support may increase the level of PTG (Schaefer & Moos, 1998; Tedeschi & Calhoun, 2004). Seeking support may not only increase the level of social support, but also can increase sympathy towards the seeker, and facilitate a dyadic self-disclosure process which will contribute to the PTG.

Seeking support can also help the individual to accept the situation and her/his weaknesses more realistically, which may in turn facilitate PTG. Sharing emotions with others may help person to desensitize the negative emotions and can help to gain a sense of a part of a wholeness.

Another important significant predictor of PTG was fatalistic coping. The PTG literature has presented that acceptance is an important phenomenon which is positively related with growth. Fatalistic coping is an emotion focused coping strategy that may have helped the individuals to accept the situations, the scope of the problems and their potential resources to facilitate realistic problem focused coping. Moreover, fatalistic coping may also help individuals to handle negative emotions with patience. After a disaster, hoping that God will help may also increase the hope which may contribute to the posttrauma resilience. One important point about fatalistic coping is that, it must be evaluated separately from submissive attitudes. In Islam, fatalistic coping refers to try every possible solution and let the God will decide.

The final significant predictor of PTG was problem focused coping. This finding is consistent with the previous findings conducted with different samples (Wild & Paivio, 2003; Karanci & Erkam, 2007; Tallman, 2013). It is proposed that, PTG develops in line with replacing old schemas with the new ones. When the survivors take actions, analyse the problems, and try to solve step by step the replacement process is accelerated. Searching for new possibilities and solutions for posttraumatic situations helps the survivor to integrate traumatic reality more competently which in turn increase the PTG (Tedeschi & Calhoun, 2008). The discussions above about the interaction of social support, optimism, emotion focused coping (fatalistic coping) show that for a successful problem focused coping, use of successful emotion focused coping is needed, and vice versa.

4.3. Limitations of the Study

One of the limitations of the current study is about its design which is cross sectional. Since the relationship between the predictors and study variables may change over

time, cross sectional design of current study can project one part of the route of the relationships. In order to understand the processes in detail and to draw causal connections longitudinal researches would be a more proper choice. Nevertheless, the current study was conducted with a high number of participants makes the findings more reliable. Moreover, many important variables that are mentioned in the trauma literature used comprehensively in the study, which would help the scholars, clinicians, and policy makers to understand broadly the relationships and help them to take actions in more effective way.

Another limitation is sampling. Our participants were teachers who had experienced one of the two earthquakes that hit Van. Since the education and income level of participants were higher than the average person living in Van, one should act cautiously when generalizing the results. On the other hand, this limitation can be taken as a strength of the study, since this homogenous sample exclude probable confounding variables. Another important factor that should be taken into consideration was the burden of the teachers. The education was suspended more than 40 days after the earthquakes. In order to complete the curriculum, the teachers were working under heavy conditions. The break time between the classes was only five minutes. Some of the school buildings were damaged, so some schools and classes were unified. Because of those crowded classes in some schools and working longer hours teachers were prone to develop burnout. Thus, not only the traumatic events, but also the working conditions can effect the posttrauma reactions. In addition to self report questionnaires, open ended questions asking about posttraumatic life conditions can be an important variable in future researches.

4.4. Strengths and Clinical and Community Implications

When we take the seismic features of Turkey into consideration, the earthquakes as a hazards will be inevitable, but including the fact that most of the population live in the faulty areas, with poorly housing conditions, concluding that earthquakes will act as disasters will be realistic unfortunately. As a result, understanding the posttraumatic

reactions of earthquake survivors will be important for clinicians, policy makers, and researchers.

The studies aiming to find the negative effects of traumatic events are common. There is a huge posttraumatic stress literature conducted with the disaster survivors. On the other hand, studies focusing on the PTG of the earthquake survivors is limited. Finding the predictors of and understanding their complex relationship with PTS and PTG is essential for designing community interventions and individual psychological help mechanisms.

This study is among the rare ones, which focus on the negative and positive outcomes of earthquake trauma in the same sample. Moreover, Schaefer and Moos' (1992) life crisis and personal growth model which includes important variables that are frequently used both theoretically and in research findings, was in the center of this study.

The effect of posttraumatic cognitions on the PTS reactions of the trauma survivors is not widely inquired. Not only for understanding the traumatic reactions mechanisms, but also for changing them in to more adaptive ways, posttraumatic cognitions which play an important role with coping styles, are among the areas that mental health professionals can intervene.

Female gender, loss of life, level of exposure to the trauma, helplessness coping, negative cognitions about self and world were found to be significant predictors of PTS. This finding is crucial when developing a psychological intervention for the earthquake survivors. By determining higher risk groups in the light of this finding, the workforce of the mental health professionals can be used more effectively. Additionally, by tailoring the psychological aid to contain interventions to decrease the negative cognitions and helplessness may result in decreased level of PTS. These interventions can be used in psychoeducational programs, individual trauma consultations, and in trauma psychotherapy.

Significant predictors of PTG were found as female gender, ego resilience, social support, problem focused coping, and fatalistic coping. These findings are important not only for post-trauma adaptation, but also for quality of life. Encouraging the survivors to be more open to new experiences, bringing in new perspectives, assisting them to create new social bondings and/or increasing the quality of present ones can be helpful in gaining positive outcomes. Moreover, teaching active coping skills like analyzing and problem solving, as well as supporting them to use fatalistic coping for accepting the situations that they cannot change may be helpful for the survivors to gain PTG aftermath of the disaster.

Finally, observations of the researchers in the disaster area can also be very important to understand the posttraumatic reactions. Since not only the traumatic event itself, but also negative posttraumatic life conditions have adverse effect on the adaptation of the survivors. It is important for the researchers to develop policies and/or recommending the policy makers that may decrease the negative effects of the traumatic event. After a devastating trauma, the survivors' primary need is the self-care. Mental health professional may take a more serious role in changing the heavy working conditions.

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APPENDICES

A. QUESTIONNAIRE

Bu çalışma, ODTÜ Klinik Psikoloji Doktora öğrencisi Uzm. Psk. Özcan Elçi tarafından, Prof. Dr. Nuray Karancı'nın danışmanlığında yürütülen bir doktora tezi çalışmasıdır. Çalışmanın amacı, **23 Ekim 2011 ve/veya 9 Kasım 2011 tarihlerinde meydana gelen depremleri Van ilinde yaşamış olan kişilerin** yaşadığı deneyimlerini incelemektir.

Çalışmaya katılım gönüllülük esasına dayanmaktadır. Ankette, **sizden kimlik belirleyici hiçbir bilgi istenmemektedir**. Anketin doldurulması yaklaşık olarak 20-25 dakika sürmektedir.

Sorularda doğru ya da yanlış yoktur. Sizin görüş ve değerlendirmeleriniz bu araştırma için çok büyük değer ve önem taşımaktadır. Bu nedenle lütfen değerlendirmelerinizi sizi yansıtacak şekilde dürüstçe ve titizlikle yapınız. Lütfen, her soru için önce verilen açıklamaları dikkatlice okuyunuz ve bu açıklamalar temelinde değerlendirmelerinizi yapınız.

Araştırmaya katılanların kişisel bilgileri ve verilen cevaplar kesinlikle gizli tutulacak, yanıtları başkaları ile paylaşılmayacak ve yalnızca araştırmanın amacına yönelik kullanılacaktır. Araştırmaya katkılarınızdan ötürü teşekkür ederiz.

Çalışma hakkında daha fazla bilgi almak için Özcan Elçi ile iletişime geçebilirsiniz. (E-posta: psk.ozcan@gmail.com, Tel: 0 (312) 210 49 28)

• **Anketin Uygulandığı Yer:**

• **Doğum tarihiniz(Gün/Ay/Yıl):** ____ / ____ / ____ **Cinsiyetiniz:** ☐ Kadın ☐ Erkek

• **Mesleğiniz:**

• **Eğitim durumunuz nedir?**

☐ Yüksekokul ☐ Üniversite ☐ Yüksek Lisans ☐ Doktora

• **Medeni durumunuz:**

☐ Bekâr ☐ Nişanlı ☐ Evli ☐ Boşanmış ☐ Diğer _____

• **Evli iseniz kaç yıldır :** (_____)

• **Yaşamınızın en uzun süresini geçirdiğiniz yer neresidir?**

☐ Büyük şehir (Ankara, İstanbul, İzmir vb) ☐ Şehir ☐ İlçe ☐ Köy

• **Aslen nerelisiniz?**

☐ Van ☐ Van'ın dışından (lütfen belirtiniz): _____

• **Hanenize giren geliri değerlendirdiğinizde aylık toplam gelirin ne düzeydedir?**

☐ Çok düşük ☐ Düşük ☐ Orta ☐ Ortanın Üstü ☐ Yüksek

• **Son iki yılda tedavi gerektiren ruhsal bir rahatsızlık geçirdiniz mi?** ☐ Evet ☐ Hayır

• **Evet ise nasıl bir tedavi gördünüz?** ☐ Psikolojik tedavi ☐ İlaç tedavisi ☐ Diğer: _____

• **Halen bu ruhsal sorun nedeniyle tedavi görmekte misiniz?** ☐ Evet ☐ Hayır

1. Bölüm: Deprem Deneyimi

1. 23 Ekim 2011 tarihinde Tabanlı merkezli deprem esnasında neredeydiniz?

☐ Erciş ☐ Van Merkez ☐ Edremit ☐ Van'ın diğer ilçesi veya köyü ☐ Van ili dışı*

2. 9 Kasım 2011 tarihinde Edremit merkezli deprem esnasında neredeydiniz?

☐ Erciş ☐ Van Merkez ☐ Edremit ☐ Van'ın diğer ilçesi veya köyü ☐ Van ili dışı*

* Her iki deprem için de Van ili dışı seçeneğini işaretlediyseniz ankete devam etmenize gerek yoktur. Katılımınız için teşekkür ederiz. Depremlerden en az birini Van il sınırları içinde geçirdiyseniz lütfen ankete devam ediniz.

3. Bu travmatik olay sırasında aşağıdakilerden her birinin olup olmadığını Evet ya da Hayır'ı işaretleyerek belirtiniz :

		Evet	Hayır
A	Fiziksel bir yara aldınız mı?	E	H
B	Yakınlarınızdan ya da tanıdıklarınızdan biri fiziksel bir yara aldı mı?	E	H
C	Hayatınızın tehlikede olduğunu düşündünüz mü?	E	H
D	Yakınlarınızdan ya da tanıdıklarınızdan bir kişinin hayatının tehlikede olduğunu düşündünüz mü?	E	H
E	Kendinizi çaresiz hissettiniz mi?	E	H
F	Büyük bir korku duygusu yaşadınız mı?	E	H

4. Göçük altında kaldınız mı? ☐ Evet ☐ Hayır

5. Kurtarma çalışmalarına katıldınız mı? ☐ Evet ☐ Hayır

6. Yakınlarınızdan ya da tanıdıklarınızdan can kaybı kaybı var mı? ☐ Evet var ☐ Hayır yok

7. Mal kaybı yaşadınız mı? Yaşadıysanız ne düzeyde mal kaybı yaşadınız?

☐ Hiç mal kaybım olmadı ☐ Biraz mal kaybı ☐ Oldukça mal kaybı ☐ Çok fazla mal kaybı

8. Deprem sonrası çadırda kaldınız mı? ☐ Evet ☐ Hayır

9. Şu an nerede kalmaktasınız?

☐ Ev ☐ Konteyner ☐ Mevlana Evi ☐ Çadır ☐ Hem ev hem evimin yanındaki çadırda

☐ Diğer (lütfen belirtiniz): _____

10. Deprem(ler) sonrası nerede kaldınız?

☐ Van'da kaldım. Nerede barındınız? _____

☐ Van'ın dışına çıktım. Nereye gittiniz: _____ Van'ın dışında ne kadar süre kaldınız? _____

2. Bölüm: Depremi Yaratabileceği Stres

Bu bölümde, stresli bir yaşam olayından sonra insanların yaşayabileceği bazı zorlukların bir listesi sunulmaktadır. Her cümleyi dikkatlice okuyunuz. **Geçtiğimiz yedi gün içerisinde, yaşadığınız depremi düşünerek**, bu zorlukların sizi ne kadar rahatsız ettiğini cümlelerin sağındaki beş kutucuktan birini işaretleyerek belirtiniz.

	H i ç 0	Biraz 1	O r t a Düzeyde 2	Fazla 3	Ç o k F a z l a 4
1. Olayı hatırlatan her türlü şey, kazayla ilgili duygularımı yeniden ortaya çıkardı	0	1	2	3	4
2. Uykuyu sürdürmekte güçlük çektim	0	1	2	3	4
3. Başka şeyler benim olay hakkında düşünmeyi sürdürmeme neden oldu	0	1	2	3	4
4. Alınan ve kızgın hissettim	0	1	2	3	4
5. Olayı düşündüğümde ya da hatırladığımda, bu konunun beni üzmesine izin vermedim	0	1	2	3	4
6. Düşünmek istemediğim halde olayı düşündüm	0	1	2	3	4
7. Olay hiç olmamış gibi ya da gerçek değilmiş gibi hissettim	0	1	2	3	4
8. Olayı hatırlatan şeylerden uzak durdum	0	1	2	3	4
9. Olayla ilgili görüntüler aniden zihnimde canlandı	0	1	2	3	4
10. Ürkek ve diken üstünde hissettim	0	1	2	3	4
11. Olay hakkında düşünmemeye çalıştım	0	1	2	3	4
12. Olayla ilgili olarak hala pek çok duygum vardı, ancak bunlarla hiç ilgilenmedim	0	1	2	3	4
13. Olayla ilgili hissizleşmiş gibiyim	0	1	2	3	4
14. Kendimi olayın olduğu andaki gibi davranırken veya hissederken bulduğum oldu	0	1	2	3	4
15. Uykuya dalmakta güçlük çektim	0	1	2	3	4
16. Olayla ilgili çok yoğun duygu değişiklikleri yaşadım	0	1	2	3	4
17. Olayı hafızamdan (belleğimden) silmeye çalıştım	0	1	2	3	4
18. Dikkatimi toplamakta zorlandım	0	1	2	3	4
19. Olayı hatırlatan şeyler fiziksel tepkiler göstermeme sebep oldu (örneğin, terleme, nefes almada güçlük, baş dönmesi, kalp çarpıntısı, gibi)	0	1	2	3	4
20. Olayla ilgili rüyalar gördüm	0	1	2	3	4
21 Kendimi tetikte ve savunma durumunda hissettim	0	1	2	3	4
22. Olay hakkında konuşmamaya çalıştım	0	1	2	3	4

3. Bölüm: Depremi Yaratabileceği Değişimler

Yaşadığınız deprem(ler)i düşünerek, bu olaydan sonra yaşamış olabileceğiniz bazı değişikliklerin ne derece olduğunu aşağıdaki ölçeği kullanarak işaretleyiniz.

Yaşadığım bu olay nedeniyle bu değişimi hiç yaşamadım = 0

Yaşadığım bu olay nedeniyle bu değişimi çok az yaşadım = 1

Yaşadığım bu olay nedeniyle bu değişimi biraz yaşadım = 2

Yaşadığım bu olay nedeniyle bu değişimi orta düzeyde yaşadım =3

Yaşadığım bu olay bu değişimi oldukça fazla yaşadım =4

Yaşadığım bu olay bu değişimi çok fazla yaşadım = 5

	Hiç yaşamadım	Çok az yaşadım	Biraz yaşadım	Orta düzeyde yaşadım	Oldukça fazla yaşadım	Çok fazla yaşadım
1. Yaşamımda önem verdiğim şeylerin sırası değişti	0	1	2	3	4	5
2. Yaşamımın değerini daha iyi anladım	0	1	2	3	4	5
3. Yeni ilgi alanları geliştirdim	0	1	2	3	4	5
4. Kendime daha fazla güvenmeye başladım	0	1	2	3	4	5
5. Manevi konuları daha iyi anlamaya başladım	0	1	2	3	4	5
6. Zor zamanlarda insanlara güvенеbileceğimi anladım	0	1	2	3	4	5
7. Hayatıma yeni bir yön verdim	0	1	2	3	4	5
8. Başkaları ile daha yakın olma isteğim arttı	0	1	2	3	4	5
9. Duygularımı ifade etme isteğim arttı	0	1	2	3	4	5
10. Zorluklarla başa çıkabileceğimi anladım	0	1	2	3	4	5
11. Hayatta daha iyi şeyler yapabileceğimi anladım	0	1	2	3	4	5
12. Olayların gidişatını kabullenmeyi öğrendim	0	1	2	3	4	5
13. Yaşadığım her güne değer vermeyi öğrendim	0	1	2	3	4	5
14. Önüme daha önce karşılaşmadığım fırsatlar çıktı	0	1	2	3	4	5
15. Başkalarına karşı şefkatli olmayı öğrendim	0	1	2	3	4	5
16. İlişkilerimde gayret göstermeyi öğrendim	0	1	2	3	4	5
17. Değiştirilmesi gerekenleri değiştirmek için daha çok gayret göstermeyi öğrendim.	0	1	2	3	4	5
18. Dini inancım daha güçlendi.	0	1	2	3	4	5
19. Zannettiğimden daha güçlü olduğumu farkettim.	0	1	2	3	4	5
20. İnsanların ne kadar iyi olduklarını öğrendim.	0	1	2	3	4	5
21. Başkalarına ihtiyacım olduğunu kabul ettim.	0	1	2	3	4	5

4. Bölüm: Deprem Sonrası Düşünceler

Yaşadığınız deprem(ler)den sonra gelişen düşüncelerinizi öğrenmek istiyoruz. Aşağıda bu düşüncelerinize yakın veya uzak çeşitli örnekler göreceksiniz. Lütfen, her cümleyi dikkatlice okuyun ve her birine ne kadar katılıp katılmadığınızı belirtin. Travmatik olaylara karşı insanlar farklı tepkiler verecekleri için, aşağıda belirtilen cümlelerin doğrusu veya yanlışı yoktur.

	Kesinlikle katılmıyorum	Katılmıyorum	Pek katılmıyorum	Ne katılıyorum ne katılmıyorum	Biraz katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Bu olay benim davranışım yüzünden oldu.	1	2	3	4	5	6	7
2. Doğru şeyi yapacağım konusunda kendime güvenemiyorum.	1	2	3	4	5	6	7
3. Güçsüz biriyim.	1	2	3	4	5	6	7
4. Öfkemi kontrol edemeyip korkunç bir şey yapabiliyim.	1	2	3	4	5	6	7
5. En ufak bir hayal kırıklığıyla bile baş edemiyorum.	1	2	3	4	5	6	7
6. Eskiden mutlu bir insandım şimdiyse hep mutsuzum.	1	2	3	4	5	6	7
7. İnsanlara güven olmaz.	1	2	3	4	5	6	7
8. Her zaman tetikte olmalıyım.	1	2	3	4	5	6	7
9. İçimde bir şeylerin öldüğünü hissediyorum.	1	2	3	4	5	6	7
10. Kimden zarar geleceği hiçbir zaman bilinemez.	1	2	3	4	5	6	7
11. Çok dikkatli olmalıyım çünkü bundan sonra ne olacağı hiç belli olmaz.	1	2	3	4	5	6	7
12. Yetersiz bir insanım.	1	2	3	4	5	6	7
13. Duygularımı kontrol edemeyeceğim ve korkunç bir şey olacak.	1	2	3	4	5	6	7
14. Eğer olayı düşünürsem, bununla başa çıkamayabilirim.	1	2	3	4	5	6	7
15. Böyle bir insan olduğum için bu olay benim başıma geldi.	1	2	3	4	5	6	7
16. Bu olaydan beri verdiğim tepkiler, benim aklıma kaçırmakta olduğumu gösteriyor.	1	2	3	4	5	6	7
17. Bir daha asla normal duygular hissedemeyeceğim.	1	2	3	4	5	6	7
18. Dünya tehlikeli bir yer.	1	2	3	4	5	6	7
19. Bir başkası olsa bu olayın olmasını engelleyebilirdi.	1	2	3	4	5	6	7
20. Kalıcı bir biçimde kötü yönde değiştim.	1	2	3	4	5	6	7
21. Kendimi insan değil, eşya gibi hissediyorum.	1	2	3	4	5	6	7
17. Bir daha asla normal duygular hissedemeyeceğim.	1	2	3	4	5	6	7
18. Dünya tehlikeli bir yer.	1	2	3	4	5	6	7
19. Bir başkası olsa bu olayın olmasını engelleyebilirdi.	1	2	3	4	5	6	7
20. Kalıcı bir biçimde kötü yönde değiştim.	1	2	3	4	5	6	7
21. Kendimi insan değil, eşya gibi hissediyorum.	1	2	3	4	5	6	7
22. Benim yerimde başkası olsa bu duruma düşmezdi.	1	2	3	4	5	6	7

	Kesinlikle katılmıyorum	Katılmıyorum	Pek katılmıyorum	Ne katılıyorum ne katılmıyorum	Biraz katılıyorum	Katılıyorum	Kesinlikle katılıyorum
23. İnsanlara güvenemem.	1	2	3	4	5	6	7
24. Kendimi insanlardan kopmuş ve yalnız hissediyorum.	1	2	3	4	5	6	7
25. Bir geleceğim kalmadı.	1	2	3	4	5	6	7
26. Kötü şeylerin başıma gelmesini engelleyemem.	1	2	3	4	5	6	7
27. İnsanlar göründükleri gibi değil.	1	2	3	4	5	6	7
28. Yaşadığım olay hayatımı mahvetti.	1	2	3	4	5	6	7
29. Bende yanlış giden bir şeyler var.	1	2	3	4	5	6	7
30. Bu olaydan beri verdiğim tepkiler, benim olayla başa çıkmayı beceremediğimi gösteriyor.	1	2	3	4	5	6	7
31. Bu olayın gerçekleşmesine neden olan, benimle ilgili bir şeyler var.	1	2	3	4	5	6	7
32. Bu olayla ilgili düşüncelerime tahammül edemeyip dağılılabiliyim.	1	2	3	4	5	6	7
33. Artık kendimi tanıyamıyorum.	1	2	3	4	5	6	7
34. İnsanın başına ne zaman kötü bir şey geleceği asla bilinemez.	1	2	3	4	5	6	7
35. Kendime güvenemiyorum.	1	2	3	4	5	6	7
36. Bundan sonra başıma iyi bir şey gelemes.	1	2	3	4	5	6	7

5. Bölüm: Başa Çıkma Yolları

Aşağıda insanların sıkıntılarını gidermek için kullanabilecekleri bazı yollar belirtilmektedir. Yaşadığınız deprem(ler)i göz önüne alarak aşağıdaki yöntemleri ne şekilde kullandığınızı belirtiniz. Cümlelerin her birini dikkatlice okuduktan sonra, yaşadığınız olayın sıkıntısını düşünerek, bu yolları hiç kullanmıyorsanız **hiçbir zaman**, yani 1'i, kimi zaman kullanıyorsanız **bazen**, yani 2'yi, çok sık kullanıyorsanız **her zaman**, yani 3 seçeneğini işaretleyiniz.

	Hiç Bir Zaman	B a z e n	Her Zaman
1. Aklımı kurcalayan şeylerden kurtulmak için değişik işlerle uğraşırım.	1	2	3
2. Bir mucize olmasını beklerim.	1	2	3
3. İyimser olmaya çalışırım.	1	2	3
4. Çevremdeki insanlardan sorunlarımı çözmemde bana yardımcı olmalarını beklerim.	1	2	3
5. Bazı şeyleri büyütmeyp üzerinde durmamaya çalışırım.	1	2	3
6. Sakin kafayla düşünmeye ve öfkelenmemeye çalışırım.	1	2	3
7. Durum değerlendirmesini yaparak en iyi kararı vermeye çalışırım.	1	2	3
8. Ne olursa olsun direnme ve mücadele etme gücünü kendimde hissederim.	1	2	3
9. Olanları unutmaya çalışırım.	1	2	3
10. Başa gelen çekilir diye düşünürüm.	1	2	3
11. Durumun ciddiyetini anlamaya çalışırım.	1	2	3
12. Kendimi kapana sıkışmış gibi hissederim.	1	2	3
13. Duygularımı paylaştığım kişilerin bana hak vermesini isterim.	1	2	3
14. Her işte bir hayır var diye düşünürüm.	1	2	3
15. Dua ederek Allah tan yardım dilerim.	1	2	3
16. Elimde olanla yetinmeye çalışırım.	1	2	3
17. Olanları kafama takıp sürekli düşünmekten kendimi alamam.	1	2	3
18. Sıkıntıları içimde tutmaktansa paylaşmayı tercih ederim.	1	2	3
19. Mutlaka bir çözüm yolu bulabileceğime inanıp bu yolda uğraşırım.	1	2	3
20. İş olacağına varır diye düşünürüm.	1	2	3
21. Ne yapacağıma karar vermeden önce arkadaşlarımdan fikrini alırım.	1	2	3
22. Kendimde her şeye başlayacak gücü bulurum.	1	2	3
23. Olanlardan olumlu bir şey çıkarmaya çalışırım.	1	2	3
24. Bunun alın yazım olduğunu ve değişmeyeceğini düşünürüm.	1	2	3
25. Sorunlarıma farklı çözüm yolu ararım.	1	2	3
26. "Olanları keşke değiştirebilseydim" diye düşünürüm.	1	2	3
27. Hayatla ilgili yeni bir bakış açısı geliştirmeye çalışırdım.	1	2	3

	Hiç Bir Zaman	B a z e n	Her Zaman
28. Sorunlarımı adım adım çözmeye çalıştım.	1	2	3
29. Her şeyin istediğim gibi olamayacağını düşünürüm.	1	2	3
30. Dertlerimden kurtulayım diye fakir fukaraya sadaka veririm.	1	2	3
31. Ne yapacağımı planlayıp ona göre davranırım.	1	2	3
32. Mücadele etmekten vazgeçerim.	1	2	3
33. Sıkıntılarımdan kendimden kaynaklandığını düşünürüm.	1	2	3
34. Olanlar karşısında "kaderim buymuş" derim.	1	2	3
35. "Keşke daha güçlü bir insan olsaydım" diye düşünürüm.	1	2	3
36. "Benim suçum ne" diye düşünürüm.	1	2	3
37. "Allah' ın taktiri buymuş" deyip kendimi teselli etmeye çalıştım.	1	2	3
38. Temkinli olmaya ve yanlış yapmamaya çalışırım.	1	2	3
39. Çözüm için kendim bir şeyler yapmak isterim.	1	2	3
40. Hep benim yüzümden oldu diye düşünürüm.	1	2	3
41. Hakkımı savunmaya çalışırım.	1	2	3
42. Bir kişi olarak olgulaştığımı ve iyi yönde geliştiğimi hissedirim.	1	2	3

6. Bölüm: İyimserlik

Lütfen aşağıdaki cümleleri dikkatle okuduktan sonra kendinize en uygun olan seçeneği işaretleyin.

	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1. Ne olacağının önceden kestirilemediği durumlarda hep en iyi sonucu beklerim.	0	1	2	3	4
2. Kolayca gevşeyip rahatlayabilirim.	0	1	2	3	4
3. Bir isimin ters gitme olasılığı varsa mutlaka ters gider.	0	1	2	3	4
4. Herseyi hep iyi tarafından alırım.	0	1	2	3	4
5. Geleceğim konusunda hep iyimserimdir.	0	1	2	3	4
6. Arkadaşlarımla birlikte olmaktan hoslanırım.	0	1	2	3	4
7. Yapacak şeylerimin olması benim için önemlidir.	0	1	2	3	4
8. İşlerin istediğim gibi yürüyeceğini neredeyse hiç beklemem.	0	1	2	3	4
9. Hiçbir şey benim istediğim yönde gelişmez.	0	1	2	3	4
10. Moraliyim öyle kolay kolay bozulmaz.	0	1	2	3	4
11. Her türlü olayda bir iyi yan bulmaya çalışırım.	0	1	2	3	4
12. Başıma iyi şeylerin geleceğine pek bel bağlamam.	0	1	2	3	4

7. Bölüm:Psikolojik Sağlamlık

Lütfen aşağıdaki ifadeleri dikkatle okuyunuz ve her bir ifadenin sizi ne ölçüde tanımladığını işaretleyiniz.

	Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle Uyar	Her zaman uyar
1. Arkadaşlarıma karşı cömertimdir.	0	1	2	3
2. Beni allak bullak eden durumların üstesinden gelirim ve kısa sürede kendimi toparlarım.	0	1	2	3
3. Yeni ve alışılmadık durumlarla uğraşmak hoşuma gider.	0	1	2	3
4. İnsanlar üzerinde olumlu izlenim bırakmada genelde başarılıyım.	0	1	2	3
5. Daha önce hiç tatmadığım yeni yiyecekleri denemekten hoşlanırım.	0	1	2	3
6. Çok enerjik bir insan olarak tanınırım.	0	1	2	3
7. Daha önceden bildiğim bir yerlere giderken her seferinde farklı yollar kullanmayı severim.	0	1	2	3
8. Birçok insandan daha meraklıyım.	0	1	2	3
9. Tanıştığım insanların çoğu sevebilecek ve canayakın kişilerdir.	0	1	2	3
10. Harekete geçmeden önce genellikle etrafıca düşünürüm.	0	1	2	3
11. Yeni ve farklı şeyler yapmaktan hoşlanırım.	0	1	2	3
12. Günlük yaşamım ilgimi çeken ve beni mutlu eden şeylerle doludur.	0	1	2	3
13. Kendimi rahatlıkla oldukça "güçlü" kişiliğe sahip biri olarak tanımlayabilirim.	0	1	2	3
14. Birine kızdığımda, makul bir sürede bunun üstesinden gelirim.	0	1	2	3

8. Bölüm: Sosyal Destek

Aşağıda 12 cümle ve her birinde de cevaplarınızı işaretlemeniz için 1 den 7ye kadar rakamlar verilmiştir. Her cümlede söyleneni sizin için ne kadar çok doğru olduğunu veya olmadığını belirtmek için o cümle altındaki rakamlardan yalnız bir tanesini daire içine alarak işaretleyiniz. Bu şekilde 12 cümlenin her birinde bir işaret koyarak cevaplarınızı veriniz. Teşekkür ederim.

1. **İhtiyacım olduğunda yanımda olan özel bir insan var.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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2. **Sevinç ve kederimi paylaşabileceğim özel bir insan var.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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3. **Ailem bana gerçekten yardımcı olmaya çalışır.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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4. **İhtiyacım olan duygusal yardımı ve desteği ailemden alırım.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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5. **Beni gerçekten rahatlatan bir insan var.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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6. **Arkadaşlarım bana gerçekten yardımcı olmaya çalışırlar.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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7. **İşler kötü gittiğinde arkadaşlarıma güvenebilirim.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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8. **Sorunlarımı ailemle konuşabilirim.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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9. **Sevinç ve kederlerimi paylaşabileceğim arkadaşlarım var.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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10. **Yaşamımda duygularıma önem veren özel bir insanım.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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11. **Kararlarımı vermede ailem bana yardımcı olmaya isteklidir.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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12. **Sorunlarımı arkadaşlarımla konuşabilirim.**

Kesinlikle hayır	1	2	3	4	5	6	7	Kesinlikle evet
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B. CURRICULUM VITAE

PERSONAL INFORMATION

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EDUCATION

Degree	Institution	Year of Graduation
MS	METU Clinical Psychology	2004
BS	METU Psychology	2000
High School	Elazığ Anatolian High School	1992

WORK EXPERIENCE

Year	Place	Enrollment
2019-	RENGE CONSULTING	Psychotherapist
2007-2019	METU Health and Counseling Center	Clinical Psychologist
2004-2007	OMÜ Psychology Department	Research assistant

FOREIGN LANGUAGES

English

PUBLICATIONS

1) Edinsel, K., & Elçi, Ö. (2015). Psychological distress among the non-relocated and relocated survivors after the August 19th 1999 earthquake in Turkey. *J. Int. Social Res*, 8 (38), 573-582.

- 2) Elçi, Ö. & Karanci, A. (2013). The Influence of exposure severity on posttraumatic stress and posttraumatic growth among the Turkish earthquake survivors. Oral presentation at European Congress of Psychology, Stockholm.
- 3) Elçi, Ö. (2010). Integrating mindfulness techniques to positive psychotherapy. Workshop at V. World Positive Psychotherapy Congress, Istanbul.



C. TURKISH SUMMARY / TRKE ZET

Depremeler, ani ve yıkıcı olmaları, ölüm tehditi içermesi, mali yıkıma sebep olması bakımından zorlayıcı travmatik deneyimlerden biridir. Bu çalışma 23 Ekim 2011 tarihinde Erciş merkezli ve 9 Kasım 2011 tarihinde meydana gelen Van depremlerini yaşayan kişilerde, yaşanan afetin hem olumsuz etkilerini, bir başka deyişle travma sonrası stres düzeylerini, hem de olası olumlu etkisi olan travma sonrası büyümeyi yordayan faktörleri araştırmayı amaçlamaktadır. İlk deprem ikincisinden daha yıkıcıdır. Bu yüzden Erciş örneklemini travmaya Van örnekleminde daha yoğun düzeyde maruz kalmıştır. Araştırmanın çerçevesini travma literatüründeki önemli değişkenler ile Schaefer ve Moos'un (1992) yaşam krizleri ve kişisel gelişim modelleri baz alınarak belirlenmiştir. Kişisel özellikler olarak iyimserlik düzeyi, ego-resilience ve yaş, cinsiyet gibi demografik özellikler kullanılmıştır. Çevresel sistemi temsilen algılanan sosyal destek araştırmaya katılmıştır. Olay etkisini temsilen afeti nerede yaşadığı, can kaybı ve mali kayıp düzeyi değişkenleri araştırmaya dahil edilmiştir. İsmi geçen modelde dört çeşit başa çıkma stili (problem çözme, çaresizlik, kadercilik, sosyal destek arama) ve iki çeşit travma sonrası biliş (kendisi hakkında travma sonrası olumsuz bilişler ve dünya hakkında travma sonrası bilişler) kullanılmıştır. Bütün bu değişkenlerin, travma sonrası stresi ve onun üç alt boyutu olan yeniden deneyimleme, aşırı uyarılma ve kaçınma ile travma sonrası büyümeyi ne düzeyde yordadığı incelenmiştir. Ayrıca ego-resilience ve iyimserlik değişkenlerinin aracı etkileri değerlendirilmiştir.

Deprem ve Van

Türkiye, diğer birçok afet için risk taşıyor olsa da en önemli tehdit kaynağı depremlerdir. Türkiye'nin sismik haritasına göre yüzey alanının %92'si, nüfusun %95'i belirli düzeylerde deprem riski taşıyan alanlarda yaşamaktadır (Dogan, 2013; Korkmaz, 2009). Dünyanın en aktif fay hatlarından biri olan Kuzet Anadolu Fay Hattına sahiptir. Kandilli rasathanesi verilerine göre 1900-2014 yılları arasında 5

şiddetinden büyük 80 tane deprem yaşanmış, bu depremlerin sonucunda 83088 kişi hayatını kaybetmiştir. 1999 17 Ağustos depreminde Marmara bölgesinde 17500 kişi hayatını kaybetmiş, 44000 kişi yaralanmıştır.

Araştırmanın yapıldığı Van'da ise, 23 Ekim ve 9 Kasım 2011 tarihlerinde yaşanan 7.2 ve 5.6 büyüklüğündeki iki deprem sonucunda 644 kişi hayatını kaybetmiş, 1966 kişi yaralanmıştır. Van depreminin yıkıcılığını arttıran sadece şiddeti değildir. Denizden 1720 metre yüksekte olması sebebiyle uzun ve soğuk kış aylarına sahiptir. Depremi yaşayanlar evsiz bir şekilde soğukla mücadele etmek zorunda kalmışlardır. Bölgenin kişi başına düşen geliri Türkiye sıralamasının sonlarında yer almaktadır. Depremin en çok vurduğu alanlardan biri eğitimidir. 68 öğretmen hayatını kaybetmiş, bazı okullar yıkıldığı için sağlam kalan okullar birleştirilmiş, okullar 45 günlüğüne tatil edilmiş olduğu için müfredatın yetiştirilmesi için yoğun eğitime geçilmiştir. Öğretmenler ve öğrenciler yalnızca afetin etkilerini değil, afet sonrası tüketici yaşam şartlarına da maruz kalmışlardır.

Afetler ve Psikolojik Etkileri

Uluslararası Kızıl Haç Örgütünün (2000) yayınladığı bir rapora göre 1990-1999 yılları arasında iki milyardan fazla insan afet yaşamıştır. Afet yaşayan insanlarla yapılmış olan çalışmalarda travma sonrası stres, depresyon, anksiyete, ve diğer psikiyatrik rahatsızlıkların geliştiği gözlenmiştir (Norris, et al 2002). Ayrıca alkol ve madde kötüye kullanımı, ilişki problemleri ve somatic şikayetlerin de arttığı rapor edilmiştir (Brady et al., 2000).

Travmatik olaylarla ilgili yapılmış olan sistematik araştırmalar, travma sonrası stress bozukluğunun en sık araştırılan konu olduğunu göstermiştir. Travmatik olayların olumsuz psikolojik etkileri, araştırmacıların olumsuz sonuçlara çok fazla odaklanmasına ve olası olumlu değişimleri göz ardı etmelerine sebep olmuştur (Glick, 2006). Son 20 yıllık dönemde yapılmış olan araştırmalar, olumsuz olayların olumsuz sonuçları ile başa çıkma süreçlerinin olumlu etkiler sağlayabileceğini göstermiştir. Farklı örneklerde; HIV+ grupları, trafik kazası yaşayanlar, afet

yaşamış olan kişiler, kayıp yaşayanlar, savaş ve diğer insani ile gerçekleştirilen travma mağdurlarında yaşamındaki öncelikleri belirleme, yeni amaçlar edinme gibi olumlu değişiklikler bulunmuştur (Dirik & Karancı, 2008; Kaler et al 2011; Lee et al., 2010).

Travma Kavramı

Travma antik Yunanca'da fiziksel yaralanma anlamına gelmektedir. Zırhlarının delinik kişilerin savunmasız kalması gibi, travma yaşayan kişiler psikolojik olarak savunmasız hissedebilirler. 1900lerin başından beri travmatik nevroz kavramı kullanılsa da travma sonrası stress kavramının tanı kategorisi olarak kullanılması 1980'de gerçekleşir (APA,1980). Travma Sonrası Stres Bozukluğu günümüzde travmatik bir olaya maruz kalma, olayı yeniden deneyimleme, hatırladığı zaman aşırı uyarılma ve kaçınma semptomları ile karakterizedir (APA, 1994).

Doğal afet, terörizm, suç, yakın kaybı, trafik kazaları, cinsel istismar, savaş ve işkence gibi travma yaşayan insanların yaygınlığının ABD'de % 69 gibi yüksek bir oranda olduğu görülürken, travma sonrası stres bozukluğu oranı göreceli olarak oldukça düşük gözlenmiştir, %6.8 (Kessler et al, 1995; Stein et al., 1997; Breslau et al., 2004). Türkiye'de yapılmış olan bir araştırmada da benzer biçimde, travmatik olaylara maruz kalma yaygınlığının yüksek olduğu gözlenmiştir (%67) (Gül & Karancı, 2017). Yakın birini kaybetmek en sık yaşanan travmatik olay olurken, doğal afete maruz kalmak ikinci sıradadır.

Travma sonrası stress kavramını açıklamak için farklı kuramlar geliştirilmiştir. Bunlardan bir tanesi koşullanma kuramıdır. Mowrer'ın (1960) iki faktör kuramına göre anksiyete ve fobik bozukluklarda hem klasik koşullanma hem de operant koşullanma devreye girer. Travmatik olay esnasında nötr uyarıcı olan ses, görüntü, yer, zaman gibi değişkenler, koşulsuz uyarıcı ile (depren gibi) eşleşerek koşullu uyarıcı haline dönüşürler. Başta nötr olan uyaranlara karşı koşullandığı için kişi bu uyaranlarla karşılaştığında yoğun duygusal reaksiyonlar gösterir. Yoğun negatif duygulanım, kişinin koşullanmış olan uyaranlardan kaçınmasına sebep olduğu ve kısa

vadede duygusal rahatlama sağladığı için operant koşullanma gerçekleşmiş olur. Koşullanma kuramına en büyük eleştiri girici düşünceleri ve flashbackleri açıklayamaması ile ilgilidir.

Horowitz'ın Stres Tepkisi kuramına göre (1986), kişinin önceki deneyimleri ile oluşturduğu bilişsel yapıların şimdiki zamanla uyumlu olmaları gereklidir. Travmatik olaylar, var olan şemalar ile gerçek yaşam arasındaki uyumsuzluğu bozar ve kişinin içsel bütünlüğü sekteye uğrar. Bütünlüğü sağlamak için yaşamın gerçekliği le eski bilişler arasında gitgeller yaşanır. Eğer çok fazla gerçekliğe maruz kalırsa yoğun duygusal yükten dolayı aşırı uyarılma, çok fazla eski bilişlere yapışırsa kaçınma semptomları gerçekleşmeye başlar. Horowitz'ın modeli, travma sonrası stresin üç alt boyutunu da açıklaması açısından güçlü olsa da, sosyal destek gibi önemli değişkenlerin etkisini açıklayamamaktadır.

Ehlers ve Clark'ın (2000) bilişsel modeli ise, travmatik stresin bazılarında kendiliğinden nasıl kaybolup, bazılarında neden devam ettiği ile ilgilenir. Bu kurama göre travmatik olay, kişinin bellek sistemini bozar. Parçalı olarak gelen travmatik bilgi tam olarak işlenemediği için, belirsizliğin sebep olduğu duygusal sıkıntılar yaşanır. Kişi istemli bir şekilde hatırlayamadığı için, istemsiz hafıza parçaları ile uğraşır. Kişi bu negatif duygularla baş etmek için işlevsel olmayan başa çıkma biçimlerini hayata geçirir. Otonomisini yitirdikçe, karamsarlaşmaya ve duygusal sıkıntılarından kurtulamayacağına inanmaya başlar. Bu düşüncelere inandıkça olumsuz duyguları artar ve kısır döngü biçiminde negatif duygu negatif düşünceleri besleyecek şekilde travma sonrası stres probleminden mağdur hale gelir.

Afetlerden sonar yapılmış olan travma sonrası stress bozukluğu araştırmaları, yaygınlığın, travmatik olayın türüne, şiddetine, travma dışı faktörlere bağlı olarak oldukça farklı sonuçlar vermektedir (%4-%88) (Böddvarsdóttir & Elklit, 2004; Goenjian et al., 1994). Travma sonrası stresi yordayan değişkenler, travma öncesi, travma anı ve travma sonrası değişkenler olarak gruplandırılır. Travma sonrası stresi yordayan travma öncesi önemli değişkenler şunlardır: kadın cinsiyeti, yaş, düşük eğitim düzeyi, düşük gelir düzeyi, bekar olmak, nevroitiklik, geçmiş travma

deneyimleri ve azınlık gruplarından biri olmak (Norris et al., 2002; Kılıç, 2003). Travma anı ile ilgili olan risk faktörleri, travmanın insan eliyle yapıp yapılmadığı, travma anında yaşadığı dehşet düzeyi, kayıplar, travmatik olaya maruz kalma düzeyi, mal kaybı, göçük altında kalma, afet esnasında yalnız olma gibi değişkenlerdir (Neria et al., 2008; Resnick et al 1992). Travma sonrası stresi yordayan travma sonrası değişkenler ise, kişinin kendisi ya da dünya hakkında olumsuz bilişleri, kendini suçlama, sosyal destek eksikliği, çaresizlik gibi işlevsel olmayan başa çıkma biçimleri ve travma sonrası diğer zorluklardır (Aho et al, 2017).

Travma Sonrası Büyüme

Negative yaşam olayları sonrasında bir çok insan stre, depresyon, ilişki problemleri yaşıypr olsa da, bu durum madalyonun yalnızca bir yüzüdür. Travmatik olaylara maruz kalma sonrasında kişi yaşamındaki öncelikleri değiştirebilir ve kendine yeni yaşam hedefleri koyabilir, kendi güçlü yanlarını daha çok tanıyabilir. Travmatik yaşam olaylarından sonar gerçekleşen bu olumlu değişimlere farklı araştırmacılar farklı isimler kullanmışlardır, algılanan yarar, strese bağlı büyüme, olgunlaşma, ve nihayet en sık kullanılan travma sonrası büyüme (Elder & Clipp, 1989; Collins et al., 1990; Tedeschi & Calhoun, 1998). Tedeschi et al., (1998), travma sonrası büyümenin 5 alanda gerçekleştiğini dile getirir. Bunlar:

- a) Yaşamın kıymetini daha çok bilmek
- b) Daha yakın ve içten insan ilişkileri kurmak
- c) Spiritüel gelişim
- d) Kendi güçlü yanlarının daha çok farkına varmak
- e) Yaşamda yeni fırsatların var olabildiğini görmek.

Schaefer & Moos'un (1992) yaşam krizleri ve büyüme modeline göre pozitif çıktıları en çok belirleyen faktörler sürekli etkileşim içinde olur. Bu modele göre kişinin çevresel sistemi, yani sosyal destek ağları, yaşam kalitesi ve ekonomik olanakları, kişinin bireysel sistemi yani yaş, cinsiyet, gibi demografik özellikleri ile, iyimserlik, ego-resilience gibi kişilik özellikleri etkileşime girer. Bu etkileşimin etkisiyle kişi diğerlerinin yaşamadığı yaşam krizleri yaşayabilir ya da yaşam krizlerini daha

şiddeetli geçirebilir. Yaşam krizlerine ait değişkenler, olayın türü, yakın kaybı, travmaya maruz kalma düzeyi, mali kayıplar gibi değişkenlerdir. Tüm bu değişkenlerin etkileşiminden doğacak şekilde, olayı görmezden gelme ya da haz arama gibi kaçınma başa çıkma araçlarını kullanmak yerine, eğer kişi sosyal destek arama, var olan durumu analiz etmeye çalışma, aksiyon alma gibi yaklaşma başa çıkma biçimlerini kullanırsa üç ana pozitif değişim gerçekleşebilir. Bunlar:

- a) Girişkenlik, kendini anlama, empati, olgunluk gibi kişisel kaynakları güçlenir
- b) Duygu düzenleme becerileri gelişir ve rasyonel düşünme kapasitesi artar
- c) Ailesi ve arkadaşları ile olan sosyal bağları güçlenir ve sosyal kaynakları artar.

Tedeschi ve Calhoun'un (1995) fonksiyonel tanımlayıcı ine göre yaşadığı travmatik olay kişinin var olan varsayımlarını sarsacak kadar güçlü olursa, geçmiş şemalarının geçerli olup olmadığı ile yüzleşmek durumunda kalır. Hem bu durum hem de var olan travmatik olayı anlama çabası kişiye duygusal olarak yük bindirmeye başlar. Bu süreçte istemsizce akla gelen, olayla ilgili girici düşünceler kişide ruminasyon denen düşünme süreçlerini tetikler. Olayı düşünme biçimi başlarda otomatiktir. Ancak bu istemsiz ve otomatik süreç bir süre sonra problem çözme amaçlı bilinçli bir ruminasyona dönüşür. Bilinçli ruminasyon, kişinin yeni yollar bulma, alternatifleri değerlendirme ve yeni anlam arayışlarına iter. Ayrıca kişi ruminasyon yaptıkça bunu çevresi ile paylaşır ve sosyal destek ağı güçlenir. Olası yas süreçlerinin işlenmesi açısından ve sürece sağlıklı devam edebilmek açısından da ruminasyon gereklidir. Bu modele göre, daha iyimser, umutlu ve yeniliklere açık olmayı seven kişiler travma sonrası büyüme TSB geliştirmeye daha çok meyillidir.

Travma sonrası büyümeyi yordayan faktörler kadın cinsiyetine sahip olmak, yüksek eğitim, travmanın şiddeti, sosyal destek ağı, psikolojik sağlamlık, iyimserlik, ego-resilience, aktif başa çıkma stilleri gibi değişkenlerdir (Linely & Joseph, 2004; Elçi, 2004; Tedeschi et al., 1998),

Araştırmanın Amacı

Bu çalışmada Schaefer & Moos'un (1992) yaşam olayları ve kişisel büyüme modeline göre travma sonrası stres (ve üç alt boyutu olan, aşırı uyarılma, yeniden deneyimleme ve kaçınma) ve travma sonrası büyümeyi yordayan faktörler araştırılmıştır.

Doğal afetlere karşı sağlıklı, kalıcı ve sürdürülebilir önlemler alınmadığı sürece, afetler fiziksel ve psikolojik olarak insanları etkilemeye devam edecektir. Bu afetlerin psikolojik etkilerini ve mekanizmalarını araştırmak, uygulanacak psikolojik müdahaleler için de zemin oluşturmaktadır. Bu araştırma afetin hem olumsuz hem de olası olumlu sonuçlarına odaklanarak daha bütüncül bir biçimde değerlendirme yapmayı amaçlamıştır. Ayrıca tram sonrası stres ve büyümeyi aynı örneklem grubunda araştırıyor olması, travma sonrası bilişlerin etkisine bakıyor olması, ego resilience değişkeninin etkisini araştırıyor olması açısından önemlidir.

Yöntem

Araştırmanın katılımcıları, 23 Ekim 2011'de Van depremi ve / veya 9 Kasım 2011'de Van ve / veya Erciş'te Edremit depremi yaşayan ve halen görev yapmakta olan gönüllü öğretmenlerden oluşmaktadır. Depremlerden sonra düzgün bir küme örnekleme yapmak mümkün olmadığından uygun örnekleme yöntemi kullanılmıştır. Van'da 32 farklı okul ve Erciş'te 15 farklı okul ziyaret edilmiş ve bu çalışmaya 687 öğretmen katılmıştır. Veri temizliğinden sonra örneklem büyüklüğü 630 olmuştur. Dahil edilme kriterleri, Van ve / veya Erciş deprem (ler) i deneyimi, öğretmen olarak çalışma ve çalışmaya katılma isteği idi.

Örneklemin yüzde kırk dördü ($n = 278$) kadın ve% 56'sı erkekti ($n = 352$). Katılımcıların% 29'u Erciş ($n = 183$) ve% 71'i Van ilçesinden ($n = 447$) idi. Katılımcıların yaş ortalaması 30,5 ($SS = 6,5$), 21-58 yaş aralığındadır. Ercişli katılımcıların yaş ortalaması 28,5 ($SS = 5,1$) ve Vanlıların yaş ortalaması 32,1 ($SS = 6,8$). Erciş örnekleminde bekarların oranı% 64,3 daha yüksek, Van örneğinde ise% 46,3'tür. Toplam katılımcıların çoğu doğum yeri ile% 72'si Van dışındadır. Erciş

örnekleminin% 85'i Van doğumlu iken bu oran Van grubunda% 66'dır. Ercişli katılımcılar arasında sevdiklerini kaybetme oranı Van grubuna göre çok daha yüksekti, sırasıyla% 86 ve% 69. Van'dan enkaz altında kalan katılımcı yoktu, Erciş'ten 11 katılımcı ise moloz altında kalmıştı. Kurtarma çalışmalarına katılan toplam katılımcı oranı% 18'dir. Erciş grubunun% 28'i depremde sonra çadırda kalmak zorunda kaldı, oran Van için% 50 oldu.

Veri Toplama Araçları

Bu çalışmada veriler şu araçlarla toplanmıştır: Araştırmacı tarafından geliştirilen demografik veri formu, Çok Boyutlu Algılanan Sosyal Destek Ölçeği (MSPSS; Zimet ve ark., 1988), Travma Sonrası Büyüme Envanteri (PTGI; Tedeschi ve Calhoun (1996), Başa Çıkma Yolları Envanteri (Folkman ve Lazarus, 1985), Olayların Etkisi Ölçeği-Gözden Geçirilmiş (Weiss ve Marmar, 1997), Travma Sonrası Biliş Envanteri (Foa ve diğerleri, 1999), Ego Resilience (Block & Kremen, 1996) Yaşam Yönelimi Testi (Scheier & Carver, 1985) uygulanmıştır.

Demografik veri formunda katılımcılardan yaşları, cinsiyetleri, medeni durumları, doğum yerleri, önceki ruh sağlığı öyküleri ve gelirleri ile ilgili soruları cevaplamaları istendi. Formda ayrıca sevilen birini kaybetme, maddi kayıp, çadırda kalma, enkaz altında kalma gibi afet sonrası yaşamla ilgili sorular da vardı.

Çok Boyutlu Algılanan Sosyal Destek Ölçeği (MSPSS), Zimet vd. Tarafından geliştirilmiş 12 maddelik bir ankettir. al. (1988) kişinin algılanan sosyal desteğini üç destek alanından, yani aile, arkadaşlar ve diğer önemli diğer alanlardan ölçmek için. MSPSS, 7 puanlı Likert ölçeğine göre derecelendirilmiştir (1 = hiç katılmıyorum; 7 = çok kesinlikle katılıyorum). MSPSS, Eker ve Arkar (1995) tarafından Türkçe'ye çevrilmiş ve ölçeğin psikometrik özellikleri, tanımlanan üç faktörün toplumumuz için de geçerli olduğunu göstermiştir. Psikiyatri için toplam ortalamaların (Ort. = 53.56, SS = 16.9), cerrahi için (Ort. = 65.98, SS = 15.6) ve (M = 66.4, SD = 11.60) normal için (Eker, Arkar ve Yaldız, 2000). Ölçekten alınan yüksek puanlar, daha yüksek

olumlu sosyal destek algısını gösterir. Bu çalışmada ortalama (Ort. = 67.3, SS = 15.5) ve Cronbach alfa değeri toplam ölçek (.93) için yeterli bulunmuştur.

PTGI, travmatik bir olayla başa çıkmanın bir sonucu olarak insanlarda meydana gelebilecek olumlu değişiklikleri değerlendirmek için Tedeschi ve Calhoun (1996) tarafından geliştirilmiştir. 0'dan (krizim sonucunda bu değişimi yaşamadım) 5'e (krizim sonucunda bu değişimi büyük ölçüde yaşadım) 6'lı Likert ölçeğinde 21 maddeden oluşmaktadır. Çalışmanın katılımcıları için talimatlar, "krizimin bir sonucu olarak" yerine "deprem yaşadktan sonra" olarak değiştirildi. Puanlayıcılar ne kadar yüksekse, daha yüksek bir büyüme seviyesini gösterir. PTGI için toplam puan ve beş alt ölçek puanı verir. yeni olasılıklar (5 öge), başkalarıyla ilgili (7 öge), kişisel güç (4 öge), manevi değişim (2 öge) ve yaşamı takdir etme (3 öge). İlk çalışmalarında Tedeschi ve Calhoun (1996) ölçüldü iç güvenilirlik $\alpha = .90$ Test tekrar test güvenilirliği .71 bulunmuştur. Bu çalışmada, büyüme düzeyini değerlendirmek için ortalama bir PTG puanı kullanılmıştır (M = 2.77, SS = .98, Min = 0, Maks = 5). Bu çalışmada toplam ölçeğin Cronbach alfa güvenilirliği yüksektir (.93).

WCI, insanların stresli bağlamlarda kullandıkları bilişsel ve davranışsal stratejileri incelemek için yaygın olarak kullanılan bir araçtır. Folkman ve Lazarus (1980) tarafından geliştirilmiş ve aynı yazarlar tarafından revize edilmiştir. Karancı ve diğerleri (1999) ölçeği üç noktalı bir ölçekle (1 = asla, 2 = bazen, 3 = her zaman) Dinar depreminden sağ kurtulanlara uyguladılar ve yaptıkları çalışmada beş faktör ortaya çıktı: problem çözme / iyimser, kaderci yaklaşım, çaresizlik yaklaşma, sosyal destek arama ve kaçma. Cronbach alfaları .78 ile .51 arasındaydı. Bu çalışmada Karancı ve arkadaşlarının (1999) çalışmasından elde edilen 42 maddelik WCI formu kullanılmıştır. Faktör analizi, toplam varyansın% 39,8'ini açıklayan dört faktörlü bir çözüm sağlamıştır. Problem çözmede başa çıkma olarak etiketlenen birinci faktöre 19 madde yüklenmiştir. İç güvenilirlik katsayısı .89 olarak bulunmuştur. Kaderci başa çıkma olarak etiketlenen ikinci faktöre Cronbach alfa = .83 ile on madde yüklenmiştir. Dokuz maddeye üçüncü faktör olan çaresizlik yüklenmiştir ve Cronbach alfa güvenilirlik katsayısı .77 olarak bulunmuştur. Son faktöre yüklenen dört madde, dolaylı

başa çıkma / yardım arama olarak isimlendirilmiştir. Bu alt ölçek için Cronbach alfa güvenirlik katsayısı .58 olarak bulunmuştur.

Olayların Etkisi Ölçeği-Gözden Geçirilmiş Ölçeği (IES-R), Weiss ve Marmar (1997) tarafından, önceki afetle ilgili olarak geçen hafta içinde travma sonrası semptom şiddetini değerlendirmek için geliştirilmiştir. Bu ölçek, 0 = hiç değil, 4 = dışsal olarak değişen 5'li Likert ölçeğini kullanan 22 maddeden oluşmaktadır. Ölçek Türkçeye Çorapcıoğlu ve arkadaşları tarafından çevrilmiştir. (2006). Ölçeğin Cronbach alpha .94 olarak bulunmuştur. Ayrıca, toplam IES-R puanlarının Klinisyen Tarafından Uygulanan Travma Sonrası Stres Bozukluğu Ölçeği (CAPS) ile korelasyonunun TSSB'yi tespit etmek için geçerli bir araç olduğunu gösteren (Spearman $r = .71$, $p < .001$) olduğunu bulmuşlardır. Bu çalışmada tüm ölçeğin iç tutarlılığı .93 olarak bulunmuştur. İzinsiz giriş, kaçınma ve aşırı uyarılmanın Cronbach alfa puanları sırasıyla .93, .72 ve .92 idi

Travma Sonrası Biliş Envanteri, travma mağdurlarının olumsuz düşünce ve inançlarını değerlendirmeye yönelik 36 maddelik bir öz bildirim anketidir (Foa ve ark. 1999). Her bir madde yedi puanlı, Likert tipi bir ölçekte derecelendirilir. Orijinal envanterin, kendine olumsuz bakış açısı, dünyaya olumsuz bakış açısı ve kendini suçlama olmak üzere üç faktörü vardır. Foa'nın çalışmasında iç tutarlılık yüksek bulundu, Cronbach's alpha = .97 ve üç haftalık takipte test-tekrar test güvenirliği .85 olarak bulundu.

Ölçek, Yağcıoğlu (2010) tarafından Türkçe'ye çevrilmiştir. Maddelerin faktör analizi, benlikle ilgili olumsuz bilişler ve dünyayla ilgili olumsuz bilişler olmak üzere iki faktör ortaya çıkarmıştır. Toplam envanterin Cronbach alfa değeri benlik ile ilgili olumsuz bilişler için .95, .95 ve dünya ile ilgili olumsuz bilişler için .89 olarak bulunmuştur. Bu çalışmada faktör analizi sonuçları benzerdi. Toplam varyansın % 51'ini açıklayan iki faktörlü bir çözüm en net sonucu verdi. Bu yüzden Yağcıoğlu faktör yükleri kullanılmıştır. Toplam envanter, kendilikle ilgili olumsuz bilişler ve dünyayla ilgili olumsuz bilişler için Cronbach alfa puanları sırasıyla .96 ve .88'dir.

Ego resilience, kişinin sinir bozucu durumsal taleplere yanıtları adapte etme eğilimidir. Ego-Dayanıklılık Ölçeği, 4'lü Likert ölçeğinde yanıtlanan 14 maddeden oluşan, Block ve Kremen (1996) tarafından geliştirilmiştir. Block ve Kremen tarafından bildirilen ölçeğin katsayı alfa güvenirliği .76'dır. Bu çalışmada toplam ortalama puanlar kullanılmış ve Cronbach's alpha .84 olarak hesaplanmıştır.

Yaşam Yönelim Testi (LOT), 12 maddeden oluşan iyimserlik düzeyini ölçmek için (Scheier ve Carver, 1985) tarafından geliştirilmiştir. Maddelerin dördü olumlu (1, 4, 5, 11), diğer dört madde olumsuz (3, 8, 9, 12) ve geri kalan dört madde dolgu maddeleridir (2, 6, 7 ve 10). Beş dereceli likert tipi bir ölçektir. Sekiz maddenin iç tutarlılığı Cronbach alfa .76, test tekrar test güvenirliği .76 olarak bulunmuştur. Bu çalışmada toplam ölçeğin Cronbach alfa değeri .77 olarak hesaplanmıştır.

Verileri toplamak için yedi ölçek ve bir demografik veri formu kullanılmıştır. Veriler toplanmadan önce Orta Doğu Teknik Üniversitesi Etik Kurulu'ndan izinler talep edildi. Araştırmacı, komitenin onayını aldıktan sonra Van Valiliği ve Van Milli Eğitim Müdürlüğü'nden çalışmanın okullarda yapılması için izin istedi. Her iki kurumdan izin alınarak okul müdürlerine bilgi verildi. Van'da 32 okul ve Erciş'te 15 okul ziyaret edildi. Okul müdürlerine ve öğretmenlere araştırmanın amacı hakkında bilgi verildikten sonra, ölçekler gönüllü öğretmenlere uygulanmıştır. Gönüllülerden onam formları da verdiler. Ayrıca, gizlilik, anonimlik ve herhangi bir zamanda cevapları doldurmayı bırakma hakları hakkında bilgi verildi. Katılımcılara iletişim bilgileri de verildi. Ölçekler yaklaşık 40 dakikada tamamlandı.

Sonuçlar

Birinci bölümde veri temizleme süreci sunulmuştur. İkinci bölümde değişkenlerin ortalamalarını ve standart sapmalarını içeren tanımlayıcı istatistikler verilmiştir. Üçüncü bölüm, çalışma soruları dikkate alınarak çok değişkenli varyans analizinin (ANOVA) sonuçlarını kapsamaktadır. Daha sonra araştırma değişkenleri arasındaki korelasyonlar rapor edilmiştir. Beşinci bölümde, travma sonrası stresi (PTS) ve travma sonrası büyümeyi (PTG) yordayan çoklu regresyon analizinin sonuçları verilmiştir.

Veri Temizleme

İlk veri seti, anketi tamamlamayanlar da dahil olmak üzere 687 vaka içermekteydi. Anketi başlattıkları ancak tamamlamadıkları için 36 vakayı kaldırıldı. Ek olarak, rastgele yanıt verdiğiinden şüphelenilen üç vaka daha analizlerden çıkarıldı, 648 kişi kaldı. Vakalardaki eksik değerler % 5'ten fazla olmayan eksik değerler ortalama ile değiştirildi. Olası tek değişkenli aykırı değerleri belirlemek için standartlaştırılmış değerler (z-skorları) kullanılmıştır. 3,29 mutlak değerinin dışında olan yedi tek değişkenli aykırı değer veri kümesinden çıkarıldı. Veri kümesinden 11 çok değişkenli outlier Mahalanobis yintemi ile çıkarıldı, son veri seti için $N = 630$ kaldı.

Lokasyon (Erciş, Van) ve cinsiyetin (erkek, kadın) TSSB üzerindeki etkisini incelemek için 2x2 ANOVA yapıldı. Sonuçlar cinsiyet [$F(1,626) = 20,74, p < .001$; kısmi $\eta^2 = .03$] ve konum [$F(1,626) = 30,93, p < .001$; kısmi $\eta^2 = .05$] travma sonrası stres üzerinde önemli ana etkilere sahipti, ancak etkileşim etkisi anlamlı değildi. Kadınlar (Ort. = 2.05, SS = .76), erkeklerden (Ort. = 1.69, SS = .81) anlamlı düzeyde daha yüksek PTS seviyeleri gösterdi. Ercişli katılımcılar (Ort. = 2.14, SS = .74) Vanlılara göre (Ort. = 1.95, SS = .80) daha yüksek PTS düzeylerine sahipti.

Lokasyon (Erciş, Van) ve cinsiyet (erkek, kadın) farklılıklarını incelemek için PTG ile 2x2 ANOVA yapıldı. Sonuçlar cinsiyetin önemli ana etkilerinin olduğunu ortaya koydu [$F(1,626) = 12,01, p < .01$; kısmi $\eta^2 = .02$] ve konum [$F(1,626) = 11.40, p < .01$; kısmi $\eta^2 = .02$], ancak etkileşim etkisi önemli değildi. Kadınlar (Ort. = 3.01, SS = .93) erkeklerden önemli ölçüde daha yüksek PTG seviyeleri gösterdi ($M = 2.67, SS = .96$). Ercişli katılımcılar (Ort. = 3.04, SS = .86) Vanlılara göre (Ort. = 2.73, SS = .99) daha yüksek PTG düzeylerine sahipti.

Çalışma değişkenlerinin Pearson korelasyon katsayıları hesaplanmıştır. Sonuçlar, Travma Sonrası Stres sonuç değişkeninin cinsiyet (erkek = 1, kadın = 2) ($r = .22, p < .01$), can kaybı ile pozitif yönde ilişkili olduğunu göstermiştir. ($r = .20, p < .01$), kaderci başa çıkma ($r = .16, p < .01$), çaresiz başa çıkma ($r = .42, p < .01$), destek arama

($r = .14, p < .01$), benlik hakkında olumsuz bilişler ($r = .49, p < .01$), dünya hakkında olumsuz bilişler ($r = .43, p < .01$), merkez üssüne yakınlık ($r = .23, p < .01$) ve Travma Sonrası Büyüme ($r = .35, p < .01$). Yaş ($r = -.12, p < .01$) ve iyimserlik ($r = -.24, p < .01$) ile negatif korelasyon bulunmuştur. Ayrıca, şaşırtıcı bir şekilde sosyal destek, TSS puanları ile ilişkili değildi. Yani, genç yaş, kadın cinsiyet, merkez üssüne yakınlık, yaşam kaybı, karamsarlık, kaderci, dolaylı veya çaresiz baş etme ve olumsuz travma sonrası olma bilişler, daha yüksek travma sonrası stres puanları ile ilişkiliydi.

Travma sonrası stresin aşırı uyarılma faktörü, kadın cinsiyet ($r = .25, p < .01$), can kaybı ($r = .20, p < .01$), mülk kaybı ($r = .08, p < .05$), kaderci başa çıkma ($r = .16, p < .01$), çaresiz başa çıkma ($r = .44, p < .01$), destek arama ($r = .15, p < .01$), hakkında olumsuz bilişler benlik ($r = .52, p < .01$), dünya hakkında olumsuz bilişler ($r = .46, p < .01$), merkez üssüne yakınlık ($r = .25, p < .01$) ve Travma Sonrası Büyüme ($r = .33, p < .01$) Yaş ($r = -.12, p < .01$), iyimserlik ($r = -.29, p < .01$) ve problem odaklı başa çıkma ($r = -.10, p < .05$) toplam aşırı uyarılma puanları ile negatif yönde korelasyon göstermiş, başka bir deyişle, daha genç yaş, kadın cinsiyet, merkez üssüne yakınlık, can kaybı, mal kaybı, karamsar olma, problem odaklı başa çıkma dışında başka başa çıkma stratejileri kullanma, yani kaderci dolaylı veya çaresiz başa çıkma ve olumsuz posttravmatik bilişlere sahip olma, travma sonrası stres puanlarının aşırı uyarılma faktörü de artmıştır.

Travma Sonrası Stresin girici düşünceler faktörü kadın cinsiyet ($r = .23, p < .01$), yaşam kaybı ($r = .20, p < .01$), kaderci başa çıkma ($r = .16, p < .01$), çaresiz başa çıkma ($r = .44, p < .01$), destek arama ($r = .15, p < .01$), benlikle ilgili olumsuz bilişler ($r = .48, p < .01$), olumsuz dünya ($r = .43, p < .01$), merkez üssüne yakınlık ($r = .26, p < .01$) ve Travma Sonrası Büyüme ($r = .34, p < .01$) ile ilgili bilişler. Yaş ($r = -.14, p < .01$), iyimserlik ($r = -.24, p < .01$) ve problem odaklı başa çıkma ($r = -.08, p < .05$) ile girici düşünceler zıt yönlü ilişki içindeydi. Daha genç yaşa sahip olma, kadın cinsiyeti, merkez üssüne yakınlık, yaşam kaybı, karamsar olma, problem odaklı başa çıkma dışında başka başa çıkma stratejileri kullanma, yani kaderci, dolaylı veya çaresiz başa çıkma ve olumsuz posttravmatik bilişlere sahip olma, travma sonrası stres puanlarının saldırı faktörü de artmıştır.

Kaçınma ile ilgili korelasyon analizi, bağımsız değişkenlerle bazı farklı ilişkiler ortaya çıkarmıştır. Kaçınma ile yaşam kaybı ($r = .10, p < .05$), ego sağlamlığı ($r = .18, p < .01$), problem çözme ($r = .11, p < .01$), çaresiz başa çıkma ile pozitif korelasyon vardı ($r = .15, p < .01$), benlik hakkında olumsuz bilişler ($r = .18, p < .01$), dünya hakkındaki olumsuz bilişler ($r = .15, p < .01$) ve Travma Sonrası Büyüme ($r = .23, p < .01$) Şaşırtıcı bir şekilde, sosyal destek, kaçınma faktörü ile hafif ama pozitif yönde ilişkilidir ($r = .08, p < .05$). Yaşam kaybı, daha yüksek ego direnci, problem odaklı başa çıkma ve çaresiz baş etme olumsuz travma sonrası bilişlere sahip olmaktan kaçınma puanları artmıştır.

Son olarak, Travma Sonrası Büyüme değişkeni, kadın cinsiyet ($r = .18, p < .01$), yaşam kaybı ($r = .10, p < .05$), iyimserlik ($r = .16, p < .01$) ile pozitif korelasyon gösterdi. Ego sağlamlığı ($r = .23, p < .01$), sosyal destek ($r = .28, p < .01$), problem odaklı başa çıkma ($r = .26, p < .01$), kadenci başa çıkma ($r = .32, p < .01$), çaresiz başa çıkma ($r = .12, p < .01$), destek arama ($r = .30, p < .01$), kendilikle ilgili olumsuz bilişler ($r = .08, p < .05$), dünya hakkında olumsuz bilişler ($r = .15, p < .01$), merkez üssüne yakınlık ($r = .15, p < .01$), toplam travma sonrası stres ($r = .35, p < .01$), aşırı uyarılma ($r = .33, p < .01$), saldırı ($r = .34, p < .01$) ve kaçınma ($r = .23, p < .01$). PTG puanları yaş ile negatif yönde ilişkilidi ($r = -.11, p < .01$).

Travma sonrası stresin yordayıcılarını değerlendirmek için hiyerarşik bir regresyon analizi yapıldı. Sadece modelde DV ile anlamlı düzeyde ilişkili olan yordayıcı değişkenler regresyona girildi. Sonuçlar, küme olarak alındığında, dört aşamalı modeldeki tüm yordayıcıların, travma sonrası stres puanlarındaki toplam varyansın% 34'ünü, R^2 değeri olan .34'ü (düzeltilmiş $R^2 = .33$) açıkladığını ortaya koymuştur. Dört modelin tümü istatistiksel olarak anlamlıydı. İlk adım varyansın% 5.2'sini açıkladı, $F(2, 620) = 17.08, p < .001$. İkinci adım varyansa% 5.4 katkı yaptı ve açıklanan varyansın% 10.6'ya yükseldi, $F(1, 619) = 37.20, p < .001$. Üçüncü adımdaki değişkenler de varyansa önemli bir katkı sağlamıştır, artan bir% 5.1, $F(2, 617) = 18.82, p < .001$. Son adım, travma sonrası stres skorlarındaki varyansa en yüksek artımlı% 18.2'yi açıklamıştır, $F(5, 612) = 33.80, p < .001$. Düzeltilmiş son modelde yordayıcı

değişkenlerden altı tanesi istatistiksel olarak anlamlıydı; benlik hakkında olumsuz bilişler ($\beta = .27, p < .001$), dünya hakkında olumsuz bilişler ($\beta = .14, p < .01$), çaresizlik ($\beta = .18, p < .001$), can kaybı ($\beta = .11, p < .01$), konum (1 = Erciş, 2 = Van) ($\beta = -.08, p < .05$) ve cinsiyet (erkek = 1, kadın = 2) ($\beta = 0.16, p < .001$). Tablo 11, PTS için regresyon analizinin sonuçlarını özetlemektedir.

Bağımlı değişkenlerin travma sonrası büyüme üzerindeki yordayıcı gücünü değerlendirmek için hiyerarşik regresyon analizi yapıldı. Sadece modeldeki anlamlı şekilde ilişkili yordayıcı değişkenler regresyona girildi. Her adımın etkilerini kontrol etmek için enter yöntemi kullanılmıştır. İlk aşamada yaş ve cinsiyet (1 = erkek, 2 = kadın) girildi. İkinci adımda kişisel faktörler olarak sosyal destek, iyimserlik ve ego dayanıklılığı girildi. Üçüncü adımda, afetle ilgili faktörler olarak can kaybı (1 = hayır, 2 = evet) ve depremin yeri (1 = Erciş, 2 = Van) girildi. Son olarak, sorun odaklı, kadercilik, çaresizlik, destek arama olmak üzere dört tür başa çıkma; regresyon analizine kendilikle ilgili olumsuz düşünceler ve dünyayla ilgili olumsuz düşünceler olmak üzere iki tür travma sonrası biliş dahil edilmiştir.

Çoklu korelasyon katsayısı $R = .51$ olup, travma sonrası büyümenin varyansının yaklaşık% 26'sının bağımlı değişkenler tarafından açıklanabileceğini gösterir (düzeltilmiş $R^2 = .24$). Tüm adımlar istatistiksel olarak anlamlıydı. İlk adım varyansın% 3.6'sını açıkladı, $F(2, 620) = 11.68, p < .001$. İkinci adımda faktörlerin girilmesinden sonra, açıklanan varyans% 12.4'e yükseldi, $F(3, 617) = 20.59, p < .001$. Üçüncü adımdaki değişkenler de varyansa anlamlı ancak daha az katkı yaptı, artan bir% 1.6, $F(2, 615) = 5.55, p < .01$. Son adım, travma sonrası büyüme skorlarındaki varyansa en yüksek artımlı% 11.6'yı $F(6, 609) = 16.13, p < .001$ açıklamıştır. Düzeltilmiş son modelde, yordayıcı değişkenlerden altısı, kaderci başa çıkma ($\beta = .23, p < .001$), destek arama ($\beta = .11, p < .01$), problem odaklı başa çıkma ($\beta = .05$) ile istatistiksel olarak anlamlıydı. 12, $p < .05$), ego dayanıklılığı ($\beta = .12, p < .01$), sosyal destek ($\beta = .14, p < .001$) ve kadın cinsiyet ($\beta = .10, p < .05$).

Tartışma

Travma literatürü, travmatik olayın dozu (ciddiyeti) ile yanıt (travma sonrası sıkıntı) arasında güçlü bir ilişki olduğu konusunda çok az tereddüt olduğuna işaret etmektedir (Brewin ve ark., 2000; Salcioğlu ve ark., 2003; Norris ve ark. diğerleri, 2002; Bonanno ve diğerleri, 2010; Neria ve diğerleri, 2008). Çalışmamızda deprem yıkımının ve can kaybının çok daha fazla olduğu Erciş ilçesinden sağ kalanlar, Vanlılara göre daha fazla travma sonrası stres reaksiyonları gösterdi. Regresyon analizinde, merkez üssüne yakınlık, kaçınma değişkeninin dışında, ilk olarak girilen tüm adımlarda önemliydi. Benzer şekilde modelde travmatik olayla ilişkili bir faktör olarak can kaybı da PTS'nin önemli bir yordayıcısıdır ve bu bulgu literatürle uyumludur (Brewin ve ark., 2000). Kaçınma değişkeni ile ilgili elde edilen beklenmedik sonuçlar daha sonra tartışılacaktır.

Bu bulgu PTG için de geçerliydi, Ercişli katılımcılar Vanlılara göre daha yüksek düzeyde PTG'yi temsil ediyordu. Eski Yugoslavya'nın iç savaştan sağ kurtulanları ile yapılan bir çalışmada (Krizmanic ve Kolesaric, 1996 aktaran Powell vd., 2002), çatışmalı şehirlerden gelen bireylerin hem olumlu hem de olumsuz değişiklikler ilan ettikleri görülmüştür Janoff-Bullman (1992), bir bireyin hem travma sonrası stres belirtilerini hem de travma sonrası büyümeyi deneyimleyebilmesi için varsayımlarının parçalanması ve travmatik olayın bu varsayımları parçalayacak kadar şiddetli olması gerektiğini belirtir. Bu nedenle, PTG, travmatik olayın sonuçları bir anlam için bir araştırmayı motive edecek kadar şiddetli olduğunda, ancak bireylerin başa çıkamayacağı kadar şiddetli olmadığında ortaya çıkar.

Travma araştırmalarında kadın cinsiyeti TSSB gelişimi için bir risk faktörü olarak yaygın olarak gözlenmiştir (Başoğlu ve diğerleri, 2002; Carr ve diğerleri, 1997; Norris ve diğerleri, 2002). Kadınların travmatik olaylardan neden daha olumsuz etkilendiğine dair birkaç açıklama var. Kadınların çocukluk çağı travmalarını daha sık yaşadıkları ve erkeklere göre daha fazla travma sonrası belirtilerini bildirdikleri, cinsiyet farklılıklarının ortaya çıkmasına neden olabileceği iddia edilmektedir (Brewin ve ark. 2000). Kadınlarda daha yüksek PTS semptomları oranı, kadınların olayı bilişsel ve

duygusal olarak işlemesine bağlı olabilir. Tolin ve Foa (2006), bu yüksek oranın, daha fazla tehdit algılaması ve kontrol kaybının bir sonucu olabileceğini öne sürmektedir.

Mevcut çalışmadaki hiyerarşik regresyon analizi, baş etme biçimlerinin ve travma sonrası olumsuz değerlendirmelerin, travma sonrası semptomatolojiyi tahmin etmede çok önemli bir rol oynadığını göstermiştir. Ehlers ve Clark'ın (2000) TSSB'nin sürdürülmesine ilişkin bilişsel modeline göre, travma sonrası olumsuz değerlendirmeler ve kendileriyle ilgili olumsuz kişisel sonuçlar, hem koşullu korkuyu besleyen hem de TSSB'nin sürdürülmesiyle sonuçlanan kalıcı tehdit algısını geliştiren merkezi bir rol oynar. Bu olumsuz bilişler korku, suçluluk, öfke, utanç gibi olumsuz duyguları besler ve bu da baş etme becerilerinin doğru kullanımını azaltır ve travmatik olayın işlenmesini engeller. Bu bilişler, hayatta kalanları da sonu gelmeyen olumsuz bir deneyim duygusu yaşamaya yönlendirir ve karamsarlığı artırır.

Başa çıkma stratejileri arasında çaresizlik TSSB için önemli bir risk faktörüdür (Agaibi ve Wilon, 2005). Çaresizlik, stresin birincil ve ikincil değerlendirmelerine zarar verebilir (Folkman ve Lazarus, 1980). Daha sık çaresizlik kullanan mağdurlar, stresli koşulların zorluğunu abartabilir, durumu daha belirsiz algılayabilir ve sorunların üstesinden gelmek için kişisel kaynaklarını hafife alabilir. Tüm bu mekanizmalar sıkıntı ve kaygıyı artırabilir. Mevcut çalışmada çaresizlikle başa çıkma, PTS toplamının ve onun üç alt alanı olan izinsiz giriş, aşırı uyarılma ve kaçınma için önemli bir ortak yordayıcı olarak bulunmuştur.

Regresyon analizi sonuçları, travma sonrası büyümenin yordayıcılarının kadın cinsiyeti, ego sağlamlığı, sosyal destek, problem odaklı başa çıkma, kaderci başa çıkma ve destek arayışıyla başa çıkma olduğunu göstermiştir. PTG sonuçlarının hiyerarşik regresyon analizi, PTS ve alt alanlarına göre literatürle daha uyumluydu. İyimserlik ve olumsuz travma sonrası bilişler, PTG'yi tahmin etmede anlamlı değildi. Yukarıda bahsedildiği gibi, bu çalışmada kadın katılımcılar erkeklerden daha yüksek düzeyde PTG sundular. Bu bulgu, kadınların travmatik olaylardan sonra erkeklere göre daha yüksek düzeyde PTG'ye maruz kaldığını gösteren önceki çalışmalarla uyumluydu (Park ve diğerleri, 1996; Vichnevsky ve diğerleri, 2010)..

İyimserlik, PTS/PTG literatüründe ego sağlamlığından daha sık görülen bir değişkendir. Temelde iyimserler “kendilerine iyi ve kötü şeyler olacağını bekleme eğilimindedirler” (Scheir & Carver, 1985, s219). Tennen ve Affleck'e (1998) göre iyimserler, kötümserlere göre zorluklardan daha fazla fayda sağlayabilir. İkincisi, stresli koşullarda adaptif başa çıkma stratejilerinde daha esnek olabilirler. Üçüncüsü, iyimserler travmatik olay karşısında ihtiyaçları karşılamada daha başarılı olma eğilimindedir. Bu çalışmada hem iyimserlik hem de ego dayanıklılığı (ER), PTG ile pozitif korelasyon gösterdi. Ancak çoklu regresyon analizi sonuçları, yalnızca ER'nin anlamlı bir öngörücü olduğunu gösterdi. Çoklu aracılık analizi sonuçları da, ER'nin PTG için önemli bir değişken olduğunu, çünkü PTG üzerinde de dolaylı etkisi olduğunu göstermiştir.

Mevcut çalışmanın sınırlamalarından biri de kesitsel tasarımıyla ilgilidir. Yordayıcılar ve çalışma değişkenleri arasındaki ilişki zaman içinde değişebileceğinden, mevcut çalışmanın kesitsel tasarımı, ilişkilerin rotasının bir bölümünü yansıtabilir. Diğer bir sınırlama da örneklemedir. Katılımcılarımız Van'ı vuran iki depremde birini yaşamış öğretmenlerdi. Katılımcıların eğitim ve gelir düzeyi Van'da yaşayan ortalamadan yüksek olduğu için sonuçları genellerken dikkatli davranmak gerekir. Öte yandan, bu homojen örnek olası karıştırıcı değişkenleri hariç tuttuğundan, bu sınırlama çalışmanın bir gücü olarak alınabilir. Dikkate alınması gereken bir diğer önemli faktör öğretmenlerin yüküydü.

Güçlü Yönler ve Klinik ve Toplumsal Çıkarımlar

PTS ve PTG ile karmaşık ilişkilerinin yordayıcılarını bulmak ve anlamak, toplum müdahalelerini ve bireysel psikolojik yardım mekanizmalarını tasarlamak için çok önemlidir. Bu çalışma, deprem travmasının olumlu ve olumsuz sonuçlarına aynı örnekleme odaklanan nadir araştırmalar arasında yer almaktadır. Ayrıca hem teorik hem de araştırma bulgularında sıklıkla kullanılan önemli değişkenleri içeren Schaefer ve Moos'un (1992) yaşam krizi ve kişisel gelişim modeli bu çalışmanın merkezinde yer almaktadır. Sadece travmatik tepki mekanizmalarını anlamak için değil, aynı

zamanda onları daha uyumlu hale getirmek için başa çıkma stilleri ile önemli rol oynayan travma sonrası bilişler ruh sağlığı profesyonellerinin müdahale edebileceği alanlar arasındadır.

Kadın cinsiyet, yaşam kaybı, travmaya maruz kalma düzeyi, çaresizlikle başa çıkma, benlik ve dünya hakkında olumsuz bilişler PTS'nin anlamlı yordayıcıları olarak bulundu. Depremzedeler için psikolojik bir müdahale geliştirirken bu bulgu çok önemlidir. Bu bulgu ışığında daha yüksek risk grupları belirlenerek ruh sağlığı profesyonellerinin işgücü daha etkin kullanılabilir. Ek olarak, psikolojik yardımın olumsuz bilişleri ve çaresizliği azaltmak için müdahaleleri içerecek şekilde uyarlanması, PTS seviyesinin düşmesine neden olabilir. Bu müdahaleler psikoeğitim programlarında, bireysel travma danışmanlığında ve travma psikoterapisinde kullanılabilir.

D. THESIS PERMISSION FORM / TEZ İZİN FORMU

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