

## **University Students' Emotions and Hopes as the Predictors of Their Psychological Resilience after Terrorist Attacks**

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### **Abstract**

The purpose of this study is to examine whether positive and negative emotions and hope level of university students after the terrorist attacks in Turkey predict their psychological resilience. The participants were selected by using simple random sampling method. Accordingly, a total of 362 students (250 female and 112 male) attending various undergraduate programs at Dokuz Eylul University Buca Education Faculty. The study were used Ego-Resiliency Scale, Positive and Negative Affect Schedule and Hope Scale were used as data collection tools. The data collected were analyzed by using stepwise regression analysis. According to the findings, hope and positive emotions are positively significant predictors of psychological resilience of university students after terrorist attacks. These two variables were found to explain 39% of the total variance in the psychological resilience scores of university students. However, the research findings also show that negative emotions are not a significant predictor of psychological resilience.

**Keywords:** Psychological Resilience, Terrorist Attacks, Positive and Negative Emotions, Hope.

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## INTRODUCTION

Positive psychology highlights that it is essential to focus on individuals' power and positive emotions in all circumstances; even in case of negative experiences (Seligman, 2002; Hefferon and Bonniwell, 2011). When people have negative experiences and when things go wrong in their lives, psychological resilience, which is defined as regaining mental health, becomes an important factor. According to the literature, psychological resilience can be defined as a skill which helps individuals to adapt to negative experiences encountered in real life, cope with problems and maintain mental health (Soylu, 2016).

Terrorist attacks all over the world affect individuals' mental health because they – or even the whole society- may feel the risk of death during and after these attacks. According to the literature review, it is interesting that many studies focusing on psychological resilience were conducted after the September 11 attacks, which occurred in New York, the USA, in 2001 (Reissman, Klomp, Kent, and Pfefferbaum, 2004; Bonanno, Galea, Bucciarelli and Vhalov, 2006; Onwukwe, 2010). Unfortunately, there have been many terrorist attacks in different parts of Turkey recently. For instance, 1 police officer and 1 civil servant working in the courthouse died in a terrorist attack in İzmir, one of the biggest cities of the country. As a result of this attack, all the residents of the city felt stressful and anxious for a long time thinking that such an attack may happen again.

The literature mentions about some risk factors and protective factors related to psychological resilience. It is clear that a risk or stressful situation is necessary to examine individuals' psychological resilience. Risk factor is defined as negative life experiences or disasters that individuals might encounter (Garmezy, 1993; Masten, 2001; Karairmak, 2006; Gizir, 2007) throughout their lives. Death of a beloved person, health problems, violence, natural disasters as well as terrorist attacks are often evaluated as risk factors (Basım and Çetin, 2010; Güloğlu and Karairmak, 2010). In this study, terrorist attack has been accepted as a risk factor due to the relevant emphasis of the literature.

Protective factors related to psychological resilience are defined as factors reducing or softening the effects of a risk, challenge or stressful activity. The literature lists various individual, environmental and family-based protective factors (Karairmak, 2006; Gizir, 2007). This study examines “positive and negative emotions” and “hope” variables as protective factors, which are believed to be effective after terrorist attacks.

One of the factors focused on in this study is “positive and negative emotions” since they are believed to be related to psychological resilience. The studies show that there is a statistically meaningful positive relationship between positive emotions and psychological resilience; however, it was found that negative emotions do not have a statistically meaningful relationship with psychological resilience (Tugade, Fredrickson and Feldman Barret, 2004; Gloria and Steinhardt, 2016). Another studies revealed that psychological resilience had a negative meaningful relationship with anxiety and depressions, which are among negative emotions (Wang and Chen, 2015; Dray et al., 2017). Karairmak (2007), in her study, found that positive emotions are a meaningful predictor of psychological resilience. Still another study, which also took terrorist attacks as a risk factor just like in the current study, was conducted with the people who personally experienced or eye-witnessed the September 11 attacks that occurred in New York in 2001. The study showed that there is a statistically meaningful relationship between positive emotions and psychological resilience (Onwukwe, 2010).

Another factor believed to be related to psychological resilience is “hope”. There are some studies which show that there is a positive relationship between hope and psychological resilience (Chung, 1996; Collins, 2009; Williams, 2009), and hope predicts psychological resilience (Ho-Kin et al., 2005; Kaya, 2007; Aydın, 2010). Similarly, Karairmak (2007) suggested that hope and psychological resilience are related through positive feelings.

Current approaches in mental health tend to focus more on what works and why (Garavan and Albaugh, 2019). When evaluated through a developmental approach, the capacity of an individual to

respond to the negativity experienced by an individual is tied to the work of many systems with which the individual is related (Masten, 2019). Biological Psychiatry points out that neurobiological systems can improve psychological resilience in order to maintain mental health (Garavan and Albaugh, 2019). Family, school and society as well as the individual's own neurobiological stress regulation system are among these systems, and psychological resilience covers the resources and processes that the individual can apply. However, it is thought that the neurobiological stress regulation system, which is affected by the negativities, can be reprogrammed in the development process. It is mentioned that studies on psychological resilience can also be addressed from this developmental perspective. In this context, it is accepted that the self-regulation and stress regulation systems developed by the individual shape the development processes (Masten, 2015; Cicchetti, 2016; Masten, 2019).

Psychological resilience is defined as the skill to be able to maintain mental health when faced with negative experiences (Seligman, 2002; Hefferon and Bonniwell, 2011; Soylu, 2016), and most definitions mention about risk factors (Karairmak, 2006; Gizir, 2007). Therefore, it can be concluded that studying terrorist attacks in Turkey in terms of mental health within the framework of psychological resilience is important. Although it is reported that individuals living in communitarian cultures have higher levels of psychological resilience (Wu et.al, 2011), it is necessary to examine psychological resilience and the factors that might increase psychological resilience of individuals living in Turkey, which is defined as a communitarian culture that has a tendency towards individualization (Mocan Aydın, 2000). Despite the increasing demand for research focusing on individuals' psychological resilience after terrorist attacks in Turkey, the review of the related literature showed that no studies were conducted focusing on psychological resilience in relation to effects of terrorist attacks. Current research attempts to explore models that reflect psychological resilience not only at the individual level but also at the level of family, community and culture. It is important to examine the variables that are thought to have an impact on individuals in the society in which the research is conducted (Fast and Collin-Vézina, 2019).

Under the light of the information mentioned above, this study aims to examine whether positive and negative emotions and hope level of university students after terrorist attacks in Turkey predict their psychological resilience. Within the scope of the study, the researcher will try to answer the following research questions:

1. Do positive and negative feelings of university students after terrorist attacks predict their psychological resilience?
2. Do hope levels of university students after terrorist attacks predict their psychological resilience?

## METHOD

### Design

This study used a correlational research model in order to determine the variables predicting psychological resilience of university students. There are two main aims of correlational studies: to explain relationships between variables; and to test how predictive they are (Fraenkel and Wallen, 2006).

### Participants

The population of the study is 6174 students attending 8 departments of Dokuz Eylul University Buca Education Faculty. *Table for sampling size for different population sizes* was used to determine the suitable sampling size for the study. According to this table, sampling size for a population of 6000 people is 361 (with 5% sampling error ratio) and 364 for a population of 7000 people (Krejcie and Morgan, 1970). Thus, the sampling size for this study was calculated as 364;

however, 6 people were excluded from the analysis because of problems faced while entering the data, so the data from 362 participants were analyzed. The participants were selected by using simple random sampling method. In this method, each person has equal and independent chance to be selected, but whole population must be listed first (Fraenkel and Wallen, 2006). As a result, a list showing the departments and programs in each department of the faculty was prepared and the programs to be studied were selected by lot. Accordingly, a total of 362 students attending various undergraduate programs at Dokuz Eylul University Buca Education Faculty during 2016-2017 academic year participated in the study. Of these students, 69.1 % were female (n=250) and 30.9% male (n=112). The average age of the participants was calculated as 21.6.

## Measures

***Ego-Resilience Scale:*** Developed by Block and Kremen (1996) to measure psychological resilience, this 14-item four-point Likert-type scale was adapted to Turkish language by Kararmak (2007). In this adaptation study, the researcher suggested a three-factor structure; namely personal strengths for recovery, positive evaluations about oneself and being open to innovations. Three subthemes obtained from explanatory factor analysis were supported by confirmatory factor analysis. The scores participants received from three subthemes form their psychological resilience score. It is suggested that the total score obtained from the scale should be used rather than individual scores from each subtheme. The high score from the scale shows a high level psychological resilience. Internal consistency coefficient of the scale was tested through Cronbach Alpha value and test-retest method. Cronbach Alpha value was calculated as .80 and test-retest (in three-week interval) reliability coefficient as .76. As for similar scale validity, the correlation with Connor-Davidson Psychological Resilience was calculated as .68. In addition, a positive meaningful relationship was found between the scores obtained from both psychological resilience scales (Kararmak, 2007; Kararmak and Siviş-Çetinkaya, 2011).

***Positive and Negative Affect Schedule:*** Developed by Watson, Clark and Tellegen in order to evaluate individuals' emotions, the scale was adapted to Turkish by Gençöz (2000). It consists of 20 items (10 positive and 10 negative), and each item is scaled from 1 to 5. According to the adaptation study, Cronbach alpha internal consistency coefficient was calculated as .83 and .86 for positive and negative emotions respectively. Similarly, test-retest consistency for the same variable was found .40 and .54 respectively. As for the criterion-related validity of the scale, Beck Depression Inventory and Beck Anxiety Inventory were used. According to the findings, positive emotion scale had -.48 and -.22 correlations for these inventories; and negative emotion scale had .51 and .41 correlations respectively for the same inventories.

***Hope Scale:*** Developed by Snyder et al. (1991) to determine hope levels of individuals, the scale was adapted to Turkish by Akman and Korkut (1993). This four-point Likert scale consists of 12 items and has one-factor structure unlike the original version. A high score obtained from the scale means high level of hope, and a low score shows low level of hope. Internal consistency coefficient of the scale was calculated as .65. The correlation for test-retest, which was administered in four-week interval, was found to be .66 (Akman and Korkut, 1993).

***Personal Information Form.*** Demographic information about the participants was obtained through a personal information form prepared the researcher. The form included questions about their age, gender, the department they attend and class level.

## Data Collection

The data for the study were collected from the students attending randomly selected study-specific departments of Dokuz Eylül University Buca Education Faculty. The data collection tools were administered by the researcher herself. Despite the presence of the researcher during the data

collection process to answer possible questions and clarify misunderstandings, a short instruction was given at the beginning of the data collection tools.

### Data Analysis

The data obtained in the study were analyzed by using SPSS (Statistical Package for the Social Sciences) software. Stepwise multiple regression analysis was applied to determine variables that have significant contributions to psychological resilience of university students so that the predictive power of study-specific independent variables for psychological resilience could be determined. Mahalanobis distance, Kolmogorov-Smirnov, autocorrelation (Durbin Watson / between 15. and 2,5), tolerance (higher than .10) and VIF (smaller than 10) values were calculated prior to multiple regression analysis.

### Results

Dependent variables of the study was “psychological resilience”, and independent variables were “positive and negative emotions” and “hope”. Table 1 presents descriptive statistics of dependent and independent variables and the correlations between the variables.

**Table 1. Descriptive statistics of dependent and independent variables and the correlations between the variables**

		X	SS	1	2	3	4
Dependent	1. Psychological Resilience	39.4	6.0	1.0			
Independent	2. Positive Emotions	28.3	7.6	.34***	1.0		
	3. Negative Emotions	31.7	8.1	.06	-.07	1.0	
	4. Hope	25.2	3.9	.60***	.28***	.06	1.0

\*\*\* p<.001

According to the correlations between dependent and independent variables, there is a positive meaningful relationship between psychological resilience and positive emotions ( $r = .34, p < .001$ ) and hope ( $r = .60, p < .001$ ); also a positive meaningful relationship between positive emotions and hope ( $r = .28, p < .001$ ). However, since all the correlation values were lower than .80, multiple correlation problems did not exist between the variables, which is a prerequisite for regression calculations.

Stepwise multiple regression for the psychological resilience of the participants was completed in two steps. Positive emotions and hope variables were entered into the analysis, and their predictive powers for psychological resilience were calculated. The results of stepwise regression analysis regarding how education faculty students’ psychological resilience levels were predicted were presented in Table 2 below.

**Table 2. Stepwise Regression Analysis Regarding How University Students’ Psychological Resilience Levels were Predicted**

Variable	B	SH	Beta	t	p	R	R <sup>2</sup>	R <sup>2</sup> Change	F Change
Coefficient	16.068	1.664		9.656	.000	.599	.358	.358	201.119
Hope	.925	.065	.599	14.182	.000				
Coefficient	13.904	1.694		8.207	.000	.626	.392	.033	19.666
Hope	.843	.066	.545	12.720	.000				
Positive Emotions	.150	.034	.190	4.435	.000				

In the first step, hope, which is the best predictor of psychological resilience scores or the factor that accounts for the highest percentage of variance in psychological resilience scores, was included in the analysis, and it accounted for 36% of the variance. The dual correlation between psychological resilience and hope scores of the participants was found to be positively meaningful. In the second step, the analysis included “positive emotions” variable in addition to “hope” variable. The contribution of positive emotions variable was 3%, and two variables together accounted for 39% of the variance. The correlation between positive emotions and psychological resilience was positively meaningful. In conclusion, hope and positive emotions variables accounted 39% of total variance in psychological resilience scores.

## **CONCLUSION, DISCUSSION AND SUGGESTIONS**

The results of the study showed that positive emotions and hopes of university students after terrorist attacks meaningfully predict their psychological resilience in statistical terms. However, it was found that negative emotions do not meaningfully predict psychological resilience. Similarly, the variable “hope” is primarily effective in accounting for psychological resilience, and positive emotions are secondarily effective.

First of all, the finding that hope predicts psychological resilience is supported by the findings of some studies in the literature (Ho-Kin et al., 2005; Kaya, 2007; Aydın, 2010). When the predictive role hope in psychological resilience is considered, it can be said that hope levels are an effective factor in psychological resilience of university students after terrorist attacks. The literature shows that as hope levels increase, individuals tend to adapt to changing conditions and try to deal with problems they face in their daily lives (Barnum et al., 1998; cited by Aydın, 2010). Under the light of this finding, it can be highlighted that it is important to increase hope levels of university students to support their psychological resilience in case of stressful events and their negative consequences in the country.

The results show a meaningful positive relationship between positive emotions and psychological resilience, which are in parallel with the findings in the literature (Kararmak, 2007; Onwukwe, 2010). When the predictive power of positive emotions and psychological resilience is considered, it can be concluded that positive emotions are an effective factor on psychological resilience of university students after the terrorist attacks in the country; though not as effective as hope. According to the literature, positive emotions are beneficial for both physical and mental health (Tugade et al., 2004). In addition, positive emotions play an important role in using available resources to cope with negative experiences. Fredrickson (2004), in his positive emotions theory, highlights that positive feelings increase many resources such as psychological resilience, which might also be considered as psychological resources. In other words, both the related research in the literature and the findings of the study reveal that psychological resilience of university students after terrorist attacks in our country increases when they feel positive emotions such as being interested, enthusiastic, determined and careful.

As for the fact that negative emotions do not meaningfully predict psychological resilience, there are studies that support (Tugade et al., 2004; Gloria and Steinhardt, 2016) or do not support this finding (Wang and Chen, 2015; Dray et al., 2017). The current study shows that negative emotions are not an effective factor for university students’ psychological resilience. When the claim that negative emotions restrict opinion and action repertoire of individuals is considered (Fredrickson, 2004), it is clear why negative feelings do not account for psychological resilience of university students. In this respect, it might be concluded that it is quite normal for university students to feel negative emotions and they do not have positive or negative effect on their psychological resilience.

Based on the research findings, it can be said that some characteristics come to the fore in psychologically more resilience individuals. In this study of Turkish culture, it is acceptable that hope and positive emotions are among these characteristics. Also in the related literature, hope and positive emotions are among the personality traits of psychologically resilience individuals (Seligman, 1990;

Tugade et al., 2004; Kararmak, 2006). In this context, psychological counseling interventions focused on psychological resilience may be considered to offer a useful perspective in protecting the mental health of university students. Based on the knowledge that it is important to develop culture-sensitive models of psychological resilience (Fast and Collin-Vézina, 2019), it can be said that this work is valuable in terms of its emphasis on functioning characteristics in Turkish culture.

The study has some limitations as well. First of all, the study was conducted only with education faculty students, which is a limitation for the generalizability of the findings. It can be accepted as another limitation not with individuals who are directly exposed to terrorist attacks, but also with individuals who have negative effects from terrorist attacks that occur frequently in the city and country they live in. In addition, research data were collected through self-expression scale. Self-report scales are preferred in the studies conducted in the field of psychological counselling because they have certain advantages in terms of time and practicality, and they are suitable for phenomenological perspectives (Heppner, Wampold, and Kivlinghan, 2013).

In conclusion, this study shows that positive emotion and hope levels of university students after terrorist attacks meaningfully predict their psychological resilience in statistical terms. Psychological resilience, as one of the important concepts of mental health, should be examined carefully both in Turkey and in the world. Making an evaluation of individuals' psychological resilience and determining related variables are important in for both protective psychological counseling approach to be adopted and psychological counseling services to be provided after stressful situations. Within the framework of protective psychological counseling approach, it can be recommended that all university students should be well supported psychologically through primary level protective precautions within the framework of structures of positive psychology such as hope and positive emotions. In addition, studying different variables such as optimism, life satisfaction and well-being while evaluating psychological resilience of university students, especially after terrorist attacks, can bring valuable contributions to the literature. Finally, more studies might be conducted with students attending other universities and faculties so that the findings can be generalized scientifically.

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