M A K A L E

Examining the Relationships Between Positive Youth Development and Posttraumatic Growth in Young People Who Have Experienced Earthquakes

Ragıp Ümit YALÇIN[*]

Abstract

Post-traumatic growth is expressed as a positive change in individuals who remain psychologically durable under extremely stressful conditions. Therefore, variables that can positively affect post-traumatic growth become important. The study aims to examine the relationships between positive youth development and post-traumatic growth levels in young people who have experienced earthquakes. While designing this research, the quantitative research approach was adopted and the relational survey model was used. The study group for the research consists of 347 young people, 261 girls, and 86 boys, who have experienced an earthquake. In this study, we used the criterion sampling method, one of the non-probability online methods. "Personal Information form", "Positive youth development scale", and "Post-traumatic growth inventory" were used as data collection tools in the research. According to the results of the study, a moderate and positive correlation value was found between positive youth development and post-traumatic growth (r = .547, p <.01). The results of the pathway analysis reveal the predictive relationships between positive youth development and post-traumatic growth; It has been determined that the positive developmental characteristics of young people who have experienced earthquakes explain post-traumatic growth positively and at a value of 45%. Considering the findings from the study, it was concluded that positive youth development characteristics were an important factor in increasing post-traumatic growth and development.

Keywords: Young People, Positive Youth Development, Earthquake, Post-traumatic Growth, Path Analysis

*Dr. Öğr. Üyesi, Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Rehberlik ve Psikolojik Danışmanlık Anabilim Dalı, rgpumtylcn@gmail.com

Deprem Yaşamış Gençlerde Pozitif Genç Gelişim Özellikleri ve Travma Sonrası Büyüme Arasındaki İlişkilerin İncelenmesi

Ragıp Ümit YALÇIN

Öz

Travma sonrası büyüme, bireylerin aşırı stresli koşullar altında psikolojik olarak sağlam kalarak olumlu yönde değişmesi olarak ifade edilmektedir. Bu yüzden travma sonrası büyümeyi olumlu yönde etkileyebilecek değişkenler önemli hale gelmektedir. Bu araştırmanın amacı, deprem yaşamış gençlerde pozitif gelişim özellikleri ile travma sonrası büyüme düzeyleri arasındaki ilişkileri incelemektir. Bu araştırma tasarlanırken nicel araştırma yaklaşımı temel alınmış ve ilişkisel bir araştırma modeli tasarlanmıştır. Araştırmanın çalışma grubunu, deprem yaşamış 261 kız üniversite öğrencisi ve 86 erkek üniversite öğrenci olmak üzere toplam 347 genç oluşturmaktadır. Veri toplama sürecinde olasılıksız çevrimiçi örnekleme yöntemi kullanılmıştır. Öğrenciler belirlenirken ise ölçüt örnekleme yöntemi tercih edilmiştir. Araştırma sürecinde veri toplama aracı olarak kişisel bilgi formunun dışında, "Pozitif genç gelişim ölçeği" ve "Travma sonrası büyüme envanteri" kullanılmıştır. Araştırmanın sonuçlarına göre pozitif genç gelişimi ve travma sonrası büyüme arasında pozitif yönde ve orta düzeyde bir korelasyon değeri bulunmuştur (r = .547, p <.01). Pozitif genç gelişimi ve travma sonrası büyüme arasındaki yordayıcı ilişkileri ortaya koymak amacıyla yapılan yol analizi sonucunda; deprem yaşamış gençlerdeki pozitif gelişim özelliklerinin travma sonrası büyümeyi pozitif yönde ve % 45 değerinde açıkladığı görülmüştür. Araştırmadan elde edilen bulgular dikkate alındığında sonuç olarak, pozitif genç gelişim özelliklerinin travma sonrası büyüme ve gelişimi artırmada önemli bir faktör olduğu söylenebilir.

Anahtar Kelimeler: Gençler, Pozitif Genç Gelişimi, Deprem, Travma Sonrası Büyüme, Yol Analizi

1. Introduction

Trauma can be defined as unexpected events the sudden and uncontrollable such as the emergence of a threat to the individual's vital integrity (Van der Kolk, 2003). Traumas can be of human origin, economic origin, or natural origin. One of the natural events that cause trauma is an earthquake. Especially, the emotional reactions of individuals who have experienced the earthquake in their later lives can bring about a sense of instability and loss of control. When the literature is examined, there are results to show that earthquakes cause post-traumatic stress disorder in many studies (Başoğlu et al., 2004; Priebe et al., 2009). It is seen that the fear of earthquakes develops in many people (Kılıç, 2003). Especially when the psychology literature is examined, it is seen that fear is related to anxiety (Şahin, 2019). Therefore there is a possibility of the development of anxiety disorder among the psychological risk factors after the earthquake literature (Bilici et al., 2013; Taşçı & Özsoy, 2021). "Hypervigilance" is another common outcome. (Bar-Haim et al., 2007). On the other hand, individuals may develop negative future expectations as a result of an earthquake (Tanhan & Kardaş, 2014). These negative reactions are universal and can be said to be similar regardless of culture (Breslau, 2004). However, apart from all of these negative reactions, the experiences related to traumatic events can make the individual stronger than before. This situation, which is defined as post-traumatic growth and development, has been interpreted in the literature (Calhoun et al., 2000; Teke & Avşaroğlu, 2021). Post-traumatic growth is expressed as a positive change in individuals who remain psychologically durable under extremely stressful conditions (Tedeschi et al., 1998).

There are several factors such as psychological resources that enable the individual to develop after traumatic experiences, control of emotional stress, environmental factors, the quality of interpersonal relationships, and assumptions about the world (Bolat et al., 2020). That's why post-traumatic growth is affected by various factors including environmental and individual characteristics (Ramos & Leal, 2013; Calhoun & Tedeschi, 2006). In particular, personality patterns and some psychosocial variables in individual characteristics seem to play an important role. In this study, we wondered about some individual characteristics that might predict post-traumatic growth and development. Therefore, positive youth development characteristics, which is an approach that can positively evaluate and organize various individual characteristics of young people, have been taken into account. Positive youth development is defined in the literature as a general approach that focuses on developing the potential and abilities of young

people during their developmental period and thus aims to protect young people from potential risk factors (Yalçın, 2021). When it comes to positive youth development characteristics, the first thing that comes to mind is 4-H programs, which are intensively implemented in the United States. It is seen that 4-H programs form the basis of positive youth development studies. In addition, there are various theories and research on positive youth development approaches that have more specific propositions that have been developed independently or in conjunction with 4-H practices (Shek et al., 2019; Yalçın, 2021).

One of these theories is Lerner's et al. (2005) 5 C theory. In this theory, positive youth development characteristics; It has been defined as the whole of the development of five different domains: competence, confidence, communication, character, and caring (Yalçın, 2022). In the dimension of competence in this theory, there are generally positive actions of young people in certain areas, including academic, social, and physical competence. On the other hand, in the confidence dimension, the focus is on the characteristics of young people such as self-esteem and self-confidence, and positive identity perception. On the other hand, in the dimension of communication, the positive relationships of young people with their families, friends, and other people in their living environment are defined. The character dimension includes young people having a sense of social conscience, developing personal values, diversifying their values, and gaining behavior management. In the last dimension, caring, the process of developing empathic approach skills toward individual and social facts and events is defined (Lerner et al., 2005). The development of young people regarding these five dimensions generally affects the level of positive youth development. In this research, Lerner's positive youth development approach is based. In the research process, the holistic structure of these five sub-dimensions was taken into account and an overall positive youth development score was tried to be measured. When the literature is examined, it is expected that various developmental success products such as a decrease in high-risk behaviors and supporting the development of healthy well-being will emerge especially as a result of the increase in positive youth development characteristics of young people (Benson et al., 2006). When the studies are examined, there are results that positive youth development positively predicts life satisfaction and negatively predicts problem behaviors (Rachel et al., 2012). In addition, in another study, it was found that positive youth development characteristics predicted variables such as leadership and serving behavior positively, and negatively predicted depression (Jelicic et al., 2007). In another study, it was found that social

competence and self-esteem, which are among the positive youth development characteristics, negatively predicted depression and loneliness. (Özdoğan et al., 2023). When considered from this point of view, it is expected that the positive developmental characteristics of young people who have experienced earthquakes will positively predict post-traumatic growth characteristics.

In the context of the above, this study investigated the relationship between positive developmental characteristics and post-traumatic growth characteristics of young people who experienced the Maraş-centered earthquakes in Türkiye in 2023. This earthquake directly affected 11 provincial centers and many district centers in Türkiye and caused a very serious loss of life and property. Therefore, individuals residing in the earthquake zone may have entered a trauma process related to the earthquake. For this purpose, the predictive effect of positive youth development on post-traumatic growth was tested using path analysis, one of the structural equation models. So, the hypothesis of the research is as follows;

H: Do positive youth development characteristics of individuals who have experienced earthquake trauma predict post-traumatic growth?

2. Method

2.1. Research Design

This research is built on the relational research model used to reveal the relationships between positive developmental characteristics of young people and post-traumatic growth (Creswell, 2011; McMillan & Schumacher, 2006). The dependent variable of this study is post-traumatic growth, and the independent variable is positive youth development.

2.2. Participants

The study group of the research consists of young people who have experienced an earthquake. Online sampling methods were used to reach these young people who experienced an earthquake. Online sampling methods are divided into two probability and non-probability. (Fricker, 2008). In this study, we used the criterion sampling method, one of the non-probability online methods. During the online data collection process, there was no data loss since the participants were not likely to leave the questions blank. However, 3 participants who gave wrong answers to the control items in the scales were excluded from the dataset. The age range of the participants is 18-23 and consists of a total of 347 people, 261 girls, and 86 boys. The average age of the participants was 22.45 (Ss= 1.17).

2.3. Data Collection Tools

Two separate measurement tools and a personal information form were used for the data obtained in the study. The "Positive Youth Development Scale" was used to determine the positive developmental characteristics of young people, and the "Post Traumatic Growth Inventory" was used to determine the post-traumatic growth levels.

2.3.1. Positive Youth Development Scale

It was developed by Geldhof et al. (2014) to measure the positive developmental characteristics of young people. The scale has a short form of 34 items and a very short form of 17 items over the same items. It was adapted into Turkish by Yalçın (2021). The scale can be applied to students individually or in groups. The validity and reliability studies of the scale consisted of 392 female and 179 male students studying at different high schools. This scale is a five-point Likert type and has 5 sub-dimensions. These sub-dimensions are called competence (e.g., *"I am popular among my friends"*), confidence (e.g., *"I am confident that I will have a good life when I am an adult"*), connections (e.g., *"I feel useful and important in my family"*), character (e.g., *"I do what I believe is right, even when my friends make fun of me")* and caring (e.g., *"When I see someone else hurt or upset, I feel sorry for them").* The total score to be obtained from the scale expresses the positive characteristics of young people. The internal consistency coefficient (α) determined for the very short form of the scale was .90 for the total score and .70 to .84 for the sub-dimensions. Within the scope of this research, the very short form of the scale was used, and the internal consistency coefficient (α) for the total score was found to be .82.

2.3.2. Post-Traumatic Growth Inventory

The original post-traumatic growth inventory, which was adapted to Turkish by Kağan et al. (2012), was developed by Taku et al. (2008). The inventory can be administered to students individually or in groups. The validity and reliability studies of the inventory consisted of 356 female and 367 male students studying at high school and university. The inventory consists of 21 items and 3 sub-dimensions. These sub-dimensions are called a change in self-esteem (e.g., *"I understood better that I can face difficulties"*), a change in the philosophy of life (e.g., *"The order of priority of the things I care about in life has changed"*), change in relationships with others (e.g., *"I realized that I can trust people better when I'm in trouble"*). The internal consistency coefficients (α) of the inventory were found to be .92 for all items and between .77 and .88 for sub-dimensions. In this research

process, first and second-level confirmatory factor analyzes were performed to calculate the total score of the inventory, and it was concluded that it would be appropriate to use the total score in line with the values obtained. In addition, the internal consistency coefficient (α) for the total score was found to be .84.

2.3.3. Personal Information Form

With the personal information form, some individual characteristics of the participants such as age, gender, and whether they had witnessed the earthquake in person were tried to be determined. For each question, the participants were presented with options arranged categorically.

2.4. Analytical Approach

After the necessary permissions were obtained during the research process, the collected data were reviewed. After the data obtained from the scales were transferred to statistical analysis programs, firstly, Mahalanobis distance values were calculated for the extreme values of the data set. As a result, it was determined that there was no extreme value. After the extreme value analysis, the scatter plot matrix was examined for normality and linearity, and it was decided that the distribution was in the form of an ellipse and therefore multivariate normality and linearity were achieved. After this analysis, it was concluded that the Box M test result for covariance (p > 0.25) was insignificant, and a homogeneous distribution was obtained. For the analysis of the obtained data set, SPSS 22.00 and LISREL 8.80 package programs were used and Pearson Correlation Coefficient Analysis and Path Analysis were performed through these programs.

3. Procedure and Ethical Approval

Based on the ethical standards of this research, there is the approval decision numbered 23 taken from session number 04 dated 30/03/2023 of the Atatürk University Ethics Committee. In this process, details including the plan and objectives of the work were presented to the ethics committee, and an ethical compliance letter was prepared for the research in line with this report. During the data collection process, the students were informed about the study in advance and then the relevant measurement tools were applied. Data collection was carried out on a completely voluntary basis.

4. Findings

In this section, the predictive power of the positive developmental characteristics of young people on post-traumatic growth was examined first by Pearson

Product-Moment Correlation Analysis and then by Path Analysis, and the results were presented respectively.

### 4.1. Relationships Between Variables

Pearson Product Moments Correlation analysis was first performed to determine the relationships between positive developmental characteristics and post-traumatic growth levels of young people. The results obtained from this analysis and descriptive statistics regarding the variables are given in Table 1.

Variable	Mean	SS	Skewness	Kurtosis	1	2
PYD (1)	66.29	7.04	-.513	.617	1	.547**
PTG (2)	84.72	17.39	-.609	.574	.547**	1

Note. **p < .01; PYD = Positive Youth Development, PTG = Post Traumatic Growth

Table 1. Relationships Between Variables

When Table 1 is examined, it is seen that there is a positive and significant relationship (r = .547, p<.01) between the positive developmental characteristics of young people and their post-traumatic growth scores as a result of the correlation analysis performed. Path analysis was used to determine the predictive relationships after determining the significant relationships between the positive developmental characteristics of the youth and their post-traumatic growth mean scores. The first output for this model, showing the standard solutions, is shown in Figure 1. Model fit indices for the model are given in Table 2.

Chi-Square=59.65, df=19, P-value=0.00000, RMSEA=0.079
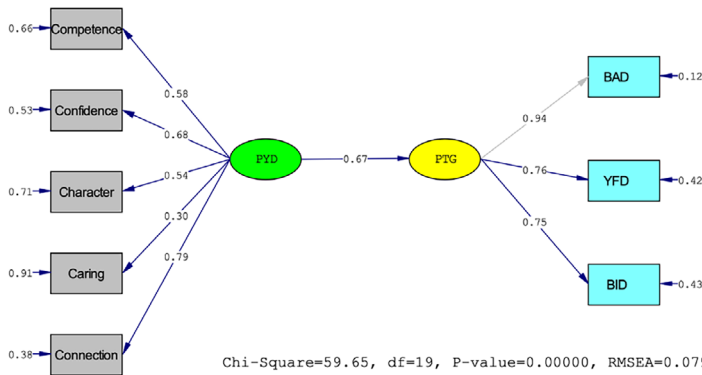
PYD: Positive Youth Development / **PTG:** Post Traumatic Growth / **BAD:** Change in Self-esteem **YFD:** Change in Philosophy of Life / **BID:** Change in Relationships with Others

Figure 1. The output of Standard Solutions for Pathway Analysis Showing the Relationship Between Positive Youth Development and Post-Traumatic Growth

When Figure 1 is examined, it is seen that the positive youth development latent variable (PYD) positively predicts the post-traumatic growth latent variable (PTG) in this structural model obtained (Standard Solutions coefficient= 0.67; t= 11.85, p< .05). Accordingly, it was seen that positive youth development explained 45% of post-traumatic growth. In line with this finding, it can be said that positive developmental characteristics in young people are a variable that significantly predicts post-traumatic growth.

Fit Index	Calculated Fit Index	Acceptable Fit Index *	Perfect Fit Index *
X²	59.65		
Sd	19		
X² / Sd	3.13	χ2 / Sd ≤ 5	χ2 / Sd ≤ 2
GFI	0.96	.90 ≤ GFI < .95	.95 ≤ GFI ≤ 1.00
NFI	0.96	.90 ≤ NFI < .95	.95 ≤ NFI ≤ 1.00
CFI	0.97	.90 ≤ CFI < .95	.95 ≤ CFI ≤ 1.00
RMSEA	0.079	.05 < RMSEA ≤ .08	0 ≤ RMSEA ≤ .05
SRMR	0.045	.05 ≤ SRMR ≤ .08	0 ≤ SRMR ≤ .05

* Acceptable and Perfect fit indices range values (Hu & Bentler, 1999).

Table 2. The Goodness of Fit Indices for Path Analysis

When the fit indices of this structural equation model are examined; It was found that the tested model was approved and fitted well.

5. Discussion, Conclusion, and Recommendations

In this study, the predictive effect of positive youth development on post-traumatic growth in youth was investigated. According to the results obtained, the positive developmental characteristics of young people positively predict post-traumatic growth. When standard solutions values, t-values , and fit indices were examined, it was seen that the model was acceptable. In addition, it was observed that the model could adequately explain the relationships between latent and observed variables. According to the findings, as the positive developmental characteristics of young people increase, their post-traumatic growth and development characteristics will also increase. This is especially consistent with the propositions of positive youth development theories. Lerner et al. (2015) emphasize that positive youth development characteristics will have positive contributions in terms of individual, social, and family in the theory of individual development systems. These individual contributions also include resisting the

negative effects of traumatic events and regaining well-being over time (Schmid et al., 2011). When the literature is examined, it has been found that high levels of positive development in young people reduce the levels of anxiety and depression, which are known as post-traumatic risks (Onyeka et al., 2022). In addition, it was found that positive youth development characteristics positively affected the levels of gratitude and optimism, and subjective happiness (Gomez-Baya et al., 2021). This general view in the literature is consistent with the findings of this study.

In this study, the 5C model was used to determine the level of positive youth development. This model contains different sub-dimensions such as competence, confidence, connections, character, and caring. When the literature is examined, there are various studies examining the relationships between the sub-dimensions of positive youth development and post-traumatic growth. For example, Peterson et al. (2008) found a positive relationship between character strengths and post-traumatic growth in a study they conducted. In a longitudinal study conducted during the Covid 19 process, it was found that character predicts post-traumatic growth (Casali et al., 2021). In a study conducted on competence, which is another dimension of positive youth development, there are findings that social competence supports post-traumatic growth (Hammer et al., 2019). On the other hand, there are findings in the literature that positive communication with the environment, which is another dimension of positive youth development, supports post-traumatic growth (Augustine, 2014; Spialek et al. 2019). For example, one study found that establishing positive relationships with peers and receiving support from them helps post-traumatic growth (Donovan, 2022). In addition, various studies show empathy predicts post-traumatic growth. Empathy is already related to another dimension of positive youth development, caring (Dou et al., 2022; Lai et al., 2021). All these results obtained in the literature support the findings of our study.

The findings of this research will guide further studies that will investigate post-traumatic growth in young people. When the characteristics of young people who have been exposed to a traumatic event such as an earthquake are examined, it is seen that their perception of safe space is damaged and their anxiety increases (Marthoenis, 2019), and their positive future expectations decrease (Tanhan & Kardaş, 2014). Therefore, intervening to increase the positive developmental characteristics of young people who have experienced earthquakes will increase their psychological resilience and facilitate adaptation to the post-trau-

matic process. From this point of view, the crisis intervention approaches used in the guidance services in schools located in the earthquake zone can focus on positive youth development areas. Especially in these areas, communication skills, empathic approach processes, and character strengths can be considered more. It is thought that psycho-educational interventions covering these areas will contribute positively to the post-traumatic development process.

In addition to the contributions that the research can provide to the literature, it also has limitations. One of these limitations is that the study was designed as a cross-sectional study and therefore, its generalizability is poor. Considering the development process of trauma, in future studies, expanding the data to include different periods and examining the predictive effects of different variables will allow us to better understand post-traumatic growth. Secondary trauma processes that cannot be detected in the first measurements and that occur later should also be taken into account. In addition, cultural variables that contribute to the post-traumatic growth process need to be investigated further.

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Makale yazarı herhangi bir çıkar çatışması olmadığını beyan etmiştir.

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