Analysis of Self-Compassion and Contribution in Post-Traumatic Growth using Multiple Regression Analysis

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Abstract

The aim of this study was to examine the relationship between self-compassion and contribution in post-traumatic growth. The study group consisted of 718 students studying at a university in the Central Black Sea Region in Türkiye, recruited with convenient sampling method. 61.8% (444) of the students were female and 38.2% (274) were male. The age range of the participants varied between 18 and 47, but the majority consisted of individuals between the ages of 20-29 (90.7%). Three-dimensional Contribution Scale, Self-Compassion Scale, Post-Traumatic Growth Inventory and personal information form were used as data collection tools. According to the results, a positive and significant relationship was found between self-compassion and contribution, and between contribution and PTG. It was also found that contribution predicted Post Traumatic Growth. Suggestions were made to the researchers based on these results.

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INTRODUCTION

Humans face many difficulties, problems, natural disasters and crises throughout their lives. Traumatic experiences, which are also considered as difficult life events, can affect individuals' mental health negatively (Forneris, Gartlehner, Brownley, Gaynes, and Lohr, 2013). These difficult life events do not have the same negative effect on the mental structure of each individual (Özgen and Aydın, 1999). Being affected or less affected by difficult events and to feeling mentally better afterwards is possible through factors such as individual (personality traits, coping mechanisms, etc.) and environmental (social support, contribution, etc.) factors (Calhoun and Tedeschi, 2014). For this reason, each individual reacts differently to a difficult event. Depending on these reactions, individuals can either receive psychological support to get rid of the effect of the event or continue their life by detaching positively from the event. This situation, which is expressed as post-traumatic growth (PTG), is the occurrence of changes that can be beneficial for the individual after a challenging event (Tedeschi and Calhoun, 2004).

Post-traumatic growth is a positive change in the individual, the individual's relationships with other people, and the meaning of life after a challenging life event (Tedeschi and Calhoun, 2004). With PTG, an awareness occurs in the individual, the individual then sees his strengths, rearranges the order of priorities in his life and becomes happy with little things (Tominaga, Goto, Shelby, Oshio, Nishi, and Takahashi, 2020).

SELF-COMPASSION IN POST-TRAUMATIC GROWTH

Negative life events such as natural disasters, exposure to sexual harassment or rape, being diagnosed with a terminal illness, terrorist attacks, accidents, forced detention, loss of a loved one cause traumatic stress for many people (Altan, 2013; Bellur, 2015). A series of   , emotional, cognitive and physical negative reactions may occur in individuals as a result of challenging life events (Haselden, 2014). However, traumatic events have positive effects on human life as well as negative effects. While psychopathologies are negative effects, changes in lifestyle are positive effects. Post-traumatic growth is individuals' making positive results from the effects of stress by giving new meanings to their perspective. Trauma survivors increase their awareness of their self-efficacy and, in parallel, their self-esteem (Arıkan, 2007).

Post-traumatic growth is experiencing not only recovery from trauma and returning to the pre-traumatic period, but also using trauma as an opportunity for personal growth (Bellur, 2015). For this reason, it is referred to as "a positive and significant experience of change caused by the fight against a major life crisis". These individuals overcome trauma with improved psychological functioning in certain areas (Calhoun, et al., 2000). Posttraumatic growth is both a cognitive process that starts after traumatic events and a result. In the process of rebuilding oneself after traumatic events, social support received from the environment and the strengths and weaknesses learned or noticed in this process are at the forefront. Individuals who grow after trauma do not consider traumas as a destruction, but as an opportunity to establish a new life. They establish new psychological structures with coping mechanisms that will help them cope with possible traumas. Demographic characteristics, severity of traumatic events, social support, expression of emotions and positive personality traits of the individual are among the factors that affect post-traumatic growth (Ezerbolat and Yılmaz Özpolat, 2016). Growth experienced after trauma causes changes in the individual's self-perception, relationships and life philosophy (Tedeschi, et. al., 1998). Benight and Bandura (2004) stated that perceived social support increases self-efficacy levels of individuals, and they can fight more easily against negative thoughts that emerge.

Self-compassion is defined as being loving and kind to oneself during difficult life events, being aware of negative emotions and accepting them, and knowing that all kinds of challenging experiences that can be experienced are related to being human (Neff, 2003a). It is also stated to be one of the

healthy ways to cope with difficult life events. After traumas, individuals can develop accusatory attitudes towards themselves. Being compassionate and understanding instead of being judgmental towards oneself allows individuals to evaluate events as a human experience and to develop their self-perceptions (Neff, 2003a). In other words, the individual becomes a resource for other individuals to find the strength to recover from a traumatic event or a sense of failure. In this way, self-compassion does not make the individual superior to other individuals, it is only a feature that supports and strengthens them.

Individuals who have an active attitude towards experiences with self-compassion have good self-regulation and increase their awareness (Neff, Kirkpatrick and Rude, 2007). This feature, which enables individuals to develop in a positive way, also prevents them from being alone and on their own. It even enables establishing bonds with other individuals and the realization that both the individual and other individuals are not alone in a negative situation. This way, self-compassion allows individuals to interact in a mutually positive way (Neff, 2011).

When the literature is examined, studies on self-compassion and post-traumatic stress (PTS) can be seen. Raiche (2017) reported that soldiers with high levels of self-compassion who had intense traumatic experiences showed high levels of post-traumatic stress (PTG) symptoms. Çolakoğlu (2013), on the other hand, showed in a study with individuals who had a heart attack that the sub-dimensions of self-compassion had a positive correlation with some sub-dimensions of PTG. When these sub-dimensions are examined in detail, it can be seen that the sub-dimensions of self-compassion, awareness of sharing and consciousness (self-compassion) affect positive changes in individuals and positive interpersonal changes (PTG) positively. Aslantürk (2022) also found that self-compassion predicts PTG. Similarly, Wong and Yeung (2017) reported that self-compassion had a high correlation with PTG.

In a study they conducted with individuals who lost a relative they loved, Vara and Thimm (2019) studied the relationship between complex grief reactions and self-compassion. In this study, it was concluded that there is a negative significant relationship between complex grief and self-compassion. In a study by Játiva and Cerezo (2014), it was concluded that self-compassion reduced the inconsistencies that occurred after challenging life events in adolescents who experienced such events.

CONTRIBUTION IN POST TRAUMATIC GROWTH

Positive development is a dynamic integration of the individual and the context through mutually beneficial interactions (Lerner, 2002). Positive development does not depend only on genetic inheritance or social experience. The individual and the context are in a dynamic structure and flexibility in development occurs in this way (Brandtstädter, 1998; Lerner, 1998). The mutual interaction between the individual and the context enables the individual to use the characteristics of competence, trust, relationship/bond, character and caring/helpfulness/compassion more effectively (Lerner, 2005). Individuals who develop in a positive way contribute to themselves, their families and the society, and these contribute back to individuals.

Developmental systems theory (DST) is based on the context and individuals' mutually beneficial activities in the positive development of individuals. In this theory, individuals and the context enter into an active life process and changes that allow for growth occur (Lerner, 2006). Based on this, the contribution ensures the development and growth of individuals in life. It also helps individuals to play a role in the positive development of the society and their family (Theokas, Almerigi, Lerner, Dowling, Benson, Scales and von Eye, 2005). Through self-contribution, individuals can avoid risky behaviours such as alcohol and drug use, unwanted pregnancy and violence during adolescence (Perkins and Borden, 2003). Individuals who can establish a better bond with other individuals in this way can also use the areas in which they can be competent in the best way. Individuals who are in a good position in terms of self-confidence and contribution, are active in establishing bonds and have a constructive

attitude towards other individuals. In addition, individuals care about other individuals or things and shape their relationships in this context (Lerner, 1998, 2005).

Individuals can make the best use of the opportunities around them (library, sports facility, hobby courses and training centres etc.) to contribute to themselves (Lerner, 2005). Contribution helps individuals with positive development of their families and the environment in line with the interaction of the individual with the context. Collective structure emerges in this way and all contribute to each other. In this context, while a structure (family, individual, social organizations) contributes to the society, individuals in that structure contribute to the society and their family as they do to themselves (Theokas, Almerigi, Lerner, Dowling, Benson, Scales, and von Eye, 2005). A dynamic process occurs with the collective bond. With the strong bond formed between the individual and the context, difficult life events can be overcome more easily. Abraido-Lanza, Guier, and Colon (1998) stated that personal characteristics such as coping and social resources play an important role for post-traumatic growth (PTG) to occur after a difficult event. In their study on individuals infected with COVID-19, Aydın and Kaya (2022) reported that individuals realized PTG by contributing to themselves and other people.

After a difficult life event, individuals strengthen themselves both by using their resources and through other individuals. As a matter of fact, individuals who are faced with a difficult event tend to get support from other individuals (Van Slyke, 2013). Contribution takes place voluntarily and individuals begin to develop in a positive way. In a study conducted by Xu, Jiang, Zhou, Zhou, and Fu (2019) with adolescent individuals who survived the hurricane one year after the hurricane, PTG was observed in the adolescents and it was found that social support had an effect on this; Yan, Yang, Ye, Chen, Xie et al., (2021) concluded that social support was highly correlated with PTG in individuals who became ill as a result of COVID-19. Individuals who have a tendency to strengthen themselves at heart (Engel, 2011) support both themselves and other individuals in a positive way (Lerner, 2005). Individuals who help their positive development through contribution care about the needs, attitudes, behaviours and thoughts of other individuals. Individuals who have increased awareness of the environment they are in feel that other individuals help them and feel their support. Likewise, they show a similar approach to other individuals (Eisenberg, Spinrad and Knafo-Noam, 2015). With contribution, individuals have increased opportunities to find social and emotional support in a situation (Fuligni, 2019). It can be thought that contribution in terms of both prevention and intervention will help individuals to use their power resources in the face of a negative event because contribution helps individuals to realize self-regulation (Zimmerman, Phelps and Lerner, 2007). Contribution, which also provides mental, social and health-related positive outcomes (Eisenberger, 2013; Raposa, Laws and Ansell, 2016), increases the hope of individuals about the future (Schmid, Phelps and Lerner, 2011).

No study was found in Turkey or abroad on the relationship between post-traumatic growth, self-compassion, and contribution. The aim of the present study was to examine the relationship between self-compassion and contribution in post-traumatic growth and to contribute to the field with the results found.

METHOD

RESEARCH DESIGN

This study is a quantitative research that aims to examine the contribution of self-compassion to post-traumatic growth using Multiple Regression Analysis (Creswell, 2014). Therefore, the relational research design was used in the current research. Relational research aims to reveal how certain characteristics of an individual affect other variables (Franken, Huyn, & Wallen, 2012).

SAMPLE

The study group was formed from students who were studying at a university in the Central Black Sea Region, by using convenient sampling method. The study was conducted with 718 individuals by obtaining information from the participants whether they had experienced a challenging life event in the last six months. Convenient sampling method is a sampling method that is preferred because it saves time and is economical due to preventing the loss that may occur in the workforce (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz and Demirel, 2012). Demographic information of the study group is shown in Table 1.

Table 1. *Demographic Information of the Study Group*

Gender	n	%
Female	444	61.8
Male	274	38.2
Age	*n*	*%*
18-19	32	4.5
20-29	652	90.7
30-39	20	2.8
40-47	12	1.7
Unspecified	2	0.3

Table 1 includes information about the gender of the participants. It can be seen that 61.8% of the participants were female, while 38.2% were male. It can also be seen that the ages of the participants are between 18 and 47, while most of them are between 20 and 29 (90.7%).

DATA COLLECTION TOOLS

Three different measurement tools were used to collect data in the study. Three-Dimensional Contribution Scale, Self-Compassion Scale and Post-Traumatic Growth Inventory were used together with the personal information form which was shaped based on the literature review.

THREE-DIMENSIONAL CONTRIBUTION SCALE (TDCS)

The Three-Dimensional Contribution Scale was developed by Truskauskaitė-Kunevičienė and Kaniušonytė (2018), and its Turkish adaptation was carried out with 637 adult individuals by Aldemir and Balcı-Çelik (2021). The original structure of the scale consists of three sub-dimensions (family, individual, social) and a total of 15 items (Truskauskaitė-Kunevičienė and Kaniušonytė, 2018). The measurement tool is in five-point Likert type and there are no reverse items (Aldemir and Balcı-Çelik, 2021). The minimum possible score that can be obtained from the measurement tool is 15 and the maximum possible score is 75.

Factor structure of the measurement tool was tested by confirmatory factor analysis, and after the analysis, it was understood that the three-dimensional structure of the scale showed an acceptable fit (RMSEA= .07, AGFI= .86, CFI= .92, IFI= .92). In the reliability analysis studies conducted for the scale, Cronbach alpha internal consistency coefficient was calculated as .88. With Psychological Resilience Scale, a significant relationship of .22 was found in terms of convergent validity (Aldemir and Balcı-Çelik, 2021). These results show that the Three-Dimensional Contribution Scale is a valid and reliable measurement tool. In this study, the Cronbach alpha internal consistency of the Three-Dimensional Contribution Scale was calculated as .88.

SELF-COMPASSION SCALE (SCS)

Self-Compassion scale was developed by Neff (2003b), and the adaptation process to Turkish was carried out by Deniz, Kesici and Sümer, (2008). The original version of the scale consists of 26 items and six sub-dimensions. The measurement tool is responded in a five-point Likert type. In the Turkish reliability and validity study of the Self-Compassion scale, unlike its original version, the scale consisted of 24 items and one dimension. However, internal consistency coefficient of the measurement tool

was found to be .89 and test-retest reliability was .83. In this study, Cronbach alpha internal consistency of Self-Compassion Scale was calculated as .88.

POST-TRAUMATIC GROWTH INVENTORY (PTGI)

Post Traumatic Growth Inventory, which was developed by Tedeschi and Calhoun (1996), was adapted into Turkish by Kağan, Güleç, Boysan, and Çavuş (2012). Item discrimination of PTGI varies between .28 and .72. It was found that PTGI, which had a three-dimensional structure in its original form, also preserved this structure in its Turkish version. These sub-dimensions are change in self-perception, change in philosophy of life, and change in relationships. Internal consistency of the PTGI was .92 for the overall scale, .88 for change in self-perception, .78 for change in life philosophy, and .77 for change in relationships. Cronbach Alpha reliability coefficient of the PTGI was calculated as .99 and test-retest reliability was .83. In this study, Cronbach alpha internal consistency of PTGI was calculated as .91.

DATA COLLECTION PROCESS

Necessary permissions were obtained from the Social and Human Sciences Research Ethics Committee of a university in the Black Sea Region (22.10.2021 date and 2021-855 numbered decision). Data of the study were collected face to face. Three-dimensional Contribution Scale, Self-Compassion Scale, Post Traumatic Growth Inventory and personal information form were given to adults who volunteered to participate in the research.

DATA ANALYSIS

IBM SPSS 21 program was used to process and interpret the quantitative data obtained from the study group. Raw quantitative data were first transferred to these programs and made ready for analysis. Frequency analysis and percentage for descriptive statistics were used in data analysis, while Pearson correlation analysis and multiple regression analysis (Karagöz, 2016, 2019; Meydan and Şeşen, 2015; Tabachnick and Fidell, 2015) were used for the relationships and predictors between contribution, self-compassion and post-traumatic growth level. In addition to all these, analyses regarding the normality of the data were carried out before the related analyses**.**

Table 2. *Descriptive Statistics*

	n	Minimum	Maximum	X	SD	Skewness	SH	Kurtosis	SH
TDCS	718	15	75	58.46	9.189	-.961	.091	1.825	.182
SCS	718	24	150	76.50	16.034	.042	.091	.929	.182
PTGI	718	0	105	61.91	17.503	-.663	.091	1.063	.182

Table 2. includes the mean and standard deviations, minimum-maximum values, Skewness and Kurtosis coefficients and standard errors of the scores obtained from the Three-dimensional Contribution, Self-compassion and Post-traumatic Growth measurement tools. In order for the data to be considered to be normally distributed, the skewness coefficient should take a value between -3, +3 (or -2, +2) (Karaalioğlu, 2015). Based on the results, it was understood that the scale scores met the normal distribution criteria.

RESULTS

The results of the Pearson correlation analysis performed to test whether there is a correlation between self-compassion, contribution and post-traumatic growth are shown in Table 2.

Table 3. *Correlations Between Self-Compassion, Contribution, and Post Traumatic Growth*

	SC	C	PTG
SC	1		
C	.38**	1	
PTG	.34**	.45**	1

** p< .01

SC= Self-compassion, C= Contribution, PTG= Post-traumatic growth

Table 3 shows a low level of positive significant correlation between self-compassion and contribution (r= .38, p<.01), a moderate level of positive significant correlation between contribution and post-traumatic growth (r= .45, p<.01), and low level of positive significant correlation between self-compassion and post-traumatic growth (r= .34, p<.01).

Table 4. *Multiple Regression Analysis Results*

Variable	B	Standard Error	β	t	p	Paired r	Partial r
Constant	1.985	3.997		.497			
Self-compassion	.235	.038	.215	6.222	.000	.342	.227
Contribution	.718	.066	.377	10.906	.000	.449	.378
R = .493	R^2 = .241	VIF (self-compassion) = 1.128					
F (2-715) = 114.683	P = 0.000	VIF (contribution) = 1.128					

Table 4 shows self-compassion and contribution predict PTG. Self-compassion and contribution explain 24% of PTG. In addition, the relative order of importance of the predictor variables on PTG is contribution (β = .377) and self-compassion (β = .215). When the significance of the regression coefficients in Table 4 is examined, it can be seen that both predictor variables are a significant predictor of PTG.

DISCUSSION, CONCLUSION AND IMPLICATIONS

The present study examines the relationship between post-traumatic growth (PTG), self-compassion and contribution. This study also discusses whether self-compassion and contribution predict PTG.

In this study, a positive and significant correlation was found between self-compassion and contribution. When the literature is examined, it can be seen that there are studies consistent with these findings. In this context, Aldemir (2022) reported in a study conducted with adult individuals that voluntarily allocating time to someone on any subject would positively affect that person's self-compassion. Neff and McGehee (2010) found that maternal support and family functioning predicted self-compassion. In a study conducted by Yarnel and Neff (2013), it was reported that self-compassionate individuals can come to terms with their friends, spouses, parents more easily. In terms of the other results found in this study, a positive and significant correlation was found between contribution and PTG. It was also found that contribution predicted PTG. These results obtained from the study can be explained by the fact that individuals use their internal and external resources well after a difficult life. Some of the characteristics that make PTG possible in the individual are strengths and relationships with others (Calhoun and Tedeschi, 2014: p. 5).

Increasing social resources such as new social support networks and better family or friend relationships are important environmental factors (Schaefer and Moos, 1992, Zoellner and Maercker, 2006). Abraido-Lanza, Guier, and Colon (1998) stated that personal characteristics such as coping and factors such as social resources play an important role in the realization of post-traumatic growth (PTG) after a difficult event. Ezerbolat and Yılmaz Özpolat (2016) also stated that the presence of social support is one of the demographic variables that affect PTG. In their study on individuals infected with

COVID-19, Aydın and Kaya (2022) reported that individuals realized PTG by contributing to themselves and other people. In a study conducted by Xu, Jiang, Zhou, Zhou, and Fu (2019) with adolescent individuals who survived the hurricane one year after the hurricane, PTG was observed in the participants, and it was found that social support had an effect on this; Yan, Yang, Ye, Chen, Xie et al. (2021) concluded that social support was highly correlated with TSD in individuals who became ill as a result of COVID-19. Etişken Ayaltı and Bayraktar (2017) reported that the family plays an important role in the realization of PTG in a study they conducted on the positive changes that may occur after a traumatic experience. Post-traumatic social support is considered as an important element in individuals' post-traumatic development (Linley and Joseph, 2004; Joseph and Linley, 2005; Tedeschi, et al., 1998; Thornton and Perez, 2006). Benight and Bandura (2004) stated that perceived social support increases the self-efficacy levels of individuals, and they can fight against emerging negative thoughts more easily.

Yılmaz (2014) reported that factors such as coping and social support predicted PTG in individuals WHO experienced loss trauma. Yurtsever (2018), in a study with cancer patients, found a positive and significant relationship between PTG and perceived social support. According to the research results of Durak and Durak (2019), it was shown that problem-focused coping strategy and seeking social support were highly effective on PTG. Arıcı Özcan and Arslan (2020), in their study with participants who were exposed to terrorist incidents, concluded that perceived social support and post-traumatic development levels were positively correlated.

The findings can also be based on the individuals' contribution to themselves and the community they are in after a difficult life. Dursun and Söylemez (2020) reported that after a difficult event, individuals' benevolent activities and contribution to the common good are effective in the realization of PTG. In a different study conducted with individuals who contracted COVID-19, it was shown that those who have grown in a positive way have a change in their perspective on human relations and their attitudes/behaviours in human relations (Aldemir, Yanar, Aydoğmuş, Şenel, 2021). Calhoun and Tedeschi (2006) reported that individuals who have been exposed to a difficult life have experiences by adding new things to themselves depending on their experiences and that they tend to interact with other people who have been exposed to a difficult life. Weiss (2002) stated that after a difficult experience, an individual may tend to provide support to other people, which in turn results in PTGI. Similar results were found in different studies (Anderson, Prioleau, Taku, Naruse et al., 2016; Tel, 2018). Individuals who have experienced trauma show improvement in expressing their emotions. The social support they see in their relationships provides them with new opportunities and development (Weiss,2004). Strengthening sensitivity, empathy and compassion in interpersonal relationships can enable individuals to be more compassionate towards both themselves and others. It also provides individuals with motivation to share their experiences and help others in their situation (Tedeschi, et al., 1998).

Based on the results found, psycho-educational programs can be organized to help individuals with post-traumatic growth, and individuals can participate in these programs. In addition, since increasing social resources such as social support networks and good family or friend relations are important environmental factors, group guidance activities, psycho-educational programs and seminars can be organized for individuals to improve their friendship relations. Seminars can be held for families. In terms of increasing the self-compassion levels of individuals, group guidance studies should be planned by school psychological counsellors at other educational levels starting from primary education.

AUTHOR CONTRIBUTION

- First author have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data.

-The second author have been involved in drafting the manuscript or revising it critically for important intellectual content.

-The third author have given final approval of the version to be published.

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