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## The Turkish Adaptation of the Stress-Related Growth Scale Short Form: A Validity and Reliability Study

*Strese Bağlı Büyüme Ölçeği Kısa Formunun Türkçe Uyarlaması: Geçerlik ve Güvenirlik Çalışması*

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### ABSTRACT

The present study aimed to adapt the Stress-Related Growth Scale Short Form into Turkish and to examine the psychometric properties of the Turkish form. The research was performed with three separate study groups consisting of a total of 631 university students. Linguistic equivalence studies of the scale have shown that the original and Turkish forms are equivalent. Item analyses and confirmatory factor analysis findings showed that the original factor structure of the scale with 15 items and one dimension was confirmed in Turkish university students, and the fit values of the model were within acceptable limits. In criterion validity, significant correlations were found between the Stress-Related Growth Scale Short Form and other variables. Research findings have shown that the Stress-Related Growth Scale Short Form was a valid and reliable measurement instrument.

### Article Information

#### Keywords

Stress-Related Growth  
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### ÖZET

Bu çalışmanın amacı Strese Bağlı Büyüme Ölçeği Kısa Formunu Türkçeye uyarlamak ve Türkçe formun psikometrik özelliklerini incelemektir. Araştırma toplamda 631 üniversite öğrencisinden oluşan üç ayrı çalışma grubuyla yürütülmüştür. Ölçeğin dilsel eş değerlik çalışmaları orijinal ve Türkçe formun eş değer olduğunu göstermiştir. Madde analizleri ve doğrulayıcı faktör analizi bulguları ölçeğin 15 maddeli ve tek boyutlu orijinal faktör yapısının Türk üniversite öğrencilerinde doğrulandığını ve modelin uyum değerlerinin kabul edilebilir sınırlar içinde olduğunu göstermiştir. Ölçüt geçerliği kapsamında Strese Bağlı Büyüme Ölçeği Kısa Formu ile diğer değişkenler arasında anlamlı ilişkiler bulunmuştur. Araştırma bulguları Strese Bağlı Büyüme Ölçeği Kısa Formunun geçerli ve güvenilir bir veri toplama aracı olduğunu göstermiştir.

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## INTRODUCTION

Increasing social and technological changes and developments have brought some problems as well as the benefits they provide. Change and development are processes that require adaptation, and all situations that require adaptation are potentially stressful (Butcher et al., 2013). Stress is a situation that occurs when the physical and mental limits of the organism are threatened in the face of the stimulus that affects the organism as it is perceived (Yılmaz, 1991). Definitions of stress, which is an inevitable phenomenon, focus on the process between the stimulus situations that affect the individual and the individual's possible reactions to these situations (Houston, 1987). Stress, which expresses the physiological responses of the individual who is worried about a perceived threat, together with mental processes, is the effort of the organism to return to the equilibrium state to fight threats or to protect oneself from harm (Selye, 1956).

When we experience stress, we experience physical and mental problems (Butcher et al., 2013). Stress, which paves the way for the development of chronic diseases (Baltaş & Baltaş, 2013), appears to be associated with physical ailments such as the emergence and progression of cancer (Zhao et al., 2015), as well as cardiovascular disorders (Dimsdale, 2008; Lagrauw et al., 2015; Steptoe & Kivimäki, 2012). In addition, stress causes mental health problems (Garbarino et al., 2013) and is associated with variables such as depression (Crawford & Henry, 2003; Hammen, 2005; Rehman et al., 2021), anxiety (Crawford & Henry, 2003; Rehman et al., 2021), insomnia severity (Masoudi et al., 2021), and obesity (Tomiyama, 2019).

At every stage of life, individuals may face different stressful situations. During the university years, which corresponds to the beginning of young adulthood, individuals encounter several environments and situations that have the potential to increase stress, such as family environment, educational environment, work environment, changing relationships, socio-economic problems, and sexuality-related issues (Geldard & Geldard, 2013). In general, we know that the main stressors for university students are academic, financial/work, personal, familial, relational, social support, university/life balance, and starting university (Pit et al., 2018; Thawabieh & Qaisy, 2012). This indicates that the university period is in the risk group in terms of stress and related problems. Abouserie (2006) revealed that 77.6% of university students experienced moderate stress and 10.4% experienced severe stress. Pesen and Mayda (2020) found that university students experience high levels of stress, depression, and anxiety in their current study. Stress, which has become a part of university students' lives due to various internal and external expectations, is a problem that negatively affects students' mental health and well-being (Reddy et al., 2018). Studies revealing high rates of anxiety and depression among university students (Regehr et al., 2013) indicate that there is a need for the development of adequate and appropriate support services and prevention measures (Bayram & Bilgel, 2008).

The literature on stress is extensive and mostly focuses on the negative aspects of stress (Aldwin, 2007). It is important to address the negative consequences of stress, but it is important to understand the characteristics of individuals who face stress and successfully overcome the situation and reveal the transformative power of stress (Park, 1998). The stress and coping literature (Park, 1998), which focuses on the negative effects of stressful situations, has undergone a paradigm shift in the deficient perspective focusing on psychopathology (Dürü, 2006) with the realization that not everyone exposed to stressful life events develops psychological problems (Ssenyonga et al., 2013). Rudland et al. (2009) state that the negative consequences of stress should not be focused on, and they state that stress should not be seen

as a phenomenon that should be avoided. Because stress has a learning-promoting aspect. In addition to the research findings showing the negative effects of stress, the findings of the studies showing the positive gains caused by stress and the emotional and physical harmony of these gains (Tennen & Affleck, 2002) have made the concept of growth due to stress gain importance.

Stress-related growth is when a stressful event causes positive changes in a person's philosophy of life, personality, social relations, and coping behaviors over time (Park et al., 1996). Although there are many negative consequences caused by stress, it is seen that confronting stress provides a broader perspective on life, gains new coping skills, improves social relations and personal resources (Park & Fenster, 2004). Stress-related growth provides support for the formation of schemas that will support coping skills; it has been seen that it increases self-confidence, self-control resources, and psychological resilience, and also contributes to the development of personal resources such as self-esteem and competence by positively affecting interpersonal relationships (Aldwin, 2007; Calhoun et al., 2010; Cassidy et al., 2014; Sobol & Ben-Shlomo, 2019). The psychological and social resources provided by stress-related growth prepare individuals to be stronger in the face of stressful situations. Considering the relationship between stress-related growth and positive health outcomes, we think that it is more functional to turn to resources related to the concept of stress-related growth (Cassidy et al., 2014). Understanding the mechanisms associated with positive transformations caused by stressful situations can be considered as an extremely functional resource for preventive and therapeutic approaches to be developed for individuals who have to face stressful situations. Because it is known that stress-related growth has an important effect on the responses to stress and reducing the negative effects of stress (Park & Helgeson, 2006).

Although distress is often referred to when describing stress, it is important to have adequate resources to cope with stress in our increasingly complex and damaging world (Selye, 1956). Considering that it is not possible to escape from stress, which is a part of life, and that stress negatively affects mental health (Yılmaz, 1991), the importance of the concept of stress-related growth emerges. When studies on stress-related growth are examined, it is understood that stress-related growth is important for individuals' positive mental health and personal resources (Park & Fenster, 2004). Psychological resources such as resilience (Salim, Wadey & Diss, 2016), resilience and self-esteem (Dolbier et al., 2010), and optimism and positive affect (Park et al., 1996) are closely related to stress-related growth. The coronavirus epidemic, which has been going on for the last two years, has emerged as an important stress factor and has shown that the psychological and emotional wounds caused by the pandemic are as worrying as the treatment of the physical symptoms of the stressful situation (Gonda & Tarazi, 2021). With the pandemic, it has emerged that it is necessary to focus on the resources that enable people to cope and the factors that contribute to increasing the health and well-being of individuals in the face of stressful situations (Kalaitzaki & Tamiolaki, 2020). The distress caused by the pandemic has once again shown that it is valuable to focus on strengths and to explore the strengths that can be a source for us in crises (Waters et al., 2021). It is known that there is a need for studies aiming to increase human potential in the national and international literature (Kararımak & Siviş, 2008). It is a priority for mental health professionals to recognize and strengthen the factors that support mental health, such as stress-related growth (Solcova & Tavel, 2017), which expresses the positive changes and psychological benefits that occur as a result of stressful experiences. As the negative effects of the pandemic on mental health in the last two years have once again shown, it is extremely important to reveal and strengthen protective factors for mental health. Accordingly, this study, it is aimed to adapt a scale to measure stress-related growth, which is considered as a source of protective and preventive mental health.

There are some studies in the literature to measure the concept of stress-related growth. One of them is the long form of the Stress-Related Growth Scale (SRGS) adapted to Turkish by Güneş (2001). This scale consists of 50 items and is considered impractical in terms of application. Adaptation studies of the scale were carried out with earthquake victims. Considering the possibility that stress-related growth, which should be considered as a process, can also occur as a result of daily life difficulties (Cassidy et al., 2014), It is thought that the scale should also be tested in non-clinical populations with daily life problems. Another scale is Posttraumatic Growth Inventory adapted by Kağan et al. (2012). The adaptation studies of the Posttraumatic Growth Inventory were then carried out by Aydın and Kabukçuoğlu (2019) in a study group consisting of cancer patients. The Post Traumatic Growth Inventory is in a 5-point Likert type.

These scales are long in terms of the number of items. It seems that there is a need for a more useful, short, practical, and user-friendly measurement instrument. Erkuş and Selvi (2019) state that the margin of error of inconsistent answers and statistical analyzes increases when there are more than 4 categories. In this respect, the fact that the Stress-Related Growth Scale Short Form is answered in a 3-point Likert type is thought to have advantages in terms of ease of use. From this point of view, the present study aims to perform the validity and reliability studies of the 15-item short version of the SRGS on university students. The present study will contribute to the examination of stress-related growth and will pave the way for more studies on this subject.

## METHOD

This study aims to adapt the Stress-Related Growth Scale Short Form (SRG-SF) developed by Park et al. (1996) into Turkish. In this section, the participants, data collection procedure, data collection instruments, and the data analysis were described.

### Study Groups

To adapt the SRGS-SF to Turkish, the convenience sampling method was used to determine the study group. Convenience sampling is based on the selection of items that are quick and easy to reach from all participants (Baltacı, 2018). This sampling method was preferred due to problems related to accessibility and speed during the pandemic period. This study was based on three samples of university students.

### Linguistic Equivalence Group

The first group in which linguistic equivalence of the scale was tested had 30 students (23 women, 7 men). The mean age was 23.1 years (SD = 4.91). All of the participants were students in the English Language and Literature department of a state university.

### Construct Validity Group

The second group in which we examined the factor structure of the scale consisted of 261 university students (160 women, 99 men, 2 other). Their mean age was 20.96 years (SD = 2.61). The majority of the group consisted of perceives the socio-economic level as medium (n = 224, 85.8%) and consisted of the students of the Faculty of Education (n = 79, 30.3%). In the last 12 months, the participants experienced future anxiety (n = 179, %19.93), family problems (n = 138, %15,38), economic problems (n = 130, %14.48), academic problems (n = 126, %14,03) and social/interpersonal problems (n = 102, %11.36).

## Criterion Validity Group

The third group, in which the criterion validity of the scale was tested, consisted of 340 participants (260 women, 79 men, 1 other). The mean age of the study group was found to be 20.63 years. The majority of the participants consisted of perceived their socio-economic level as medium (n = 287, 84.4%) and the majority of the group consisted of the students of the Faculty of Education (n = 157, 46.2%). In the last 12 months, it was observed that the participants experienced future anxiety (n = 257, 24.02%), economic problems (n = 166, 15.51%), family problems (n = 155, 14.5%), academic problems (n = 136, 12.71%) and social/interpersonal problems (n = 97, 9.06%).

## Ethical Statement

In this study, all the rules stated in the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. Accordingly, the research was reviewed by Gazi University Ethics Committee, and permission was given (REF: 2020-695). In addition, the participants participated in the study voluntarily.

## Data Collection Instruments

The data was provided using a Personal Information Form, SRGS-SF (Park et al., 1996), Cognitive Appraisal Scale (Işık, 2009), Coping Attitudes Assessment Scale (Dicle & Ersanlı, 2015), and Brief Resilience Scale (Doğan, 2015).

**Personal Information Form.** To determine the demographic information of the participants, a personal information form was created by the researcher. This form contains information about the students' gender, faculty, socio-economic level, and stressful situations they have experienced/experienced.

**Stress-Related Growth Scale Short Form (SRGS-SF).** To determine the stress-related growth tendency of university students in the research, the Turkish culture-adapted form of the SRGS was developed by Park et al. (1996). Park et al. (1996) developed the SRGS, which consists of 50 items and one dimension, to measure stress-related growth. Park et al. (1996) examined item-total correlations for the SRGS. They selected the 15 items with the highest correlation with the total score. Hettler and Cohen (1996) performed a similar procedure. The comparison of the findings revealed good agreement on the SRGS items that were most associated with the total score. SRGS-SF was created from this study. The Cronbach's alpha coefficient of the 50-item scale form in university students was found to be .94 (Park et al., 1996). Hettler and Cohen (1996) found the Cronbach's alpha coefficient as .96 in their study. The Turkish version of the scale consists of 15 items in its original form. The scale is one-dimensional and 3-point Likert type (0 = Not at all suitable, 1 = Somewhat appropriate, 2 = Very appropriate). The Cronbach alpha internal consistency coefficient of the scale adapted to Turkish culture was .85 in linguistic validity studies, .83 in CFA studies, and .76 in criterion validity studies.

**Cognitive Appraisal Scale.** The scale was developed by Lazarus and Folkman (1984) to determine the cognitive assessment levels of university students. The adaptation of the scale to the Turkish language was carried out by Işık (2009). The scale, which consists of 14 items and has a two-factor structure, is in the 5-point Likert type. Scale items are scored between (0) Not at all appropriate and (4) Completely appropriate for each statement. The internal consistency coefficient of the scale was found to be .90 for the primary appraisal sub-dimension and .87 for the secondary appraisal sub-dimension (Işık, 2009). In

this study, the Cronbach's alpha internal consistency coefficient for the primary assessment sub-dimension of the scale was found to be .90.

**Coping Attitudes Assessment Scale.** Developed by Carver et al. (1989) and revised by Zuckerman and Gagne (2003), the scale was adapted into Turkish by Dicle and Ersanlı (2015). The scale consists of 32 items and has a 5-factor structure. The scale is in 4-point Likert type. The items of the scale are answered as "I Never Do This (1)", "I Do That A Little Bit (2)", "I Do That Like This (3)", "I Do This Mostly (4)". The internal consistency coefficients of the scale were .96 for the self-help sub-dimension, .98 for the approach sub-dimension, .98 for the accommodation sub-dimension, .98 for the avoidance sub-dimension, and .98 for the self-punishment sub-dimension (Dicle & Ersanlı 2015). In this study, the Cronbach's alpha coefficients of the scale were .81 in the self-help sub-dimension; .84 in the approach sub-dimension; .80 in the adaptation sub-dimension; It was found to be .64 in the avoidance sub-dimension and .87 in the self-punishment sub-dimension.

**Brief Resilience Scale.** The scale was developed by Doğan (2015) to measure the psychological resilience levels of individuals. The scale consists of 6 items and one dimension. The 5-point Likert-type scale is answered as "Not at all appropriate" (1), "Not suitable" (2), "Slightly appropriate" (3), "Appropriate" (4), "Totally Appropriate" (5). The internal consistency coefficient of the scale was found to be .83 (Doğan, 2015). In this study, the Cronbach alpha internal consistency coefficient of the scale was found to be .80.

## Process

For the adaptation of the scale, first permission was obtained from Park et al. (1996) who developed the scale. After obtaining the permissions, the SRGS was independently translated into Turkish by 5 academicians who have at least a doctorate in Counseling and Guidance, have sufficient English and Turkish language skills, and have participated in studies related to the context of the scale. Then, the translated versions of the scale were evaluated by 4 psychological counselors and 1 English teacher who had sufficient English and Turkish language skills and had at least an expert degree. As a result of the evaluations, the most suitable translations were determined in terms of language structure, cultural factors, and intelligibility. A draft Turkish form was created by the researchers in the direction with the expert opinions. Then, the items translated into Turkish were translated into their original language by an expert English Linguist and the back translation was presented to the developers of the scale. After the necessary adjustments were made in line with the suggestions of the developers regarding the semantic features of the translations, the scale was given its final form. The final version of the scale was evaluated by 2 Turkish language experts in terms of language and expression. The scale form, which was determined to be suitable for Turkish translation, was prepared for linguistic equivalence study.

The data collection process was initiated after the approval of the ethics committee. Data were collected through online forms. The scale, whose translation into Turkish was completed, was applied to a group of students studying at the English Language and Literature Department of a state university and having a command of both languages. In this study, in which linguistic equivalence was tested, the Turkish and English forms of the scale were administered to the participants with an interval of 14 days. After proof of linguistic equivalence, data were collected from two different study groups via online forms to test the validity, reliability, and item statistics of the scale.

## Data Analysis

We used SPSS and LISREL programs for linguistic equivalence, validity, and reliability analysis in the study. In the adaptation study, we analyzed the correlation coefficients between the two measures and dependent groups' t-test results with SPSS to demonstrate that the original English version of the scale and the translated Turkish version were equivalents. Before performing the validity and reliability analyzes of the scale, we examined the data sets in terms of missing data, outliers, and normality (Tabachnick & Fidell 2007). We found that there was no missing data in the data sets, and we detected the outliers by examining Box-Plot plots. We removed the detected outliers from the datasets. We examined the skewness and kurtosis values to determine whether the datasets fit the normal distribution. In the second study group, skewness and kurtosis values were found to be -.64 and -.11, respectively. In the third study group, the skewness and kurtosis values were found to be -.51 and -.45, respectively. Tabachnick and Fidell (2007) state that skewness and kurtosis values between -1.5 and +1.5 indicate a normal distribution. Accordingly, we determined that the data sets have a normal distribution. After determining that the data were suitable for the analysis, we tested the factor structure of the scale with confirmatory factor analysis (CFA). To test the construct validity of the scale, we applied first-level CFA using the LISREL program. Item analysis was performed to control the SRGS-SF items. For the criterion-related validity of the scale, we examined the relationship between Coping Attitudes Assessment Scale (Dicle & Ersanlı, 2015), Brief Psychological Resilience Scale (Doğan, 2015) and Cognitive Assessment Scale (Işık, 2009). In the criterion-related validity study, we examined the relationship of the SRGS with other scales using the Pearson correlation coefficient. To determine the internal consistency of the scale, we examined the Cronbach's alpha coefficient in the data obtained from 3 different study groups reached during the study.

## RESULTS

### Linguistic Validity

To determine whether the equivalence between the Turkish form of SRGS and the original form could be achieved, applications were made with students who are fluent in English and Turkish languages at 14-day intervals. Students from 30 English Language and Literature departments from a state university participated. Majority of the participants are female students ( $n = 23, 76.7\%$ ). In this context, the correlations between the original and Turkish forms of the scale and the mean scores between the groups were examined. Average scores and correlation findings for Turkish and English forms are given in Table 1 (See Table 1).

**Table 1. Correlation findings**

Scale	Mean	SD	r
Turkish Form	20.87	5.79	.77*
English Form	21.70	5.55	

\* $p < .01, n = 30$

When Table 1 was examined, it was determined that there was a positive and highly significant relationship between the Turkish version of SRGS-SF and its original version ( $r = .77, p < .01$ ). Accordingly, the high correlation value between both applications is seen as important evidence for linguistic equivalence (Öner, 1987). Seçer (2015) states that a correlation of .70 and above will be sufficient for linguistic equivalence. Accordingly, correlation results showed that both scale forms can be considered as proof that they are equivalent. Within the scope of linguistic validity, it was examined

whether there was a significant difference between the total scores of the participants in Turkish and the original scale form, and it is given in Table 2 below.

**Table 2. Dependent groups t-test results between Turkish and English forms**

Scale	Mean	SD	t	p
Turkish Form	20.87	5.80	-1.19	.24
English Form	21.70	5.56		

\* p < .05, n = 30

When Table 2 was examined, it was seen that there was no significant difference between the scores of the participants in the Turkish version of SRGS-SF and the original version ( $t(30) = -1.19, p > .05$ ). Accordingly, the findings provided that both scale forms are similar to each other in terms of language. In addition, at this stage, the Cronbach Alpha internal consistency coefficient was calculated for both scales. The Cronbach Alpha internal consistency coefficient for the Turkish and English forms of the scale was found to be .85.

### Item Analysis and Construct Validity

Within the scope of item analyses and validity and reliability studies of the Turkish form of SRGS, firstly, the averages, standard deviations, skewness, and kurtosis values of the items related to the scale were examined (See Table 3).

**Table 3. Item statistics**

Item	Mean	Sd	Skewness	Kurtosis	Item-Total Correlation	Cronbach's Alfa if item deleted
M1	1.27	.694	-.415	-.880	.483**	.825
M2	1.30	.735	-.527	-.989	.519**	.823
M3	1.38	.661	-.608	-.652	.507**	.823
M4	1.63	.652	-1.547	1.053	.561**	.819
M5	1.52	.605	-.885	-.210	.584**	.818
M6	1.38	.721	-.704	-.783	.571**	.819
M7	1.36	.680	-.592	-.726	.601**	.817
M8	1.43	.673	-.755	-.549	.632**	.814
M9	1.46	.647	-.807	-.405	.597**	.817
M10	1.68	.506	-1.227	.425	.519**	.822
M11	1.52	.671	-1.063	-.093	.576**	.818
M12	1.26	.781	-.501	-1.194	.443**	.830
M13	1.21	.768	-.380	-1.214	.585**	.819
M14	1.54	.629	-1.025	-.018	.593**	.817
M15	1.03	.774	-.053	-1.325	.469**	.828
SRGS-SF	20.96	5.58	-.642	-.111	-	.831

\*\*p < .01

In this context, it was determined that the skewness values of the items ranged between -.053 and -1.547, and the kurtosis values between 1.053 and -1.325. Moreover, item-total correlations were found to vary between .443 and .632. In addition, according to the Cronbach's Alpha, if item deleted operation, it was determined that all values were lower than the internal consistency coefficient for the whole scale.

### Construct Validity

To test the construct validity of the Turkish version of SRGS, CFA was used through the LISREL package program. CFA results showed that the initial fit values of the scale were below acceptable limits. Then, the modifications suggested by the model were carried out. The first modification was made

between item-1 and item-9, and the second modification was made between item-10 and item-11. As a result of the modification processes, it was understood that the fit values were at the least acceptable level. The obtained results are given in Table 4.

**Table 4. Model fit statistics**

Fit Criteria	0– Modification	1– Modification	2– Modification	Criterion	Conclusion
$\chi^2 / sd$	3.26	2.85	2.49	< 3	Perfect Fit
RMSEA	.09	.08	.07	< .08	Good Fit
GFI	.87	.88	.90	> .90	Good Fit
SRMR	.07	.06	.06	< .08	Good Fit
NNFI	.88	.90	.91	> .90	Good Fit
CFI	.90	.91	.92	> .90	Good Fit

When the fit values in Table 4 were examined, it was concluded that the fit values obtained as a result of 2-Modification showed good and perfect fit.

### Criterion Validity

At this stage, it is aimed to compare the Turkish version of SRGS-SF with other measurement instruments in the literature. Correlations with other measurement instruments used in the literature are used for criterion-related validity (Seçer, 2015). In this context, the theoretical structure of the concept to be measured and the measurement instruments used in the development of the original form were taken into consideration. Therefore, the Coping Attitudes Assessment Scale (Dicle & Ersanlı, 2015), the Brief Psychological Resilience Scale (Doğan, 2015) and the Cognitive Assessment Scale (Işık, 2009) were preferred in this study.

**Table 5. Descriptive statistics and correlations**

Variable	1	2	3	4	5	6	7	8
Stress-Related Growth (1)	–							
Brief Resilience (2)	.15**	–						
Self-Help (3)	.25**	.05	–					
Approach (4)	.31**	.30**	.15**	–				
Accommodation (5)	.34**	.20**	.27**	.48**	–			
Avoidance (6)	-.16**	-.28**	.03	-.18**	-.08	–		
Self-Punishment (7)	-.22**	-.40**	.00	-.18**	-.09	.33**	–	
Primary Appraisal (8)	-.13*	-.16**	.02	-.04	-.05	.04	.27**	–
Mean	22.16	18.31	15.02	21.80	20.01	10.58	14.73	16.76
SD	4.61	4.71	4.13	4.13	4.20	3.12	4.86	12.29

\*p < .05, \*\*p < .01, N = 340

Table 5 is examined, psychological resilience with SRG ( $r = .15$ ,  $p < .01$ ), self-help ( $r = .25$ ,  $p < .01$ ), approach ( $r = .31$ ,  $p < .01$ ), adjustment ( $r = .34$ ,  $p < .01$ ), avoidance-avoidance ( $r = -.16$ ,  $p < .01$ ), self-punishment ( $r = -.22$ ,  $p < .01$ ), primary assessment ( $r = -.13$ ,  $p < .05$ ) were found to have significant negative correlations.

## DISCUSSION

In this study, we examined the psychometric properties of the Stress-Related Growth Scale Short Form (Park et al., 1996) in a study group consisting of Turkish university students. To test whether linguistic equivalence was achieved after the translation studies of the scale, we looked at the correlation between the Turkish and English forms. We found a high level of correlation between the Turkish and English forms ( $r = .773$ ,  $p < .01$ ). Seçer (2015) states that the scales are linguistically equivalent when the

correlation between the two applications is .70 and above. The fact that the correlation coefficient obtained in this study was over .70 was considered as important evidence for the linguistic equivalence of the SRGS-SF. We also applied the dependent groups' t-test on the relevant data. We found that there was no significant difference in the scores between the two applications ( $t(30) = -1,191, p > .05$ ). We considered the lack of significant difference between the means as evidence for the equivalence of the two scales. In line with these findings, we can state that there is no linguistic difference between the two forms of the scale and that linguistic validity is ensured.

CFA was performed to confirm the single-factor structure of the scale in Turkish. As a result of the CFA, it was seen that the fit values of the model were below the acceptable limits. The suggested modification values were evaluated by considering the theoretical structure of the items. Then, the error variances of items 1 and 9 and items 10 and 11 were matched. According to the CFA results after the modifications, we found that the fit indices were  $\chi^2 / df = 2.49$ , GFI = .90, CFI = .92, NNFI = .91, GFI = .90 and RMSEA = .076. Sun (2005) states that values greater than .90 indicate acceptable fit. In this direction, we have seen that the values obtained as a result of CFA are within the minimum acceptable limits. These results show that the single-factor structure of the scale is approved in Turkish culture.

As part of the reliability studies of the scale, Cronbach's Alpha coefficient and item-total correlation methods were used. Accordingly, the Cronbach Alpha reliability coefficient calculated for the SRGS-SF was .85 in linguistic validity studies; We found it to be .83 in CFA studies and .76 in criterion validity studies. Kline (2005) and Cronbach state that the alpha reliability coefficient should be at least .70. This result shows that the scale offers reliable measurements in analyzes made in different study groups. When the item-total correlation values of the scale were examined, we saw that the item-total correlation scores of the scale ranged from .44 to .63. Özdamar (2016) states that item-total correlations should be between .30 and .90. All these findings confirm that the scale is a reliable measurement instrument.

In order to determine the criterion validity of the scale, we examined the relationships between the SRGS-SF and the Coping Attitudes Assessment Scale (Dicle & Eranlı, 2015), Brief Resilience Scale (Doğan, 2015) and Cognitive Appraisal Scale (Işık, 2009) scales with Pearson Correlation analysis. We found moderately significant positive correlations between stress-related growth and approach ( $r = .305, p < .01$ ) and accommodation ( $r = .343, p < .01$ ). Moreover, we found that there were negative low-level significant correlations between stress-related growth and avoid-avoidance ( $r = -.16, p < .01$ ), self-punishment ( $r = -.22, p < .01$ ), primary appraisal ( $r = -.13, p < .01$ ).

This study has some limitations. The first of these limitations is related to the gender distribution of the participant group. 69% ( $n=443$ ) of the total number of participants in the three groups in which we collected the data of the study were women. Second, test-retest validity could not be assessed. Another limitation is that we did not determine the cutoff score. Increasing test scores indicate more stress-related growth.

In line with these limitations, it is recommended that researchers ensure a balanced distribution in terms of gender in the selection of the sample for future validity and reliability studies. In addition, as part of the reliability studies, it is recommended that researchers use the test-retest method to determine whether the measurement results based on the SRGS-SF are consistent over time. Investigating mechanisms that may be associated with stress-related growth is an important goal for future research. Considering that stress is extremely common, research on protective mental health variables associated with stress-related

growth will provide significant support to studies to increase positive stress-related outcomes. Finally, researchers are advised to examine stress-related growth in terms of various developmental stages and clinical and non-clinical groups. Considering that stress may differ developmentally, and stress-related growth levels will vary in clinical populations compared to non-clinical populations, we think that these studies will make important contributions.

In summary, despite all the limitations, the findings obtained from this adaptation study revealed that the SRGS-SF is a valid and reliable scale that can be considered in studies to measure the improvement experienced by individuals who experience stressful situations in various fields in Turkey. Researchers may prefer the SRGS-SF for studies investigating different variables related to stress-related growth. These studies can help expand the literature on preventive mental health and resources to help cope with stress. This situation can provide some preventive and improving contributions to the literature on stress. By using these instruments in individual counseling and group counseling practices, mental health professionals can follow the development of the clients as a result of the stress-related processes of the therapy.

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### **Author Contribution**

This study was conducted by all the authors working together and cooperatively. All of the authors substantially contributed to this work in each step of the study.

### **Conflict of Interest**

It has been reported by the authors that there is no conflict of interest.

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### **Ethical Statement**

This study was completed in accordance with the Helsinki Declaration. In line with this, the study was permitted by Gazi University Ethics Committee.

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