Research Psikiyatride Güncel Yaklaşımlar-Current Approaches in Psychiatry 2025; 17(Suppl 1):427-437
doi: 10.18863/pgy.1711596

Turkish Validity and Reliability Study of the Emotion Regulation Questionnaire-Short Form

Duygu Düzenleme Anketi-Kısa Formunun Türkçe Geçerlik ve Güvenirlik Çalışması

Merve Sepetçi[1], Yıldız Bilge[2]

[1]Istanbul Sabahattin Zaim University, Istanbul
[2]University of Health Sciences, Istanbul

ABSTRACT

Objective: This study aimed to adapt the Emotion Regulation Questionnaire-Short Form (ERQ-SF) to Turkish, and to investigate its psychometric properties.
Method: A total of 325 adults (255 females (78.5%) and 70 males (21.5%) between the ages of 18-58 (27.86±8.37), consisting of university students and community samples, participated in the study. To evaluate the test-retest reliability, 41 university students were administered the DDA-KF at five-week intervals, and for criterion-related validity, the DDA-KF, Emotion Regulation Questionnaire, Difficulties in Emotion Regulation Questionnaire, Perth Alexithymia Scale and Depression, Anxiety and Stress Scale were administered to a community sample of 165 people, 142 (86.1%) women and 23 (13.9%) men, including university students.
Results: The Cronbach's alpha coefficients of the scale were .71 for the suppression dimension and .73 for the cognitive reappraisal dimension. According to the findings of the exploratory factor analysis, the scale was suitable for factor analysis and the scale items had high factor loadings ranging from .64 to .89, and the confirmatory factor analysis showed that the fit indices of the two-factor model were good (X2/df =1.39, CFI=.98, TLI=.96, GFI=.97, AGFI=.94) in parallel with the original study.
Conclusion: The ERQ-SF demonstrates strong psychometric properties, making it a valid and reliable tool for assessing emotion regulation in Turkish samples for research purposes. Additionally, its concise six-item format ensures ease of administration.
Keywords: Emotion regulation, cognitive reappraisal, suppression, validity, reliability, cross-cultural validity

ÖZ

Amaç: Bu araştırmada, Duygu Düzenleme Anketi-Kısa Formunun (DDA-KF) Türkçe uyarlama çalışması ve psikometrik özelliklerinin incelenmesi amaçlanmıştır.
Yöntem: Araştırma üniversite öğrencileri ve toplum örnekleminden oluşan 18-58 (27,86±8,37) yaş aralığındaki 255 kadın (%78,5) ve 70 erkek (%21,5) olmak üzere toplam 325 kişiyle yürütülmüştür. Test tekrar test güvenirliği için 41 üniversite öğrencisine dört hafta ara ile DDA-KF uygulanmış; ölçüt bağıntılı geçerlik için içerisinde üniversite öğrencilerinin de bulunduğu 142'si (%86,1) kadın ve 23'ü (%13,9) erkek olmak üzere toplam 165 kişiden oluşan toplum örneklemine DDA-KF ile birlikte Duygu Düzenleme Anketi, Duygu Düzenleme Güçlükleri Anketi, Perth Aleksitimi Ölçeği ile Depresyon, Anksiyete ve Stres Ölçeği uygulanmıştır.
Bulgular: Ölçeğin Cronbach Alfa katsayılarının bastırma boyutu için ,71 ve bilişsel yeniden değerlendirme boyutu için ,73 olduğu saptanmıştır. Açımlayıcı faktör analizi bulgularına göre ölçeğin faktör analizine uygun olduğu ve ölçek maddelerinin ,64 ila ,89 arasında değişen yüksek düzeyde faktör yüküne sahip olduğu, doğrulayıcı faktör analizi sonucunda ise özgün çalışmaya paralel şekilde iki faktörlü modelin uyum indekslerinin iyi düzeyde olduğu (X2/df=1,39; CFI=,98; TLI=,96; GFI=,97; AGFI=,94) görülmüştür.
Sonuç: DDA-KF'nin Türk örnekleminde duygu düzenlemenin değerlendirilmesinde kullanılmak için iyi düzeyde psikometrik özelliklere sahip olduğu, araştırma çalışmalarında kullanılabilecek geçerli ve güvenilir bir ölçme aracı olduğu tespit edilmiştir. Ayrıca DDA-KF'nin yalnızca altı maddeli olması nedeniyle uygulama kolaylığına sahip bir ölçek olduğu söylenebilir.
Anahtar sözcükler: Duygu düzenleme, bilişsel yeniden değerlendirme, bastırma, geçerlik, güvenirlik, külterlerarası geçerlik

Introduction

Emotion is generally a conscious mental response to an object/situation or person, experienced subjectively and accompanied by physiological and behavioral changes in the body (Amerikan Psychiatric Association-APA 2024). When emotions, which are a functional and integral part of life, are inconsistent with a particular situation, emotional responses need to be regulated in a way that better serves the person's goals (Gross 2002). In this context, emotion regulation can be described as people's efforts to change the course of their developing emotional responses (Gross 2015).

The field of "emotion regulation," which is quite popular among the research topics of psychology, emerged in the mid-1990s, and interest in the field of emotion regulation has grown rapidly since then (Gross 2015). Emotion regulation is defined as the internal and external processes responsible for monitoring, evaluating, and

Address for Correspondence: Merve Sepetçi, Istanbul Sabahattin Zaim University, Istanbul, Türkiye
E-mail: sepetcimerve@yahoo.com
Received: 01.06.2025 | **Accepted:** 02.11.2025

modifying the intensity and temporal characteristics of emotional responses (Thompson 1991, Thompson 1994). During emotion regulation, individuals can increase, sustain, or decrease the intensity of positive or negative emotions (Koole 2009).

There are different approaches in the literature on emotion regulation. In one of these approaches, emotion regulation is considered as cognitive and behavioral strategies (Parkinson and Totterdell 1999). Strategies involving individuals' thought processes (e.g., avoiding thinking about the problem) are considered cognitive strategies, while strategies involving behavioral processes (e.g., avoiding the problematic situation) are considered behavioral strategies (Parkinson and Totterdell 1999). In the approach of Garnefski et al. (2001), which focuses on cognitive emotion regulation strategies, emotion regulation is assessed in terms of nine different cognitive dimensions: self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and blaming others (Garnefski et al. 2001). Another approach explains emotion regulation ability as components such as awareness and understanding of emotions, acceptance, controlling impulsive behaviors while experiencing negative emotions, and the ability to behave in accordance with desired goals (Gratz and Roemer 2004). In this approach, emotion regulation ability is assessed by measuring the difficulties experienced in these components.

According to Gross's (1998) Emotion Regulation Process Model (Gross 1998, Gross 2002) which is the most widely accepted theory in the field of emotion regulation and is addressed in this study, there are five dimensions that occur during different time points in the emotion experience. These are: situation selection, situation modification, attentional deployment, cognitive change, and response modulation (Gross 1998, Gurera and Isaacowitz 2019). The emotion regulation strategies employed prior to the emergence of an emotional response include situation selection, situation modification, and attentional deployment, and these strategies are considered “cognitive reappraisal” strategies. The response-focused emotion regulation strategies employed after the emergence of an emotional response are considered “suppression” strategy. The emotion regulation process model predicts that different regulation strategies will have different effects and, in general, that cognitive reappraisal applied earlier in the emotion formation process will be more effective than suppression applied later (Gross 1998, Gross 2015).

Scales developed based on different emotion regulation approaches exist in the literature. In the Turkish literature, the Cognitive Emotion Regulation Scale (Garnefski et al. 2001, Tuna and Bozo 2012), which addresses emotion regulation as cognitive strategies; the Emotion Regulation Difficulties Scale and the Emotion Regulation Questionnaire (ERQ) (Bjureberg et al. 2016, Yiğit and Guzey Yiğit 2019), developed based on Gross's emotion regulation process model, are among the most frequently used scales in this field (Totan 2015, Preece et al. 2023). To date, the most widely used measure for assessing emotion regulation has been Gross and John's ERQ (Preece et al. 2023). However, although there is a perception in the literature that short measurement tools developed by meeting the expected standards for each measurement tool are functional (Koğar 2020), and that longer measurements tend to be more reliable and valid, short measurements conducted under the right conditions can be equally valid (Smith et al. 2000, Smith et al. 2012, Koğar 2020) and that short forms may be a more practical measurement tool, especially in research designs requiring repeated applications over several days or in large-scale epidemiological studies (Groth-Marnat 2009). For these reasons, a short form of the ERQ has been developed, reducing the length of the scale to optimize its use in time-constrained situations (Preece et al. 2023).

Although the original version of the ERQ-SF is in English, only a Polish adaptation has been conducted (Larionow et al. 2024, Stanford Psychophysiology Laboratory 2024). This study aims to examine the validity and reliability of the Turkish version of the ERQ-SF and to investigate the psychometric properties of the scale. It is thought that the Turkish version of the ERQ-SF could contribute especially to studies with time-limited.

Method

Sample

The number of participants in the study was determined based on information from scale development studies indicating that the sample size should be between 5 and 10 times the number of items (Kline 1994, McCallum et al. 2001). The study included female and male participants aged 18 years and older, literate, who voluntarily agreed to participate in the study, and who did not currently have any psychiatric diagnosis or use medication. In addition to this, participants under the age of 18 and over the age of 60, and those who currently had any psychiatric diagnosis and used medication were exclusion criteria for the study. Within the context of the inclusion and exclusion criteria, the forms were completed by a total of 339 individuals. Data from 3 participants

who did not meet the age criteria and 11 participants with psychiatric diagnoses were not included in the study. Any clinical interviews were conducted with the participants within the context of the study. Accordingly, the data obtained were based on the participants' statements.

Within the study, the dataset consisting of a total of 325 participants, including 255 women and 70 men, was randomly divided into two groups. Confirmatory Factor Analysis (CFA) was performed on a sample of 167 people, 134 women (80.2%) and 33 men (19.8%) (28.54±8.43). Including 121 women (76.6%) and 37 men (23.4%) (27.13±7.79), and Exploratory Factor Analysis (EFA) was performed on a sample of 158 people. For the test-retest reliability of the scale adaptation study, the scale was administered to a total of 41 university students aged 18-24 (19.98±1.47), 36 of whom were women (87.8%) and 5 of whom were men (12.2%). For the section containing criterion-related validity, the Emotion Regulation Questionnaire (ERQ), the Difficulties in Emotion Regulation Scale (DERS), the Perth Alexithymia Questionnaire (PAQ), and the Depression, Anxiety, and Stress Scale (DASS) were administered to a community sample of 165 individuals, including university students, comprising 142 women (86.1%) and 23 men (13.9%).

Procedure

For the Turkish adaptation of the ERQ-SF, permission from the scale's author and information about the scale were received on March 7, 2024. The Turkish translation of the scale was carried out by five individuals, two of whom are psychologists proficient in English. Each item and its translations were reviewed, and items that were considered to best represent the original items were identified. Each item was then given to experts proficient in English for retranslation into English. The retranslated scale items were compared with the original items, and differences were identified. The final version of the ERQ-SF scale was determined within the study. Permission for the study was also received from the Istanbul Sabahattin Zaim University Ethics Committee on July 19, 2024, with the number 2024/06. The data was collected between August and September 2024 through Google forms prepared online and distributed to researchers and their relatives. The online forms were created by transferring the forms to be used in the study to the online environment, with each form remaining on a single page. Before starting the study, the form was first tested by the researchers and then checked and tested electronically by four different participants trained in the same program. Following this process, the application was started.

The online form created as part of the study was announced on the researcher's personal social media account. Participants were asked to fill out the online form as part of the scale development study. They were informed that filling out the form would take approximately 20 minutes, that participation in the study was voluntary, and that they could stop participating at any point during the study. It was mandatory to answer every question on the study form. To prevent participants from filling out the form more than once, repeated responses were blocked in the form settings, and control was ensured via IP address and browser cookies. At the beginning of the study, an informed informed consent form was presented, demographic information was requested in the participant section, and the scale forms used in the study were added. Participants had the opportunity to return to the study during its course, but no additional information was provided on this subject. The online form consisted of a total of 6 screens and 83 questions. No encouragement was given to individuals to participate. Convenience sampling was preferred for sample selection. All participants in the study provided consent to participate voluntarily.

Measures

Demographic Information Form

An information form was created to collect data on participants' sociodemographic characteristics, such as age, gender, marital status, and educational background. This information form and other forms were provided to participants in a booklet, and participants were asked to complete the forms themselves. No clinical interviews were conducted with participants as part of this study.

Emotion Regulation Questionnaire-Short Form

The psychometric study of this scale, which is a 6-item short form of ERQ (Gross and John 2003) consisting of two subscales and a total of 10 items, was conducted by Preece et al. (Preece et al. 2023). The ERQ-SF consists of 6 items and is assessed using a 7-point Likert scale (1=I completely disagree and 7=I completely agree). The reliability coefficient of the scale, which consists of two subscales, “cognitive reappraisal” and “expressive suppression,” was found to be 0.87 for cognitive reappraisal and 0.76 for expressive suppression. The reliability analysis conducted within the study revealed Cronbach's Alpha values of 0.73 for the cognitive reappraisal

subscale and 0.71 for the suppression subscale.

Emotion Regulation Questionnaire

ERQ is a 10-item measure developed by Gross and John (2003) to assess emotion regulation strategies. Its validity and reliability in Turkish were established by Totan (2015). The scale consists of 10 items in total, comprising two subscales: cognitive reappraisal and suppression. The Cronbach's alpha coefficients for the subscales were determined as 0.78 for the "cognitive reappraisal" subscale and 0.71 for the "suppression" subscale (Totan 2015). The reliability analysis conducted within the study revealed a Cronbach's Alpha value of 0.72 for the cognitive reappraisal subscale and 0.51 for the suppression subscale.

Difficulties in Emotion Regulation Scale

The validity and reliability study of DERS developed by Bjureberg et al. (2016) was conducted by Yiğit and Guzey Yiğit (2019). The scale, consisting of 16 items and 6 subscales, is assessed using a 5-point Likert scale (1=Almost never (%0-10), 2=Sometimes (%11-35), 3=About half the time (%36-65), 4=Most of the time (%66-90), 5=Almost always (%91-100)). When examining the Cronbach Alpha reliability coefficients of the scale, they were determined to be 0.84 for the " clarity" subscale, 0.84 for the "goals" subscale, 0.87 for the " impulse" subscale, 0.87 for the "strategies" subscale, and 0.78 for the "non-acceptance" subscale (Yiğit and Guzey Yiğit 2019). As a result of the reliability analysis conducted within the study, Cronbach's Alpha values were determined as 0.82 for the clarity subscale, 0.76 for the goals subscale, 0.85 for the impulse subscale, 0.88 for the strategies subscale, and 0.80 for the non-acceptance subscale. Furthermore, the Cronbach's Alpha coefficient for the total score, which can also be obtained on the scale, was found to be 0.93.

Perth Alexithymia Questionnaire

PAQ used to assess the dimensions of alexithymia in adolescents and adults— difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking—is a 24-item self-report scale with a 7-point Likert scale (1=strongly disagree, 7=strongly agree) (Preece et al. 2018, Bilge and Bilge 2020). The scale developed by Preece et al. (2018) was adapted into Turkish by Bilge and Bilge (2020). The scale, created within the framework of the attention-appraisal model of alexithymia, consists of 'difficulty identifying negative feelings' (N-DIF; 4 items, Cronbach's Alpha 0.87), 'difficulty identifying positive feelings' (P-DIF; 4 items, Cronbach's Alpha 0.90), 'difficulty describing negative feelings' (N-DDF; 4 items, Cronbach's Alpha 0.85), 'difficulty describing positive feelings' (P-DDF; 4 items, Cronbach's Alpha 0.86), and 'general externally orientated thinking' (G-EOT; 8 items, Cronbach's Alpha 0.85). In this scale, where the total of all items yields an 'alexithymia' score, the subscales can be combined to form composite scales (Bilge and Bilge 2020). In this study, Cronbach's Alpha reliability coefficients were found to be 0.83 for N-DIF, 0.87 for P-DIF, 0.87 for N-DDF, 0.86 for P-DDF, 0.90 for G-EOT, and 0.95 for the general alexithymia score.

Depression Anxiety and Stress Scale-21

DASS, which assesses depression, anxiety, and stress together, consists of 21 items (Sarıçam 2018). The scale, which has three subscales—depressive symptoms, anxiety symptoms, and stress—is assessed using a 4-point Likert scale (0=never, 1=sometimes, 2=often, and 3=almost always). The Cronbach's Alpha reliability values of the subscales, the "depression" subscale, which assesses depressive symptoms, was found to be 0.85; the 'anxiety' subscale, which assesses anxiety symptoms, was found to be 0.80; and the "stress" subscale was found to be 0.77. Within the context of this study, Cronbach's Alpha reliability coefficients were determined to be 0.84 for the depression subscale, 0.84 for anxiety, and 0.79 for stress.

Statistical Analysis

Before conducting the validity and reliability analyses of the ERQ-SF, the normality of the data set was assessed by examining the skewness and kurtosis values. According to George and Mallery (2010), skewness and kurtosis values within the range of ±2 are considered sufficient for the assumption of normality. Within this study, it was determined that the skewness values for ERQ-SF were between -0.45 and 0.18, the kurtosis values were between -1.25 and -0.10, and the data were normally distributed.

As part of the validity and reliability study of the ERQ-SF, Cronbach's Alpha values for internal consistency were used for reliability; test-retest reliability, correlations between ERQ-SF subscales, and Pearson's Moment Correlation Method were applied for scale-related validity. Exploratory and confirmatory factor analyses are techniques used to determine the extent to which a measurement tool measures the structure to be measured (Büyüköztürk 2015). The suitability of the data set for EFA was examined using item correlation, the Kaiser-

Meyer-Olkin (KMO) coefficient, and the Bartlett test (Büyüköztürk 2015). The KMO coefficient and Bartlett's test determine whether the data set is suitable for EFA, and the varimax rotation method is used because the subfactors are interrelated in scale studies in the social sciences (Büyüköztürk 2015). In this study, CFA values were examined by referring to the fit indices suggested by Schermelleh-Engel et al. (2003). The AMOS v.23 program was used for CFA analysis, and the SPSS v25.0 program was used for other statistical analyses (Meydan and Şeşen 2015).

Results

Validity Analysis

EFA and CFA were applied to test the construct validity of the scale. EFA was used to examine the relationships between the items in the data set, with the aim of identifying common factors that explain these relationships. CFA was used to determine whether the factor structure of the original measurement tool was similar in the Turkish version of the scale. The sample group for which EFA and CFA were performed in this study consisted of a total of 325 participants, comprising 255 women (78.5%) and 70 men (21.5%), mostly students aged 18-58 (27.86±8.37). Of the participants, 5.3% reported being elementary and middle school graduates, 19.4% reported being high school graduates, and 75.4% reported being university graduates or above.

Before EFA, Kaiser-Meyer Olkin (KMO) and Bartlett tests were performed to assess the suitability of the data for analysis. KMO values were determined to be 0.65 for factor analysis, and the Bartlett test was found to be significant ($p<.001$). According to the principal component analysis applied to the items using the Varimax axis rotation technique, each subscale loaded onto two factors with eigenvalues greater than 1, and the factor loadings were above .60 (Table 1). It was found that the ERQ-SF cognitive reappraisal subscale explained 33.53% of the total variance, the ERQ-SF suppression subscale explained 31.89% of the total variance, and both subscales together explained 65.42% of the total variance. The factor loadings of the scale items are presented in Table 1.

Table 1. ERQ-SF's factor analysis and internal consistency results

Items	**Components**	
	1	2
3. When I want to feel less negative emotion (such as sadness or anger), I change the way I'm thinking about the situation.	0.83	
1. When I want to feel more positive emotion (such as joy or amusement), I change the way I'm thinking about the situation.	0.80	
5. I control my emotions by changing the way I think about the situation I'm in.	0.79	
4. I control my emotions by not expressing them.		0.89
2. I keep my emotions to myself.		0.83
6. When I am feeling negative emotions, I make sure not to express them.		0.64
Eigenvalue	2.31	1.60
Variance (%)	33.53	31.89
Internal consistency coefficient (Alpha)	0.73	0.71

All factor loadings are significant at the $p<.001$ level; Component 1: Cognitive reappraisal, Component 2: Suppression.

When modification procedures are applied, it is essential to adhere to the theoretical basis. In this context, fit indices can be improved and the model can be made more appropriate by correlating the error terms of items belonging to the same factor (Çokluk et al. 2014). There are different views regarding the evaluation of fit indices derived from CFA. However, the fit indices proposed by Schermelleh-Engel et al. (2003) are commonly used values. These good fit values were used to evaluate the fit indices derived in this study (Table 2).

First, the two-factor structure of the scale was analyzed using CFA by linking the items mentioned above to the relevant factors, and the model's goodness of fit values were examined. As a result of the CFA analysis applied within the study, Chi-square ($\chi2$) =11.170, degree of freedom (df)=8, $\chi2/df=1.39$, Comparative Fit Index (CFI)=0.98, Tucker Lewis Index (TLI)=0.96, Root Mean Square Error of Approximation (RMSEA) (%90 Confidence Interval-CI)=0.04 (0.000-0.110), Standardized Root Mean Square Residual (sRMR)=0.05, Goodness of Fit Index (GFI)=0.97, and Adjusted Goodness of Fit Index (AGFI)=0.94, indicating good levels of fit (Schermelleh-Engel et al. 2003). Comparative values are presented in Table 2. Item factor loadings ranged from 0.64 to 0.89 (Table 2).

Table 2. ERQ-SF original and Turkish study confirmatory factor analysis fit indices results			
	Goodness-fit-indices*	**Original study****	**Turkish study**
χ2	-	30.669***	11.170***
df	-	8	8
χ2/df	0 < χ2/df ≤ 2	3.83	1.39
CFI	0.97 ≤ CFI < 1.00	0.97	0.98
TLI	0.97≤ TLI ≤ 1.00	0.94	0.96
RMSEA	0 ≤ RMSEA ≤ 0.05	0.07	0.04
sRMR	0 ≤sRMR ≤ 0.05	0.06	0.05
GFI	0.95 ≤ GFI < 1.00	-	0.97
AGFI	0.90 ≤ AGFI ≤ 1.00	-	0.94

Note: *: Goodness-of-fit indices proposed by Schermelleh-Engel et al. (2003)
**: Data from a community sample was used. ***: p<.001; χ2=Chi-square; df=Degree of freedom; CFI: Comparative Fit Index; TLI: Tucker Lewis Index; sRMR: Standardized Root Mean Square Residual; RMSEA: Root Mean Square Error of Approximation; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index.

Criterion-Related Validity

To examine the validity of the ERQ-SF, the correlation coefficients of the scale with other scales were examined. All results are presented in Table 3. In the original study, ERQ, Perth Emotion Regulation Competence Inventory (PERCI), PAQ, and DASS were used in the criterion-related validity analysis. Similar scales were used in the Turkish adaptation study, except that DERS was used instead of PERCI, and the relationships between ERQ-SF and other scales were examined using Pearson's correlation coefficient analysis for criterion-related validity. The analysis revealed positive and moderately or weakly significant correlations between the ERQ-SF cognitive reappraisal subscale and the ERQ subscales, as well as between the PAQ-DDF and the ERQ-SF cognitive reappraisal subscale. No significant relationships were found between the cognitive reappraisal subscale and the other subscales. Positive, moderate or weak significant relationships were found between the ERQ-SF suppression subscale and the PAQ and DASS subscales, except for the DERS goals and impulse subscale (Table 3).

Table 3. Correlation coefficients of the ERQ-SF with other scales and subscales				
	M	**SD**	**CR**	**S**
ERQ-SF				
Cognitive reappraisal	13.90	3.68	-	-
Suppression	12.32	4.42	-	-
ERQ				
Cognitive reappraisal	21.43	5.82	0.37**	0.48**
Suppression	15.80	3.71	0.32*	0.30**
DERS				
Total score	45.22	14.13	-0.03	0.21**
Clarity	5.21	2.10	0.01	0.29**
Non-acceptance	7.73	3.45	-0.05	0.19*
Strategies	13.83	5.54	-0.05	0.19*
Impulse	7.50	3.13	0.03	0.06
Goals	10.93	2.92	-0.01	0.12
PAQ				
Total score	74.25	31.32	0.13	0.38**
Difficulty identifying negative feelings	12.12	5.92	0.06	0.28**
Difficulty identifying positive feelings	10.65	6.08	0.13	0.22**
Difficulty describing negative feelings	10.19	6.84	0.05	0.40**
Difficulty describing positive feelings	12.66	6.47	0.18*	0.27**
General externally orientated thinking	23.61	11.18	0.14	0.39**
DASS-21				
Depression	8.18	5.72	0.13	0.17*
Anxiety	9.12	5.68	0.11	0.18*
Stress	8.36	5.16	0.08	0.13*

*p<.05 **p<.01; M: Mean, SD: Standard deviation; CR: Cognitive reappraisal, S: Suppression.
ERQ-SF: Emotion Regulation Questionnaire-Short Form, ERQ-Emotion Regulation Questionnaire, DERS: Difficulty in Emotion Regulation Scale, PAQ: Perth Alexithymia Questionnaire, DASS: Depression Anxiety Stress Scale

Reliability Analysis

Internal Consistency Reliability

Cronbach's Alpha reliability values for scale reliability were found to be 0.73 for cognitive reappraisal and 0.71 for the suppression subscale of the ERQ-SF (Table 1).

Test-Retest Reliability

The consistency of the ERQ-SF over time was examined using test-retest reliability analysis. In this analysis, the interval between the two applications must be 2-6 weeks, depending on the measured characteristic. In the test-retest method, at least 30 data points should be included in the study, and the correlation coefficient should be between -1.00 and +1.00 (Tavşancıl 2005). Accordingly, for the test-retest reliability of the ERQ-SF, the scale was administered twice to a group of 41 university students with a 4-week interval. The Pearson correlation coefficients between the two applications were determined to be .42 for ERQ-SF-cognitive reappraisal and .37 for ERQ-SF-suppression. The correlation coefficients were found to be statistically significant ($p<.05$). The scale means, standard deviation values (SD), and confidence intervals (CI) calculated using test-retest analysis are presented in Table 4.

Table 4. Mean, standard deviation, confidence interval values, and correlation coefficients of ERQ-SF subscale scores in the test-retest application

	T1 (N=41)			**T2 (N=41)**			
	M	SD	CI	M	SD	CI	r
CR	14.00	3.30	12.96-15.04	13.78	3.65	12.63-14.93	.42**
S	12.09	3.99	10.84-13.36	12.34	3.62	11.19-13.48	.37*

*p<.05 **p<.001; T1: Baseline, T2: 4 weeks later; M: Mean, SD: Standard deviation, CI: Confidence interval, r: Correlation coefficients; CR: Cognitive reappraisal, S: Suppression

Discussion

In this study, the psychometric properties of the ERQ-SF (Emotion Regulation Questionnaire-Short Form), the most frequently used measure for assessing emotion regulation, were examined in a Turkish sample. The short-form scale, which was developed by Preece et al. (2023), is based on the 'process model of emotion regulation'. The ERQ-SF is a six-item self-report scale that assesses the use of two subdimensions: cognitive reappraisal, which emerges in the early phase of the emotion regulation process, and suppression, which emerges in the late phase of the emotion regulation process.

Emotion regulation plays a significant role in individuals' processes of psychological adjustment and is closely linked to both various psychopathologies and psychological well-being (Gross 2002). For instance, low cognitive reappraisal and high suppression are generally indicative of difficulties in emotion regulation (Preece et al. 2020). Many studies have examined emotion regulation in relation to various topics such as alexithymia (Yıldız and Güllü 2019), social anxiety disorder (Aldao et al. 2014), depression (Ehring et al. 2010), post-traumatic stress (Bonn-Miller et al. 2011), and psychological well-being (Gross and John 2003). Therefore, it can be said that the field of emotion regulation is at the center of many research topics. In this context, the distinguishing feature of the ERQ-SF, for which validity and reliability studies are conducted in this study, is that the scale is shorter and more advantageous in terms of administration.

In the Turkish adaptation study of the ERQ-SF, the obtained Cronbach's Alpha reliability coefficients for both subscales were found to be above .70; with the coefficient for the reappraisal subscale being .73 and for the suppression subscale being .71. In the original study conducted with two separate samples, the Cronbach's Alpha values for the general population were determined as 0.87 for the cognitive reappraisal subscale and 0.76 for the suppression subscale; and for college students, the cognitive reappraisal subscale Cronbach's Alpha was 0.77 and the suppression subscale was 0.84. However, in the original study, data for the ERQ-SF were not collected through a separate research on the general population. Instead, the ERQ-SF items were identified and analyzed from the administration of the long form of the ERQ. Moreover, the item-total scale correlations for all items were found to be above .30. Similarly, in the Polish adaptation study of the scale, the Cronbach's Alpha coefficients for both subscales were also found to be above .70 (Larionow et al. 2024).

The test-retest reliability correlation coefficients were determined to be .42 for the cognitive reappraisal subscale and .37 for the suppression subscale. It was noted that neither the original study nor the Polish adaptation of the scale included a test-retest administration. This situation makes the evaluation difficult, as the test-retest data obtained within the context of our study are the first data of their kind. However, while the test-retest

reliability coefficients were significant, they were observed to be low. It is thought that these low values may be due to the 4-week interval between the two administrations, which is considered a relatively long time span.

As a result of the CFA (Confirmatory Factor Analysis) conducted to confirm the measurement model, it was determined that the ERQ-SF possessed good fit indices based on the criteria of Schermelleh-Engel et al. (2003), and the factor structure of the scale was confirmed in the Turkish culture. The Polish adaptation study shows that the data obtained in both adaptation studies are similar in nature (Larionow et al. 2024). The results of the EFA (Exploratory Factor Analysis), performed within the scope of the scale's construct validity, provided important findings, indicating the suitability of the scale for factor analysis and demonstrating that the factor loadings of the items were at an excellent level. Furthermore, the EFA results showed that the scale could be grouped into two subdimensions, similar to the original study, and all items had a factor loading above .60.

As a result of the criterion-related validity analyses, no significant relationships were found between the ERQ-SF cognitive reappraisal subscale and other scales, except the ERQ subscales (cognitive reappraisal, suppression) and the PAQ-P-DDF subscale. It was observed that positive and significant relationships between the ERQ-SF suppression subscale and other scales, except the DERS subscales of goals and impulse. The findings for the ERQ-SF cognitive reappraisal subscale differ from those in the original scale study. In the original study, cognitive reappraisal findings were associated with lower emotion regulation difficulties, lower alexithymia, and lower mood disorder symptoms (Preece et al. 2023). Conversely, the suppression subscale was significantly associated with higher emotion regulation difficulties, higher alexithymia, and higher mood disorder symptoms (Preece et al. 2023). Differences also exist in the Polish adaptation; for instance, the Patient Health Questionnaire and the Well-Being Scale were used to assess criterion-related validity, which differs from the original study (Larionow et al. 2024).

Studies have shown that cognitive reappraisal, which occurs in the early phase of the emotion regulation process, is generally a more effective emotion regulation strategy and is negatively associated with psychopathology (Sheppes et al. 2015, Brandao et al. 2017; Preece et al. 2023). Yet, surprisingly, some findings suggest that cognitive reappraisal is used less than expected (Suri et al. 2015, Milyavsky et al. 2019). It has been hypothesized that this phenomenon may be related to two different costs underlying the cognitive reappraisal strategy: 'overcoming bias' and 'cognitive effort' (Suri et al. 2015). It has been determined that people's daily decision-making processes involve making decisions based on default options rather than reappraisal, and that people use cognitive reappraisal less frequently than expected to exert less effort. Accordingly, it can be hypothesized that the stages underlying the cognitive reappraisal strategy—situation selection, situation modification, attentional deployment, and cognitive change—may involve greater costs.

Similarly, another study, the less frequent use of the cognitive reappraisal strategy was explained within the framework of 'Cognitive Energy Theory' (CET) (Milyavsky et al. 2019). CET proposes that the probability of initiating any cognitive process is the result of two opposing forces: the driving force (motivation to initiate the process) and the constraining force (task difficulty). From this perspective, it is suggested that people prefer to use the cognitive reappraisal strategy relatively less due to the difficulty of its application (Milyavsky et al. 2019). Therefore, the fact that the cognitive reappraisal strategy is a more effective emotion regulation strategy but requires more effort seems to support these theories. Furthermore, these results suggest that environmental influences may be more important in the use of the cognitive reappraisal strategy and that cultural differences may exist in the use of emotion regulation strategies. Considering this aspect, it is possible to suggest that Turkish society does not actively engage in using cognitive strategies, regulates emotions through suppression, and that the expression of emotions is not widely accepted by individuals.

The results obtained within the scope of the study demonstrate that the Turkish adapted version of the ERQ-SF is a valid and reliable self-report instrument that can be used to assess emotion regulation strategies. However, when examined in the context of societal differences, the cognitive reappraisal subscale of the ERQ-SF was found to differ from the original study. A review of the relevant literature indicates the existence of studies suggesting that the cognitive reappraisal strategy is used less frequently than expected, and this strategy has been associated with different motivations (Suri et al. 2015, Milyavsky et al. 2019). Similar to the findings in the literature, the present study shows that the cognitive reappraisal strategy is used less than the suppression strategy, and that there are differences related to the cognitive reappraisal factor in Turkish society. It is therefore believed that more research on the cognitive reappraisal strategy is needed.

The study's limitations include the fact that the vast majority of participants were university students, female gender was overrepresented, data was collected using self-report scales, and a clinical population for comparison was absent. Since only self-report data were obtained without conducting clinical interviews with the participants, those who reported having a psychiatric diagnosis were excluded from the study. Consequently, as

the present study was not conducted on a clinical sample, making a clinical generalization is not appropriate. This constitutes a significant limitation of the study.

Conclusion

The validity and reliability analyses conducted demonstrate that, despite having aspects that differ from the original scale study, the ERQ-SF possesses strong psychometric properties and is a valid and reliable measurement tool that can be used in research within the Turkish population. The ERQ-SF is anticipated to help optimize the assessment of emotion regulation, especially in time-pressured settings. The observed difference in the cognitive reappraisal subscale in this study, which examined the Turkish psychometric properties of the ERQ-SF, is also expected to contribute to the literature. Furthermore, it is highlighted that more research is needed in the field of emotion regulation, particularly concerning the cognitive reappraisal strategy.

Accordingly, it is believed that the administration of the ERQ-SF in samples with a balanced distribution of male and female genders, the inclusion of diverse populations, and the application in groups with clinical diagnoses will contribute to the literature. Moreover, assessments that take participants' different characteristics into account through clinical interviews are expected to increase the scale's applicability and generalizability across various samples.

References

Aldao A, Jazaieri H, Goldin PR, Gross, JJ (2014). Adaptive and maladaptive emotion regulation strategies: interactive effects during CBT for social anxiety disorder. J Anxiety Disord, 28:382-389.

APA (2024) Emotion. https://www.apa.org/topics/emotions. (Accessed 01.04.2025).

Bilge Y, Bilge Y (2020) Aleksitiminin dikkat-değerlendirme modelinin ölçümü: Perth Aleksitimi Ölçeğinin Türkçe psikometrik özellikleri. Anadolu Psikiyatri Derg, 21(Suppl 2):71-79.

Bjureberg J, Ljótsson B, Tull M T, Hedman E, Sahlin H, Lundh LG et al. (2016) Development and validation of a brief version of the difficulties in emotion regulation scale: The DERS-16. J Behav Assess, 38:284-296.

Bonn-Miller MO, Vujanovic AA, Boden MT, Gross JJ (2011) Posttraumatic stress, difficulties in emotion regulation, and coping-oriented marijuana use. Cogn Behav Ther, 40:34-44.

Brandao T, Schulz MS, Gross JJ, Matos, PM (2017) The emotion regulation questionnaire in women with cancer: A psychometric evaluation and an item response theory analysis. Psychooncology, 26:1647-1653.

Büyüköztürk Ş (2015) Sosyal Bilimler için Veri Analizi El Kitabı, 21. Baskı, Ankara, Pegem Yayıncılık.

Çokluk Ö, Şekercioğlu G, Büyüköztürk Ş (2014) Sosyal bilimler İçin Çok Değişkenli İstatistik: SPSS ve LISREL Uygulamaları. Ankara, Pegem Yayıncılık.

Ehring T, Tuschen-Caffier B, Schnulle J, Fischer S, Gross, JJ (2010) Emotion regulation and vulnerability to depression: spontaneous versus instructed use of emotion suppression and reappraisal. Emotion, 10:563-572.

Garnefski N, Kraaij V, Spinhoven P (2001) Negative life events, cognitive emotion regulation and emotional problems. Pers Individ Dif, 30:1311-1327.

George D, Mallery M (2010) SPSS for Windows Step by Step: A Simple Guide Reference, 10th ed. Boston, Pearson.

Gratz KL, Roemer L (2004) Multidimensional assessment of emotional regulation and dysregulation: development, factor structure, and initial validation of the difficulties in emotional regulation scale. J Psychopathol Behav Assess, 26:41-54.

Gross JJ (1998) Antecedent- and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. J Pers Soc Psychol, 74:224-237.

Gross JJ (2002) Emotion regulation: affective, cognitive, and social consequences. Psychophysiology, 39:281-291.

Gross JJ (2015) Emotion regulation: Current status and future prospects. Psychol Inq, 26:1-26.

Gross JJ, John OP (2003) Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J Pers Soc Psychol, 85:348-362.

Groth-Marnat G (2009) Handbook of Psychological Assessment, 5th ed. Hoboken, NJ, Wiley.

Gurera JW, Isaacowitz DM (2019) Emotion regulation and emotion perception in aging: A perspective on age-related differences and similarities. Prog Brain Res, 247:329-351.

Kline P (1994) An Easy Guide to Factor Analysis. London, Routledge.

Koğar H (2020) Development of a short form: methods, examinations, and recommendations. Eğitimde ve Psikolojide Ölçme ve Değerlendirme Dergisi, 11:301-310.

Koole SL (2009) The psychology of emotion regulation: An integrative review. Cogn Emot, 23:4-41.

Larionow P, Mudło-Głagolska K, Preece DA (2024) The Polish version of the Emotion Regulation Questionnaire-Short Form (ERQ-S): Psychometric properties, Polish norms and relationships with psychopathology and well-being. Glob Ment Health (Camb), 11:e104.

McCallum RC, Widaman KF, Preacher KJ, Hong S (2001) Sample size in factor analysis: The role of model error. Multivariate Behav Res, 36:611-637.

Meydan CH, Şeşen H (2015) Yapısal Eşitlik Modellemesi: AMOS Uygulamaları. 2.Baskı. Ankara, Detay Yayıncılık.

Milyavsky M, Webber D, Fernandez JR, Kruglanski AW, Goldenberg A, Suri G et al. (2019) To reappraise or not to reappraise? Emotion regulation choice and cognitive energetics. Emotion, 19:964-981.

Parkinson B, Totterdell P (1999) Classifying affect-regulation strategies. Cogn Emot, 13:277-303.

Preece DA, Becerra R, Robinson, K, Dandy J, Allan A (2018) The psychometric assessment of alexithymia: Development and validation of the Perth Alexithymia Questionnaire. Pers Individ Dif, 132:32-44.

Preece DA, Becerra R, Hasking P, McEvoy PM, Boyes M, Sauer-Zavala S et al. (2021) The emotion regulation questionnaire: Psychometric properties and relations with affective symptoms in a United States general community sample. J Affect Disord, 284:27-30.

Preece DA, Becerra R, Robinson K, Gross JJ (2020) The emotion regulation questionnaire: Psychometric properties in general community samples. J Pers Assess, 102:348-356.

Preece DA, Mehta A, Petrova K, Sikka P, Bjureberg J, Becerra R et al. (2023) Alexithymia and emotion regulation. J Affect Disord, 324:232-238.

Preece DA, Petrova K, Mehta A, Gross J J (2023) The emotion regulation questionnaire-short form (ERQ-S): A 6-item measure of cognitive reappraisal and expressive suppression. J Affect Disord, 340:855-861.

Sarıçam H (2018) The psychometric properties of Turkish version of depression anxiety stress scale-21 (DASS-21) in health control and clinical samples. J Cogn Behav Psychother Res, 7:19-30.

Schermelleh-Engel K, Moosbrugger H, Muller H (2003) Evaluating the fit of structural equation models: Tests of significance and goodness-of-fit models. Methods of Psychological Research, 8, 23-74.

Sheppes G, Suri G, Gross JJ (2015) Emotion regulation and psychopathology. Annu Rev Clin Psychol, 11:379-405.

Smith GT, Combs JL, Pearson CM (2012) Brief instruments and short forms. In APA Handbook of Research Methods in Psychology, Vol. 1. Foundations, Planning, Measures, and Psychometrics (Eds H Cooper, PM Camic, DL Long, AT Panter, D Rindskopf, KJ Sher):395–409. Washington DC, American Psychological Association.

Smith GT, McCarthy DM, Anderson KG (2000) On the sins of short-form development. Psychol Assess 12:102-111.

Stanford Psychophysiology Laboratory (2024) The Emotion Regulation Questionnaire-Short Form. https://spl.stanford.edu/resources (Accessed 01.05.2025).

Suri G, Whittaker K, Gross JJ (2015) Launching reappraisal: it's less common than you might think. Emotion, 15:73-77.

Tavşancıl E (2005) Tutumların Ölçülmesi ve SPSS ile Veri Analizi. Ankara, Nobel Akademik Yayıncılık.

Thompson RA (1991) Emotional regulation and emotional development. Educ Psychol Rev, 3:269-307.

Thompson RA (1994) Emotional regulation: A theme in search for definition. Monogr Soc Res Child Dev, 59:25-52.

Totan T (2015) Duygu Düzenlenme Anketi Türkçe formunun geçerlik ve güvenirliği. J Cogn Behav Psychother Res, 3:153-161.

Tuna E, Bozo Ö (2012). The Cognitive Emotion Regulation Questionnaire: factor structure and psychometric properties of the Turkish version. J Psychopathol Behav Assess, 34:564-570.

Yıldız B, Güllü A (2019) Duygu düzenleme süreçleri ve aleksitimi arasındaki ilişkide belirsizliğe tahammülsüzlüğün aracı rolü. J Soc Sci, 18:201-217.

Yiğit İ, Guzey Yiğit M (2019) Psychometric properties of Turkish version of Difficulties in Emotion Regulation Scale-Brief Form (DERS-16). Curr Psychol, 38:1503-1511.

Authors Contributions: The author(s) have declared that they have made a significant scientific contribution to the study and have assisted in the preparation or revision of the manuscript

Peer-review: Externally peer-reviewed.

Conflict of Interest: No conflict of interest was declared.

Financial Disclosure: No financial support was declared for this study.

Addendum 1. Emotion Regulation Questionnaire–Short Form (ERQ-SF) Turkish Version

Dear Participant,

Below are questions about how you control (regulate and manage) your emotions. Please answer these questions by considering your emotional experiences and expressions. Please indicate how much you agree or disagree with each statement by selecting one of the options below.

Items	I completely disagree	---	---	Neutral	---	---	I completely agree
1. Daha pozitif duygular hissetmek istediğimde (mutluluk veya neşe gibi), o durum hakkındaki düşünce tarzımı değiştiririm.	1	2	3	4	5	6	7
2. Duygularımı kimseye söylemem, içimde saklarım.	1	2	3	4	5	6	7
3. Daha az negatif duygu hissetmek istediğimde (üzüntü veya öfke gibi), o durum hakkındaki düşünce tarzımı değiştiririm.	1	2	3	4	5	6	7
4. Duygularımı belli etmemek, onları kontrol altında tutma yöntemimdir.	1	2	3	4	5	6	7
5. Duygularımı, içinde bulunduğum durum hakkındaki düşünce tarzımı değiştirerek kontrol ederim.	1	2	3	4	5	6	7
6. Negatif duygular hissettiğimde, onları belli etmemeye dikkat ederim.	1	2	3	4	5	6	7

Scoring

Two scale scores can be derived from the ERQ-SF:

Cognitive reappraisal subscale: The sum of 1st, 3th and 5th items.

Suppression subscale: The sum of 2nd, 4th and 6th items.