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Açık Erişim

The Study of Adaptation of the Positive and Negative Rumination Scale into Turkish*Olumlu ve Olumsuz Ruminasyon Ölçeği'ni Türkçeye Uyarlama Çalışması*

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ABSTRACT

The aim of this study was to examine Positive and Negative Rumination Scale (PNRS) developed by Yang et. al. (2018) to study on the adaptation into Turkish on a group of university students. As a result of the first order confirmatory factor analysis applied, it was concluded that the structure with five factors showed sufficient compatibility. In addition, in order to examine the factor structure of PNRS enjoy happiness (EH) and positive coping (PC) to be loaded into positive rumination (PR); suppress happiness (SH), negative attribution (NA), and self- deny (SD) to be loaded into negative rumination (NR) showed that the form was compatible with the factor structure of the Turkish form which was indicated for the 2- factor second order confirmatory factor which it is specified to, it was found that the second order structure with 2 factors gave sufficient fit and that the original factor structure was compatible with the factor structure of the Turkish form. The reliability analysis results of the scale have also given satisfactory results. Validity reliability analysis results for the scale show that the scale can be used as a valid and reliable measurement tool.

Article Information**Keywords**

Rumination
Positive Rumination
Negative Rumination
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Anahtar Kelimeler

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ÖZET

Bu çalışmanın amacı, bir grup üniversite öğrencisi üzerinde, Yang, Wang, Song, Lu, Huang, Zou & Pan (2018) tarafından geliştirilen Olumlu ve Olumsuz Ruminasyon Ölçeği'nin (OORÖ) Türkçeye uyarlama çalışmasının yapılmasıdır. Uygulanan birinci düzey doğrulayıcı faktör analizi neticesinde beş faktörlü yapının yeterli uyumu gösterdiği sonucuna ulaşılmıştır. Ayrıca OORÖ'nin faktör yapısını incelemek amacıyla mutluluğun tadını çıkarma ve olumlu başa çıkmanın olumlu ruminasyona; mutluluğu bastırma, olumsuz yükleme ve kendini reddetmenin olumsuz ruminasyona yüklenecek şekilde belirtildiği 2 faktörlü ikinci düzey model için uygulanan ikinci düzey doğrulayıcı faktör analizi sonucunda 2 faktörlü ikinci düzey yapının yeterli uyumu verdiğini ve orijinal faktör yapısının Türkçe formun faktör yapısıyla uyduğuna göstermiştir. Ölçeğin güvenirlik analizi sonuçları da tatmin edici sonuçlar vermiştir. Ölçek için yapılan geçerlik güvenirlik analiz sonuçları, ölçeğin geçerli ve güvenilir bir ölçme aracı olarak kullanılabileceğini göstermektedir.

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Ethical Statement: The research was reviewed by the Social and Human Sciences Research and Publication Ethics Committee Necmettin Erbakan University and was given permission (Date: 3.4.2020, Ref: 2020/22).

INTRODUCTION

Although there is a strong literature supporting rumination which is an important concept in understanding the development of depressive mood and its continuity there is no unified definition or standard measurement of the rumination (Smith & Alloy, 2009). When the literature is examined, it is seen that rumination is defined by many researchers (Nolen-Hoeksema et al., 2008; Brinker et al., 2013; Cann et al., 2011; Feldman et al., 2008) and there are theories that deal with rumination from different perspectives (Martin & Tesser, 1996; Nolen-Hoeksema et al., 2008; Conway et al., 2000).

In addition, it is seen that many scales have been developed to measure rumination in the literature (Brinker & Dozois, 2009; Flett et al., 2020; Wade et al., 2008; Eisma et al., 2014; Rose, 2002) and to Turkish adapted (Karatepe, 2010; Kabadayi & Mercan, 2021; Oral & Arslan, 2017; Tekin & Kiroglu, 2019; Bugay & Erdur-Baker, 2015).

Meanwhile Nolen-Hoeksema (1991), explains rumination as repetitive thinking on individuals' depressive symptoms and reflection on possible causes and consequences of depressive symptoms, Conway et al. (2000) define rumination emphasizing individuals' current situation and repetitive thoughts about their sadness and the circumstances surrounding that sadness. Martin and Tesser (1996) mentions the beneficial side of rumination by developing goal progression theory which includes that individuals have a function in their progress towards the goal not a response to a mood state itself.

Where Feldman et al. (2008) have defined rumination as positive self-qualities, positive emotional experience, and positive life a tendency to respond to positive emotional states with repetitive thoughts about their circumstances. Thus, Feldman et al. (2008), drew attention to the responses given on positive affect. Yang et al. (2018), drawing attention that studies on rumination are either on negative affect (Nolen-Hoeksema, 1991) or positive emotional states (Feldman et al., 2008) they combined the positive and negative aspects of rumination by both positive and negative aspects of rumination, stating both positive and negative affect. They defined rumination as repeated thoughts on both positive and negative effects and stated that these thoughts were functioning positively or negatively in terms of psychological adjustment.

In the literature of our country, while there has been the separate scales that include response on positive emotional states and negative events, such as Ruminative Responses Scale has been adapted to Turkish by Neziroğlu (2010) which aims to measure rumination tendencies towards negative events; Response to Positive Emotions Scale adapted to Turkish by Yüksel (2014), rumination is into response to positive emotional states; there was no measurement tool found that measures rumination by combining both positive and negative affect on positive and negative affect.

Rumination like this the adaptation of the measurement tool that deals with a multidimensional structure of rumination like this is thought to provide the important contribution to the literature. Therefore, in this study, Positive and Negative Rumination Adaptation of the Turkish version of the scale (PNRS) to Turkish and conducting validity and reliability studies were intended.

METHOD

Research Group

The research group consists of a total of 308 volunteer university students, 245 of whom were female (79.5%) and 63 of whom (20.5%) were male studying at various universities in Türkiye organized through

"Google Forms". As the age of 11 of the participants participating in the study were 30 and above, they were not included in the study. The age of the participants of the research has ranged from 17 to 29.

Of the participants, 17 were at 1st Grade (5.5%), 88 were at 2nd Grade (28.6%), 76 were at 3rd grade (24.7%), 120 were at 4th grade (39%), 6 were at 5th grade (1.9%), 1 was at preparatory class (0.3%). In addition, for the language validity study, some data was collected from 44 volunteer English pre-service teachers educated in the 4th grade education in Necmettin Erbakan University Education Faculty English Language Teaching Program in the 2020-2021 academic year.

Ethical Statement

The research was reviewed by the Social and Human Sciences Research and Publication Ethics Committee Necmettin Erbakan University and was given permission (Date: 3.4.2020, Ref: 2020/22). In addition, the participants participated in the study on a voluntary basis.

Data Collection Tools

Life Orientation Test (LOT). The scale which was developed by Scheier and Carver (1987) and adapted into Turkish by Aydın and Tezer (1991) has been adapted to measure optimism. High scores taken from the scale point out that optimism is high. The internal consistency coefficient of the scale is .72, and the results of the test-retest reliability coefficient obtained from the application within four weeks intervals was found as .77.

Depression Anxiety Stress Scale (DASS). The Turkish adaptation of the developed scale by Lovibond and Lovibond (1995) was carried out by Akin and Çetin (2007). The Cronbach Alpha internal consistency coefficient of the scale was .89, item-total correlations were found between .51 and .75. The test-retest and two-half reliability scores of the scale were found .99 and .96.

Original Positive and Negative Rumination Scale

PNRS, developed by Yang et al. (2018), was developed to measure positive and negative rumination about positive and negative effects. First of all, an item pool (an open-ended questionnaire, brainstorming, by scanning the scales) was formed to measure positive and negative rumination about measuring positive and negative affect in order to form a multidimensional scale and at the last stage was reached the version was improved composed of 23 items and five factors; enjoy happiness (6 items), suppress happiness (5 items), negative attribution (5 items), positive coping (4 items), self-deny (3 items) was reached (Yang et al., 2018).

In addition, for the purpose of examining the factor structure of PNRS, a DFA was performed for a 2 factored second order model and the specified model of 2 order confirmatory model, enjoy happiness and positive coping loaded to positive rumination; suppress happiness, negative attribution and self-deny loaded to negative rumination and it is observed that the second 2-factor, and the specified model fits the data well (CFI=.98, NNFI=.94, RMSEA=.038 (0.31-.04), SRMR=.44). In addition, it is seen that the cronbach alpha coefficient calculated for scale varies between .71 and .85 in the enjoy happiness, suppress happiness, negative attribution, positive coping, self-deny, positive rumination, and in the dimension's negative rumination. On the other hand, while the test-retest results varied between .49 and .84 in the reliability study in the dimensions of enjoy happiness, suppress happiness, negative attribution, positive coping, self-deny, positive rumination, and in the dimensions negative rumination (Yang et al., 2018).

In the scale, the participants are asked to rate when they experience positive emotions such as happiness, excitement or enthusiasm for the first part of the scale how often they thought like in the items between 1 (never) and 4 (always). In the second part, the participants are asked to rate when experiencing negative emotions such as sadness, anger or embarrassment how often they thought like in the items between 1 (never) and 4 (always) (Yang et al., 2018).

Process

First of all permission was obtained via email from Hongfei Yang, the lead author of the group of researchers who developed the scale in order to adapt the scale into Turkish. In order to form the Turkish version, opinions of the experts from English Linguists, the experts in the area of Guidance and Psychological Counseling were consulted.

The resulting form was applied to 335 volunteer university students and as a result of the evaluation of the obtained data, the item-total correlation values of PNRS were determined to vary between 0,19 and 0, 62 and for the 5 sub-dimensions of the scale Cronbach Alpha values were determined between .53 and .75.

In general, the items with a total correlation of .30 and higher are known to differentiate individuals well (Büyüköztürk, 2016). As a result of the item analysis of the PNRS, the item whose total correlation value is below .30 finding 1 item (part 2, item 9) below 30 and determining the scale, in general, Cronbach Alpha reliability values in its sub-dimensions were not satisfactory due to the lack of availability, expert opinion was consulted again for all scale items. The scale was made more understandable through expert recommendations. After the corrections made by a Language Specialist and a Turkish Teacher, the scale of feedback was received regarding the intelligibility of the items, and the three university students in the age group where the reliability-validity study would be conducted, due to the lack of availability, opinion was taken again for all scale items. After the editing, the scale was rearranged and the language validity study was carried out. Then it was applied to a different research group for the second time. Within the scope of application, criterion-related validity studies were also carried out.

To examine the construct validity of the Positive and Negative Rumination Scale, confirmatory factor analysis Scale; reliability analyzes test-retest method, and Cronbach Alpha internal consistency coefficient methods has been used. Validity and reliability analysis were made by using IBM SPSS 26 and LISREL 8.80 package programs.

RESULTS

Findings Regarding Language Validity

Language validity study of PNRS, was carried out on the data obtained from 44 voluntary students studying in English Language Teaching programs. It was calculated by 17 days intervals to participants with the application of the Turkish form of the scale and then the application of the English form of the scale. According to the findings obtained from the group for language equivalence, a high level of positive correlation was found between the English version and the English form ($r = .82$ $p < .01$). With reference to this, the original form and the Turkish form of the scale, which is tried to be adapted, are linguistically equivalent and it can be said that the translated scale has linguistic validity.

Findings Regarding Construct Validity

In order to test the construct validity of the scale, the data obtained from 308 students Kaiser-Meyer-Olkin (KMO) coefficients and Bartlett Sphericity Test results were calculated. KMO sample fit coefficient was found .875, as a result of the analysis Bartlett Sphericity test was found significant ($\chi^2=2716,737, p=0.000$). Kaiser-Meyer- The Olkin (KMO) coefficient is expected to be higher than .60 for factorability. In addition, the Bartlett test analyzes whether there is a relationship between the variables based on partial correlations and if the calculated chi-square statistic is significant, it indicates that the data matrix is appropriate (Büyüköztürk, 2016).

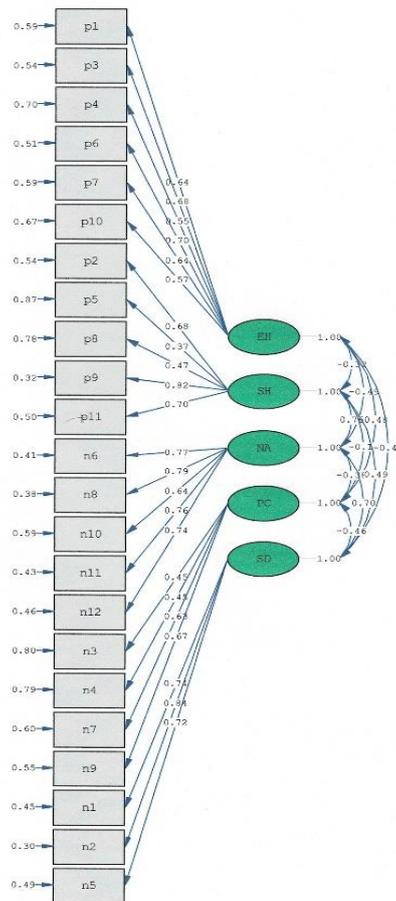


Figure 1. Path Diagram and Factor Loads of the First Order Confirmatory Factor Analysis Applied to the Positive and Negative Rumination Scale (PNRS)

Considering these results, it demonstrates that for factor analysis of the data, the sample size studied is sufficient and the data are suitable for factor analysis. In the items and sub-dimensions of this scale, it is seen that the highest skewness value is .97 and the lowest the value is -.96; the highest kurtosis value was 1.14 and the lowest -1.38. George and Mallery (2016) stated that ± 1 value for skewness and kurtosis values are excellent, whereas most values between ± 2 , depending on the application state that they are acceptable values.

Therefore, it was concluded that the data set did not have a skewed and flat distribution and showed a normal distribution. The five-factor structure of the Positive and Negative Rumination Scale determined in the original scale first order confirmatory factor analysis was performed to examine whether it is valid in Turkish culture. DFA was made using the LISREL 8.80 package program.

As a result of the DFA applied to the scale, the fit values were $\chi^2/df=2.313$, NFI=.92, NNFI=.95, IFI=.95, RFI=.91, CFI=.95, GFI=.87, RMR=.05, RMSEA=.07, SRMR=.07 Therefore, it can be said that the five-factor structure fits the sample data adequately (See Figure 1).

In addition, in order to examine the factor structure of PNRS, enjoy happiness and positive coping loaded to positive rumination, suppress happiness, self-deny and negative attribution is loaded to negative rumination and which was performed for the compliance as a result of DFA for a confirmatory model (2- factor second order model); it is observed that the second order with 2 factors and the fit values are $\chi^2/df=2,375$, NFI=.92, NNFI=.94, IFI=.95, RFI=.91, CFI=.95, GFI=.87, AGFI=.84, RMR=.06, RMSEA=.07, SRMR=.07 and a second order of 2 factor (2-factor second order model) indicated model to fit the data well (See Figure 2).

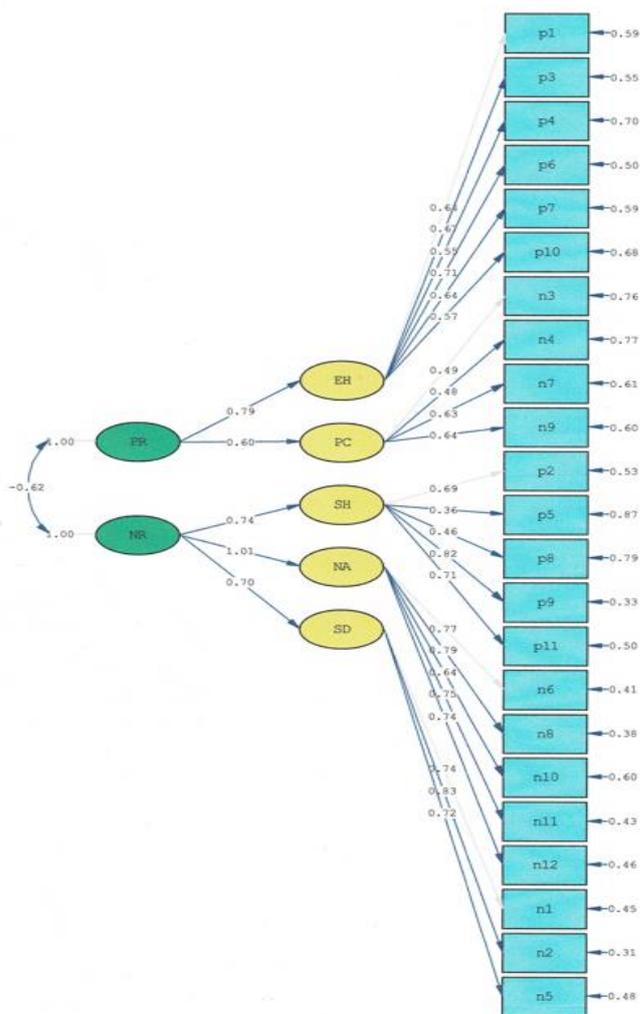


Figure 2. Path Diagram and Factor Loads of the Second Order Confirmatory Factor Analysis Applied to the Positive and Negative Rumination Scale (PNRS)

Findings Related to Criterion Validity Study

Criterion-related validity of the scale was made through the scores of 308 participants from the scales. Correlations between PNRS and The Life Orientation Test which was adapted into Turkish by Aydın and Tezer (1991) and Depression-Anxiety-Stress Scale which was adapted to Turkish by Akin and Çetin (2007) was examined using the depression subscale of the Depression-Anxiety-Stress Scale.

On the conclusion of the correlation analysis for criterion-related validity of PNRS; there was a significant and positive correlation between the scores they got from enjoy happiness ($r = .55, p < .01$) and positive coping ($r = .36, p < .01$), which are the sub-dimensions of students' PNRS and the scores they got from the Life Orientation Test (optimism). The sub-dimensions of PNRS were happiness suppression ($r = -.51, p < .01$), negative attribution ($r = -.67, p < .01$), self-deny ($r = -.51, p < .01$) with scores on Life Orientation Test (optimism), a negative significant correlation was observed between the scores they got from the scale (See Table1).

In addition, enjoy happiness ($r = -.51, p < .01$) and positive coping ($r = -.21, p < .01$) scores which are the subdimensions of PNRS and depression subscale, while a negative significant relationship was observed between the scores of PNRS, happiness suppression ($r = .44, p < .01$), negative attribution ($r = .59, p < .01$), self-deny ($r = .58, p < .01$) which are the subdimensions of PNRS where there was a positive significant relationship between their scores and between the scores they got from the depression subscale (See Table1).

In addition, significant correlations were observed between the scores obtained from the depression scale and the positive rumination subscale ($r = -.47, p < .01$) significant negative, with negative rumination subscale significant positive ($r = .64, p < .01$). Significant relationships were observed between the scores obtained from Life Orientation Test (optimism) and positive rumination subscale ($r = .58, p < .01$) with the scores obtained from the significant positive and negative rumination subscale significant positive. ($r = -.68, p < .01$) (See Table 1).

Table 1. Correlations among positive and negative rumination scale subscales, optimism, depression

	EH	SH	NA	PC	SD	PR	NR
1.Optimism(LOT)	.55**	-.51**	-.67**	.36**	-.51**	.58**	-.68**
2. Depression	-.51**	.44**	.59**	-.21**	.58**	-.47**	.64**

$p < .01$ **

Findings Related to Reliability Studies

Test-retest method and Cronbach Alpha internal coefficient of consistency methods were used to examine the reliability of PNRS. Test-retest reliability of PNRS was carried out on the data obtained from 90 university students (64 girls (71.1%), 26 boys (28.9%) volunteers). PNRS was applied to the university students twice with an interval of 15 days.

The reliability coefficients obtained from the scales with the test-retest method were .62 for the sub-dimension of enjoy happiness, .67 for the suppress happiness subscale .67 for the negative attribution subscale, .61 for the positive coping subscale, .61 for the self-deny sub-dimension, .65 for positive rumination, it was calculated as .74 for negative rumination (See Table 2).

Cronbach Alpha internal consistency coefficient methods have been used for examining the reliability of PNRS. Cronbach alpha internal consistency coefficient scores of PNRS, were made by the 308 participant's scores from the scales.

As a result of the analysis it was calculated as .79 for the enjoy happiness, .75 for the suppress happiness, .86 for the negative attribution, .65 for the positive coping, .80 for self-deny, .78 for positive rumination, .88 for negative rumination (See Table 2).

Table 2. Test-retest and cronbach alpha reliabilities for the positive and negative rumination scale subscales

	EH	SH	NA	PC	SD	PR	NR
1. Cronbach's α	.79	.75	.86	.65	.80	.78	.88
5. Test-Retest	.62**	.67**	.67**	.61**	.61**	.65**	.74**

$p < .01^{**}$

DISCUSSION

In this study, it was aimed to examine the validity and reliability of the Turkish version of the Positive and Negative Rumination Scale. For language validity, in the analysis made with the data obtained from the 44 candidate volunteer English teachers, a high level of positive correlation was found between the Turkish form and the English form of the scale ($r = .82, p < .01$). Correlation coefficient being seen between 0.70-1.00 is a high level of relationship (Büyüköztürk, 2016). From this point of view, it can be said that the English form and the Turkish form of the adapted scale are equivalent in terms of language and the language validity of the translated scale is ensured.

First and second order confirmatory factor analysis were performed for the construct validity of the scale. In order for the model to be considered as being successfully fit with the , $\chi^2 / df \leq 3, 05 < RMSEA \leq .08, 05 < SRMR \leq .10, CFI \geq .95, NFI \geq .90$ (Schermelel-Engel et al., 2003); $NNFI \geq .90, CFI \geq .90$ (Sümer, 2000); $GFI \geq .85, IFI \geq .90, RFI \geq .90, RMR \leq .08$ (Marcholudis & Schumacher, 2007; cited in Seçer, 2015) the conditions of being As a result of First Order CFA applied to the scale, it was determined that the fit values were $\chi^2/df=2.313, NFI=.92, NNFI=.95, IFI=.95, RFI=.91, CFI=.95, GFI=.87, RMR=.05, RMSEA=.07, SRMR=.07$, therefore, it can be said it is seen that the five-factor structure fits the sample data adequately.

In addition, in order to examine the factor structure of PNRS, enjoy happiness and positive coping to is loaded to positive rumination; suppress happiness, negative attribution and in which self-deny is loaded to negative rumination 2- factor Second Order DFA for a second-order confirmatory model. As a result, the fit values were $\chi^2/df=2,375, NFI=.92, NNFI=.94, IFI=.95, RFI=.91, CFI=.95, GFI=.87, RMR=.06, RMSEA=.07, SRMR=.07$ second order (2-factor) with 2 factors indicated as it was observed that the model (second order model) fitted the data well.

The results of the first order confirmatory factor analysis applied, as in the original form, factored structure and fit sufficient of the five-factor structure, and that the Turkish form of the original factor structure proved to be consistent with its structure. In addition, as a result of the 2-factor second-order confirmatory factor analysis, in order to examine the factor structure of PNRS, enjoy happiness and positive coping loaded to positive rumination; suppress happiness in which negative attribution and self-deny are loaded to negative rumination the 2-factor order 2 structure and that showed that the original factor structure was compatible with the factor structure of the Turkish form In criterion-related validity studies, the scores obtained from the sub-dimensions of PNRS and the relationship between the scores obtained from the depression and optimism scale was examined. While a significant relationship was observed in the direction, a positive significant relationship was observed between the scores they received, enjoy happiness, positive coping, and positive rumination, which are the sub-dimensions of

PNRS of the students' scores and Life Orientation Test (optimism); with a negative significant relationship PNRS sub-dimensions happiness suppression, negative attribution, self-deny, and negative rumination between their scores and their scores on the Life Orientation Test (optimism). In addition, while a negative significant relationship was observed between scores, they received enjoy happiness, positive coping, and positive rumination, which are the sub-dimensions of PNRS of the students' scores and depression; with a positive significant relationship PNRS sub-dimensions happiness suppression, negative attribution, self-deny, and negative rumination between their scores and their scores on the depression. These results show that the results of the Turkish form, the scale is parallel to the results in the original (Yang et al., 2018) and criterion-related shows that its validity is at an acceptable level.

For the 5 sub-dimensions of the scale, the test-retest correlation performed at 15-day intervals varying between .61 and .67, and it is seen .65 for positive rumination in the second order 2-dimensional structure, .74 for negative rumination. In addition, it is seen that cronbach alpha values for the 5 sub-dimensions of the scale vary between .65 and .86 and for the positive rumination found in the second order 2 dimensional structures of the scale, .78 for positive rumination and .88 for negative rumination.

When we examine the evaluation criteria followed in the evaluation of Cronbach alpha coefficient, it can be said that the scale is quite reliable when the coefficients is $0.60 \leq \alpha < 0.80$, and it can be said that the scale is highly reliable when the coefficient is $0.80 \leq \alpha < 1.00$ (Özdamar, 2002) and based on that fact, the results are satisfactory. In general, the findings show that the Positive and Negative Rumination Scale is a valid and reliable measurement tool to evaluate its positive and negative sides of rumination.

It can be said that the scale, adapted to Turkish culture, is a valid and reliable measurement tool to evaluate the positive and negative aspects of rumination. It shows that it is a valid and reliable measurement tool to evaluate Providing a multi-dimensional evaluation of rumination, PNRS provides both positive affect and positive and negative response to negative affect as well as positive and negative. It fills an important gap in rumination measures by focusing on the response (Yang et al., 2018).

As a result, in the university student sample of the Positive and Negative Rumination Scale with the 5-factor first order structure and 2-factor second order model, it can be stated that the sample is suitable for Turkish culture, and it can be said that this scale to contribute on the researches which makes it possible to evaluate the multidimensionality of rumination.

This study has some limitations. Only university students participated in the research group. Therefore, in future studies, reliability and validity studies of the scale can be conducted for individuals in variety of age groups (adolescence, middle-age group, etc.). In addition, it can be tested whether this scale is a valid and reliable scale on individuals with psychological disorders. It can be used mental health experts working in psychological counseling and guidance units within the constitutions of universities for individuals who have rumination problems in both individuals and group sessions.

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Author Contributions

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

The research was reviewed by the Social and Human Sciences Research and Publication Ethics Committee Necmettin Erbakan University and was given permission (Date: 3.4.2020, Ref: 2020/22). In addition, the participants participated in the study on a voluntary basis.

Ethics Committee Name: Necmettin Erbakan University Institute of Social and Human Sciences Research and Publication Ethics Committee

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