

Validity and Reliability of the Turkish version of the Ruminative Thought Style Questionnaire

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ÖZET:

Ruminatif Düşünme Biçimi Ölçeği'nin Türkçe geçerlilik ve güvenilirliği

Amaç: Tek bir konu ya da düşünce ile sürekli meşguliyet durumu olarak tarif edilen ruminasyon kavramı, özellikle anksiyete ve duygudurum bozuklukları olmak üzere birçok psikiyatrik bozukluğun gelişimde rol alan önemli bir bilişsel süreç olarak değerlendirilmektedir. Psikiyatri pratiğinde ruminatif düşünce biçimini değerlendirmek üzere birçok ölçek geliştirilmiştir. Bu çalışmanın amacı, sadece belli psikopatolojik durumlara özgü ortaya çıkan ruminasyonu değil, bütün psikiyatrik tablolarda ve klinik olmayan durumlardaki ruminatif düşünme biçimini değerlendiren, ruminasyonu psikopatolojilerden bağımsız bir bilişsel süreç olarak ele alan, Ruminatif Düşünme Biçimi Ölçeği'nin Türkçe formunun geçerlik ve güvenilirlik çalışmasını yapmasıdır.

Yöntem: Çalışma araştırmaya katılmayı kabul eden 262 sağlıklı gönüllünün oluşturduğu bir örnekleme yapılmıştır. Araştırmaya dahil edilen tüm katılımcılara Ruminatif Düşünme Biçimleri Ölçeği (RDBÖ), Beck depresyon envanteri (BDE), Beck Anksiyete Ölçeği (BAÖ), Leahy Duygusal Şema Ölçeği (LDŞÖ), Penn State Endişe Ölçeği, Üstbilgi Ölçeği-30(ÜBÖ), Otomatik Düşünce Ölçeği uygulanmıştır. Güvenilirlik analizi için iç tutarlılık göstergesi olarak Cronbach alfa değerleri, madde-toplam puan korelasyonları ve test-tekrar test güvenilirliği hesaplanmıştır. RDBÖ'nün yapı geçerliğini ve maddelerin faktör yapısını saptamak amacıyla uygulanan faktör analizinde temel bileşenler yöntemi ve varimax dönüştürmesi, faktör yapısını değerlendirmek için Temel Bileşenler Analizi (Principal Component Analysis) ve Scree-plot test analizi uygulanmıştır.

Bulgular: Tüm test için Cronbach alfa iç tutarlılık katsayısı $r=0.907$ olarak saptandı. Bu sonuç RDBÖ'nün iç tutarlılığının yüksek olduğunu göstermektedir. Temel bileşenler analizinde eigen value değeri 1'in üstünde 5 madde tespit edilmiş ve uygulanan Scree-Plot analizi ile ölçeğin orijinal formundaki tespit edildiği gibi, toplam varyansın %63.43'ünü açıklayan tek faktör kabul edilmiştir. Çalışmamızda ölçeğin toplam puan test-tekrar test korelasyon katsayısı $r=0.84$ ($p<0.01$) olarak hesaplanmıştır. Bu sonuç ölçeğin test tekrar test güvenilirliğinin yeterince güçlü olduğuna işaret etmektedir. RDBÖ'nün yakınsak geçerliğinin araştırılması için LDŞÖ-ruminasyon alt-ölçeği ve Üstbilgi-30 ölçekleri ile arasındaki korelasyonlara bakılmış ve Pearson korelasyon tekniği ile incelenmesi sonucu anlamlı ilişkiler elde edilmiştir. Ayırt edici geçerliliğin araştırılması için RDBÖ'nün puanları ile LDŞÖ- hislerin Kabul edilmesi ve Anlaşılabilirlik alt-ölçekleri puanları Pearson korelasyon tekniği ile incelenmiş ve negatif yönde anlamlı ilişkiler elde edilmiştir.

Sonuç: Bu çalışma sonucu ortaya çıkan veriler Ruminatif Düşünme Biçimleri Ölçeği'nin Türkiye şartlarında, geçerli ve güvenilir bir ölçüm aracı olarak kullanılabileceği gösterilmiştir.

Anahtar sözcükler: Ruminasyon, ruminatif düşünme biçimi, geçerlik, güvenilirlik

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ABSTRACT:

Validity and reliability of the Turkish version of the Ruminative Thought Style Questionnaire

Objectives: Defined as the constant occupation with one matter or thought, the concept of rumination is recognized as an important cognitive process, which plays a role in the evolution of many psychiatric disorders. In order to evaluate the form of ruminative thought, many measurement questionnaires have been developed in psychiatry practice. The Ruminative Thought Style Questionnaire estimates ruminative thinking, regardless of any psychopathology, as a single cognitive process. The purpose of this study is to examine the validity and reliability of the Turkish version of the Ruminative Thought Style Questionnaire, developed by Brinker and Dozois in English.

Method: The study was done with a sample of 262 healthy volunteers, who agreed to participate in the research. Every participant was given the following questionnaires: the Ruminative Thought Style Questionnaire (RTS), the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI), the Leahy Emotional Schema Scale (LESS), the Penn State Worry Questionnaire (PSWQ), the short form of the Metacognitions Questionnaire (MCQ-30), and the Automatic Thoughts Questionnaire (ATQ). For reliability analysis we used Cronbach's alpha values as an indicator of internal consistency, item-total correlations and test-retest reliability. To determine the construct validity and factor structure of the RTS, we used principal components factor analysis and the varimax rotation method. To assess the factor structure of the RTS, principal components analysis and scree-plot analysis were applied to the test.

Results: In the study of reliability with correlation analysis, it was observed that the internal consistency of the questionnaire was high (Cronbach alpha= 0.907). Principal components analysis identified 5 items over the eigenvalue of 1. After principal components analysis was applied, scree plot analysis revealed that the Turkish version of the RTS had one component, and this explained 63.43% of the total variance. In our study, the total point test-retest correlation factor of the scale was calculated as $r=0.84$ ($p<0.01$). This correlation value shows a strong relationship between the two measurements. In order to search for the convergent validity of the RTS, the correlation between the LESS-rumination sub-scale and the Metacognitions Questionnaire was examined and meaningful relations were found. For the divergent validity, there appeared to be meaningful negative relationship between the scores of the RTS and the LESS- Acceptance of Feelings and Comprehensibility sub-scales.

Conclusions: This study shows that the Ruminative Thought Style Questionnaire can be used as a valid and reliable scale in a Turkish population.

Key words: Rumination, ruminative thinking style, validity, reliability

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INTRODUCTION

The relationship of cognitive reaction types to psychopathological conditions has been increasingly put forward in recent years. Rumination, one of such cognitive processes, is a repetitive thought form described as the mind's constant occupation with a single subject or thought (1). The concept, known as a cognitive process mostly related to obsessive-compulsive disorder in psychiatry practice, has begun to be referred to as one of the basic factors of depression psychopathology (2,3).

Several theories, models and scales have been developed related to the concept pursuant to the "Response Style Theory of depression" developed by Nolen-Hoeksema on the basis of the "Depressive Rumination" concept, pioneering common study of the impact of rumination on psychological processes (4). Response Style Theory describes depressive rumination as a "form of thought formed in a repetitive and passive manner with focusing to the meaning, reasons, and outcomes of the depression symptoms of a person" (5). The studies which have constituted the basis to of this conceptualization have showed that rumination increased the intensity and duration of depressive periods (5-8). Rumination brings about an inclination to depression causing more frequent remembering of negative personal memories, a feeling of despair, and inability of the person to produce effective solutions to his problems (9-12).

It has been shown that rumination is a maladaptive coping strategy in post-trauma stress disorder, and that there were higher rumination scores in such individuals compared to the control group (13,14). It has been shown that rumination is an effective cognitive process in the pathogenesis of social anxiety disorder (SAD), and that it was a significant factor in the revelation and continuity of SAD (15). It has been expressed in other clinical studies that rumination had a significant role in pathogenesis, and higher rumination scores were determined in SAD patients compared to the control group (16-18).

Researchers have examined rumination as a

cognitive process in view of different psychopathological conditions and developed different theories and scales based on such theories. Among these scales the validity and reliability study in Turkish of the Metacognition Questionnaire, used for evaluation of metacognitions in psychopathological conditions, has been published by Tosun and Irak (20). The validity and reliability of the Ruminative Reactions Scale, used most in the field, evaluating the ruminative thought structure in the presence of a depressive state of mind, have been determined by Neziroğlu (21).

As observed, research on the relationship of psychopathology with rumination has gradually been increasing. In this context, development of measurement tools to measure the ruminative type of reaction, as independent from a single psychopathology, can help in terms of diagnosis of psychopathologies and management of the treatment process. Our study aims to determine the validity and reliability, in a Turkish population, of the Ruminative Thought Style Questionnaire developed by Brinker and Dozois which handles rumination as independent from its content (positive-negative) or time direction (past-future).

METHOD

Study Pattern And Sampling

We received permission from Jay K. Brinker, the first author of the article evaluating the validity and reliability of the scale, having accessed him via electronic mail. The scale was translated into Turkish by four people, two specialists in English language and literature, and two psychiatrists with very good command of English. The translations were evaluated by the research team, and a common Turkish text was formulated. With the help of a professional working in the field of translation, the Turkish text was translated into English again and compared to its original. The Turkish form was finalized with the help of two specialist psychiatrists with very good command of English, and feedback was received from 10 psychiatric assistants who completed the test on the clarity of the text. A total

of 262 (162 females and 100 males) volunteered for the research in the faculties of science-letters of a university in Istanbul.

Materials

Ruminative Thought Style Scale (RTS): The original name of the scale developed by Jay K. Brinker and David J.A. Dozois is “Ruminative Thought Style Questionnaire” (22). The scale consisted of 20 items rated on a 7-point Likert type scale from 1 (not at all descriptive of me) to 7 (describes me very well). In the scale, aimed at evaluation of the ruminative thought styles, the participants are scored between 7 (describes me best) and 1 (not describing me at all), whereby they specify to what extent the expressions in the items reflect themselves. The scale, which considers ruminative thought to be repetitive, uncontrolled, recurrent and intrusive, investigates these attributes in the items it includes.

The concept of the Ruminative Thought Scale, as different from other similar scales, tries to evaluate the general ruminative thought inclination without considering one’s mood. This shows that the scale is suitable for use in other psychopathological conditions. Because it is not peculiar to any psychopathologic condition, the total of the scores in the scale do not point to a psychiatric disorder. A high total point in the scale, which has no cutoff score, shows a high ruminative thought style.

Leahy Emotional Scheme Scale (LESS): The original name of the scale developed by Robert Leahy was “Leahy Emotional Schema Scale (LESS)”. The Leahy scale’s content consists of expressions to determine one’s beliefs on his emotions and how he deals with his emotions. The original form consists of 59 items in total and 14 sub-items consisting of 2 to 7 items each (23). The scale has no total score, so the tendencies in the sub-items are instead taken into consideration. The “rumination” sub-scale has been included in the present study for use in convergent validity, and the “comprehensibility” and “acceptance of feelings” sub-scales have been included for use in the divergent validity study. The

form of the scale suitable for Turkish society has been formed by Yavuz et al., having performed a validity and reliability study (24).

Beck Depression Inventory (BDI): The second form of the scale originally developed by Beck et al. in 1961 was developed in 1978 (25). In the scale with 21 items inquiring about depressive symptoms, each item scores between 0 and 3, and the total point score is acquired having summed up the points of the items. The validity and reliability study in Turkish was performed by Hisli in 1988 (26).

Beck Anxiety Inventory (BAI): This scale developed by Beck et al. in 1998 measures the frequency of one’s experiencing anxiety symptoms (27). The scale, consisting of 21 items, provides Likert type (0=none, 3=intensive) measurement over four points. Validity and reliability study of the scale has been conducted in Turkish (28).

Metacognition Questionnaire (MCQ-30): The original name of the scale developed by Cartwright-Hatton and Wells is the “Meta-Cognitions Questionnaire (MCQ)” (29). Wells and Cartwright-Hatton subsequently published the short form of the scale with 30 items (MCQ-30) (30). The scale was prepared starting from metacognitive models related to psychopathologies and has been developed for the evaluation of metacognitive beliefs, judgments and processes. The scores, obtained from the scale by Likert type grading over four points, vary between 30 and 120, and an increasing score refers to increased pathologic metacognitive activity. The MCQ-30 has been included in our study for evaluation of convergent validity. Adaptation, validity and reliability studies have been conducted by Tosun and Irak in Turkish samples (20).

Penn State Worry Questionnaire (PSWQ): The Penn State Worry Questionnaire is a Likert type scale over five points consisting of 16 questions developed to measure a certain pathological concern characterized with excessive, stable and uncontrolled anxiety (31). A validity and reliability

study in the Turkish version of the scale was conducted by Boysan et al. (32).

Automatic Thoughts Questionnaire (ATQ): The ATQ is a self-evaluation scale of the Likert type consisting of 30 questions measuring the frequency of emergence of negative automatic thoughts related to depression, developed by Hollan and Kendal (33). Adaptation to Turkish society of the scale was done by Şahin and Şahin (34).

The ATQ and BDI were included in the study to evaluate the relation of rumination with a depressive form of thought as a cognitive process, and the PSWQ and BAI were included to evaluate its relation with concern and anxiety, which are two repetitive forms of thought, and to form a data source for later studies.

Statistical Analysis

The data collected from the subjects were statistically analyzed using SPSS (Statistical Package for the Social Sciences) version 13.0. Compliance of the RTS Turkish version for factor analysis was evaluated by using Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy (35,36). The factor analysis of the Scale was done using Principal Components Analysis and 'Varimax with Kaiser Normalization' methods. To determine convergent validity of the RTS, the relations between the MCQ-30 and the LESS Rumination sub-scales, and to determine divergent validity of the RTS, the relations between the LESS comprehensibility and acceptance of feelings sub-scales were examined using the Pearson correlation technique.

Findings

The homogeneity of the data acquired in our research was tested in terms of normality and linearity variances, and it was observed whether they had excessive scores, and whether the degree of homogeneity of the distribution of the sampling was adequate for research, and that there was no excessive marking.

Descriptive Statistics

61.8% those participating in the study (162) were female, and 38.2% (100) were male. 91.2% of the participants (239) were single, and 8.4% (22) were married. One participant stated that he was living with his partner (0.4%).

Findings on Reliability

The Cronbach Alfa reliability analysis technique was used for internal consistency analysis of the Ruminative Thought Style Scale. Cronbach Alfa internal amount factor was determined as $r=0.907$ for the entire test. This outcome shows that the internal consistency of the RTS is high.

The item total score correlation method was used for analysis of each item. In our study, scale total points of the items and their correlations $r=0.474$ (RTS-6) and $r=0.699$ (RTS-3) have been calculated ($p<0.01$). These results show that each item conforms to the entire scale at a moderate or good level. The fact that the total point correlations are at a desirable level showed that there is no need to make item corrections in the scale.

The test-retest method was used to determine the reliability of the scale, and the RTS was given again for this purpose 30 days after the first test to 32 randomized people from among the participants. In our study, the total point test-retest correlation factor of the scale was calculated to be $r=0.84$ ($p<0.01$). This correlation value shows a strong relation between the two measurements.

Findings on Validity

Construct Validity Analysis and Relations of Items Analysis

Principal components analysis and varimax rotation were applied in the factor analysis to determine the structural validity of the RTS and the factor structure of the items. Determination of the Kaiser-Meyer-Olkin sampling adequacy as $r=0.881$ ($p<0.0001$) showed that the data is compatible with the factor analysis. (Bartlett's ki-square=2320.547;

$p < .001$). Factors with eigenvalue statistics over 1 have been considered meaningful in Principal Component Analysis practice used to determine the factor structure. Five items were determined to have an eigenvalue above 1 as a result of the principal components analysis. To evaluate the factor structure, Scree-plot test analysis was applied in our study. In the Scree-plot analysis, it was seen that the scale had a single factor structure. The observation that all items are intense in the first factor also in the Principal Component Analysis supports the single-factor nature of the scale (Table 1). A single factor was accepted which explained 63.43% of the total variance as a result of the structure validity analysis.

The Pearson multiplication of moments correlation analysis technique is used for examination of the relationships between the 20 items of the RTS. Selective relationships were demonstrated between items in this analysis. Meaningful correlation factors varied between $r = 0.170$ and $r = 0.690$, and these factors were meaningful at the level of $r = 0.01$.

Convergent Validity

Convergent validity study was analyzed as a result of examination of the relationships between

RTS points, the LESS 'rumination' sub-scale and the MCQ-30 points using the Pearson correlation technique. Analysis results were shown in Table 2. It was determined that RTS total point and MCQ-30 total point scores showed a meaningful positive relationship at a rate of $r = 0.516$ ($p < 0.01$). Similarly, a positive meaningful relationship was determined between the LESS 'rumination' sub-scale and the RTS total point scores at a rate of $r = 0.469$ ($p < 0.01$). These results support the simultaneous validity of the Turkish form of the scale.

Divergent Validity

Divergent validity is based on the principle of a high negative correlation of similar scales targeted to measure different tendencies (37). In our study, the relationships between the scale points, LESS-comprehensibility sub-scale and LESS-acceptance of emotions sub-scale scores were analyzed using the Pearson correlation technique to evaluate the divergent validity of the RTS. The existence of a meaningful negative relationship between the RTS and LESS- comprehensibility sub-scales scores at a rate of $r = -0.359$ ($p < 0.01$), and between the RTS and LESS-acceptance of emotions sub-scales at a rate of $r = -0.136$ ($p < 0.05$) was determined. These correlation

Table 1: Principal components analysis

	Component				
	1	2	3	4	5
r3	0.718		-0.430		
r11	0.710	-0.330			
r20	0.702				-0.339
r15	0.689				
r19	0.683			0.302	-0.372
r4	0.674		-0.364		
r10	0.673				
r18	0.654				
r12	0.606	-0.363	0.333		
r2	0.598		-0.552		
r17	0.589				
r13	0.586	-0.394			
r8	0.574			-0.347	
r14	0.567			0.445	0.409
r9	0.551				
r1	0.536		-0.467		
r5	0.504	0.426		0.318	
r6	0.442	0.644			
r16	0.459	0.617			
r7	0.532				0.554

Table 1: Correlations of RTS with other scales used in the study

	BDI	RTS	MCQ	MCQ-danger	MCQ-Control	LSEER	ATQ	BAI	PSWQ-C	PSWQ-A	PSEÖ-T	LSEE-C	LSEE-AOE
BDI	1												
RTS	0.387(**)	1											
MCQ	0.312(**)	0.516(**)	1										
MCQ-danger	0.340(**)	0.480(**)	0.747(**)	1									
MCQ-control	0.358(**)	0.481(**)	0.684(**)	0.594(**)	1								
LSEE-rumination	0.249(**)	0.469(**)	0.481(**)	0.441(**)	0.320(**)	1							
ATQ	0.677(**)	0.446(**)	0.393(**)	0.358(**)	0.389(**)	0.315(**)	1						
BAI	0.495(**)	0.444(**)	0.375(**)	0.331(**)	0.369(**)	0.234(**)	0.537(**)	1					
PSWQ-Control	0.286(**)	0.529(**)	0.503(**)	0.376(**)	0.482(**)	0.326(**)	0.458(**)	0.378(**)	1				
PSWQ-Absense of worry	-0.029	0.160(**)	0.105	0.081	0.110	-0.004	0.006	0.046	0.316(**)	1			
PSWQ-total	0.221(**)	0.491(**)	0.449(**)	0.336(**)	0.434(**)	0.264(**)	0.375(**)	0.324(**)	0.933(**)	0.636(**)	1		
LSEE-comprehensibility	-0.360(**)	-0.359(**)	-0.344(**)	-0.405(**)	-0.314(**)	-0.404(**)	-0.454(**)	-0.293(**)	-0.248(**)	-0.041	-0.217(**)	1	

values support the existence of a negative linear relationship between the scales, and the divergent validity of the scale. Analysis results were shown in Table 2.

Apart from these findings, meaningful relationships were found between the sub-scales “uncontrollability and danger” (r=0.516, p<0.01) and “need to control thoughts” (r=0.480, p<0.01) of the metacognition scale and the RTS. Similarly, meaningful relationships were demonstrated between total points of the BAI (r=0.444, p<0.01) and PSWQ (r=0.491, p<0.01) used in clinical evaluation of anxiety and concern, and the RTS scores. Meaningful relationships were determined between the BDI (r=0.387, p<0.01) and ATQ (r=0.446, p<0.01) used in clinical interpretation of depression apart from anxiety, and the RTS total points. Where the correlation factor (r) is ≥0.25, a positive linear relationship was determined between the evaluated variables; the values above this show the existence of a meaningful intermediate relation between the concerned scales and the RTS (Table 2).

DISCUSSION

The RTS was developed on the basis of the definition of rumination by Martin and Tesser, claiming that rumination is not a concept peculiar to some psychopathologic conditions (depression, anxiety disorder), but a cognitive process that can be evaluated in all psychopathologic processes., It was intended to become an instrument to evaluate rumination in terms of psychiatry and psychology (23,38). In our study in which the psychometric particularities of the scale for Turkish society were examined, the average RTS total point score of the participants was determined to be 89.1. This value is quite close to the value acquired in the original study of the scale (88.9). Such similar values in the general population may inform the clinician about the ruminative thought profile.

Our study found that the internal consistency factor of the RTS was r= 0.907. This result is a nearly perfect value, and proves that RTS shows very good internal-consistency and high reliability. In our research, item-total point correlations were found

to be $r=0.474$ (RTS -6) to $r=0.699$ (RTS -3) ($p<0.01$). The reliable article correlation factor should be determined to be $r=0.30$ or at least $r=0.25$ for item-total point correlation, reflecting internal consistency (39,40). Within the framework of these results, it can be said that the RTS has high internal consistency.

In the principal components analysis study used in the structure validity analysis, 5 items were determined to have eigenvalues above 1. It was determined in the Scree-plot analysis, exercised to determine the factor structure of the Turkish form, that the RTS has a single-factor structure. Because the principal component analysis results were not provided in the original study, we had no means to compare them with the results in our study; however, the facts that the principal component analysis showed that all articles were intense in the first factor and that scree-plot analysis showed an evident single-factor pattern revealed that the adaptation of the RTS into Turkish has a single factor pattern.

The most significant parameter of the reliability of scales that evaluate constant attitudes rather than episodic conditions is that the parameter shows similar results in evaluations of the same person at different times. To this end, the test-retest Pearson correlation factor was calculated to be $r=0.84$ ($p<0.01$) upon comparison of all items of the scale reapplied to the same individuals after an interval of 30 days in our research. This correlation value shows that there was a strong relationship between the two measurements, meaning that the scale constantly puts forward similar results at different times. As a result, internal consistency analysis, item-total point analysis and test-retest correlation analysis results support the conclusion that the RTS shows high reliability under local conditions of Turkey.

The validity study is intended to determine whether or not a scale evaluates the feature it plans to measure in a fashion close to reality (38). In the convergent validity study that we conducted, the application of a measurement tool which previously had undergone validity and reliability studies to measure the same properties, and

comparison with the value thus acquired with the studied measurement tool were performed (41). Individuals with positive beliefs about the functionality of rumination are more inclined to use the ruminative form of thought. Therefore, in the convergent validity study, the MCQ-30 with 'positive beliefs' sub-scale was used, which fundamentally examines the thoughts and beliefs of the thought processes of a person himself, and which rates the degree of belief in the functionality of rumination-like reaction forms of a person (30,42). Another scale used in the simultaneous validity study was the LESS 'rumination' sub-scale. Positive meaningful relationships were obtained as a result of examination of the correlations between the total points of these two scales and the RTS total points using the Pearson correlation technique (Table 2). These results show that the RTS Turkish form has convergent validity in samples from our country.

One of the methods used to evaluate structure validity is investigation of divergent validity by investigating whether the scale distinguishes between those bearing and not bearing the property being evaluated. The divergent validity of the scale is supported by high negative correlations with similar scales targeted to measure different tendencies (38,42). For this purpose the LESS's 'comprehensibility' and 'acceptance of emotions' sub-scales were used in the divergent validity analysis. Comprehensibility, which is defined as a sub-item in the emotional scheme model investigating the cognitive structure of emotional processing, is defined as recognition by a person that the emotion experienced by a person may be related to his/her beliefs and experiences, thus making emotions more meaningful and eliminating pathological interpretations. Thus, a person blames himself less about his/her feelings, recognizes that similar emotions are also present in other people, fears less about losing his control and believes his emotions will not last long, resulting in an inclination to less rumination (24). The sub-scale "acceptance of emotions" of the LESS is an emotional schema related to acceptance of one's own emotions and giving up one's struggle to prevent them. This

functional scheme form will reduce rumination, and decrease the severity and stability of anxiety and depression symptoms (24). Negative meaningful correlations were found as a result of comparison between the RTS total points and the scores of the sub-scales, LESS 'comprehensibility' and LESS 'acceptance of emotions', using Pearson correlation analysis. These results support the divergent validity of the RTS Turkish version.

Meaningful relationships were demonstrated between the MCQ's "uncontrollability and danger" and "need to control thoughts" sub-scales and the RTS. This result is compatible with the findings of the metacognition model that positive metacognitive beliefs and negative metacognitive beliefs are interrelated (20). These findings support the hypothesis that an increase in rumination-like processes may lead to strengthening of negative beliefs and thus emergence and maintenance of a clinical picture.

Another finding of our research is that there were meaningful relationships between total points of the BAI and PSWQ related to anxiety and worry, and RTS points. These results may be indicators that ruminative thought may include properties of concern, which is one of the repetitive forms of thought. This finding supports the claim of Martin and Tesser, who made one of the broadest descriptions of the concept, that rumination is a generic term covering all repetitive forms of thought (39). Nevertheless, the ruminative form of reaction and the reaction of worry may be two distinct

entities that can frequently coexist rather than being interrelated. Although they are similarly repetitive, the cognitive themes of the two processes and the clinical picture they reveal are distinct. As a result, more data and research are needed for clarification of the similarities and differences between rumination and worry, and the revelation of possible etiological associations.

Meaningful relationships were shown between the BDI and ATQ points and the RTS total points in our research (Table 2). These results show that an increased tendency to rumination is related to the severity of depression and intensity of negative thoughts. This is consistent with the findings of the metacognitive depression model (3).

One limitation of our research was that participants consist only of university students. Another limitation was that the participants were not psychiatrically evaluated. Validity and reliability studies of the RTS are required in clinical groups with psychiatric disease and in a Turkish sampling group with wider sociodemographic properties.

CONCLUSION

The data from our research showed strong outcomes that the RTS could be a valid and reliable measurement tool in evaluation of the ruminative form of thought in a Turkish sample. We believe that cognitive mechanisms would fill a significant gap in the research of the pathogenesis of psychopathologic conditions in Turkish psychiatric practice.

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Appendix: Turkish version of the Ruminative Thought Style Scale

Aşağıdaki ifadelerin sizi ne kadar tarif ettiğini puanlayarak cümlelerin başındaki boşluğa yazınız.

1 2 3 4 5 6 7
(Hiç) (çok iyi)

1. Zihnimin sürekli bazı şeyleri tekrar tekrar gözden geçirdiğini fark ederim.
2. Bir sorunum olduğunda bu durum uzun süre zihnimi kemirir.
3. Gün boyu bazı düşüncelerin tekrar tekrar zihnime üşüştüğünü fark ederim.
4. Bazı şeyleri sürekli düşünmekten kendimi alamam.
5. Birileriyle karşılaşma öncesinde olabilecek bütün senaryoları ve konuşmaları zihnimde canlandırırım.
6. Önceden yaşadığım hoşuma giden olayları hayalimde tekrar canlandırmaya yatkımdır.
7. Kendimi, gün içerisinde “Keşke yapsaydım” dediğim şeyleri hayal ederken bulurum.
8. Kötü geçtiğini düşündüğüm bir görüşme sonrasında, “keşke şöyle davransaydım” dediğim farklı senaryolar hayal ederim.
9. Karmaşık bir problemi çözmeye çalışırken çözüme ulaşmak yerine problemin başına döndüğümü fark ederim.
10. Yaklaşan önemli bir olay varsa, bu durumu o kadar çok düşünürüm ki sonunda sinirli ve mutsuz bir hale gelirim.
11. İstenmeyen düşünceleri zihnimden bir türlü atamam.
12. Bir problem hakkında saatlerce düşünsem de sorunu açıkça anlamak için biraz daha zamana ihtiyaç duyarım.
13. Hakkında ne kadar düşünürsem düşüneyim, bazı sorunlarla ilgili net bir çözüme ulaşmam benim için çok zordur.
14. Bazen bir şeyler hakkında saatlerce oturup düşündüğüm olur.
15. Bir meseleyi çözmeye çalışırken, zihnimde farklı noktalara dağılan uzun bir tartışma yaşar gibi olurum.
16. Oturup geçmişteki güzel olayları hatırlamak hoşuma gider.
17. Heyecan verici bir olayı beklerken, bu olay ile alakalı düşünceler, o anda yaptığım işi engeller.
18. Bazen, bir konuşma sırasında bile, alâkasız düşüncelerin zihnime hücum ettiği olur.
19. Yakın zamanda önemli bir görüşme yapacaksam, zihnimde sürekli olarak bunu tekrar etme eğilimim vardır.
20. Önemli bir olay yaklaşıyorsa bununla ilgili düşünmekten kendimi alamam.