

# The Relationship Between Dysfunctional Attitudes, Rumination Response Styles and Depression

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## ABSTRACT

The relationship between dysfunctional attitudes, rumination response styles and depression

**Objective:** In our study we aimed to investigate the relationship between rumination response styles, dysfunctional attitudes and depression.

**Methods:** 60 patients diagnosed with depression according to the DSM-IV-TR diagnostic criteria in the Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery outpatient clinics are involved in our study. All participants were administered a sociodemographic questionnaire, the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Beck Depression Inventory (BDI), Dysfunctional Attitude Scale (DAS) and Ruminative Responses Scale (RRS-short version).

**Results:** In our study, there was mild-moderate negative correlation between depression and the perfectionist attitudes, need for approval, independent attitudes subscores. The RRS-short version brooding subscore was highly positively correlated with depression. Depression and RRS-short version reflecting score was moderately and positively correlated. As predictors of depression, high subscores of RRS-short version brooding and RRS-short version reflected increased risk for depression, whereas high subscores of DAS perfectionist attitudes are evaluated to be protective for depression.

**Conclusions:** In our study, in contrast to the literature, it was shown that dysfunctional attitudes are not positively correlated with depression nor are they predictors of depression. However, it may not be appropriate to make such comment based on a single study. Factors that can lead to this conclusion are discussed in the study. On the other hand, our study emphasizes the key role of rumination in depression. In practice of cognitive behavioral therapy of which efficacy in treatment of patients with depression has been known, assessment of ruminative responses, treatment techniques for reducing ruminative responses should be targeted.

**Key words:** Brooding, depression, dysfunctional attitudes, reflecting, rumination



## ÖZET

Ruminatif yanıt biçimi ve fonksiyonel olmayan tutumların majör depresyonla ilişkisi

**Amaç:** Araştırmamızda, majör depresyon (M.depresyon) hastalarında depresyon ile ruminatif yanıt biçimi ve fonksiyonel olmayan tutumların ilişkisinin araştırılması amaçlandı.

**Yöntem:** Araştırmaya, Bakırköy Prof. Dr. Mazhar Osman Ruh Sağlığı ve Sinir Hastalıkları Eğitim ve Araştırma Hastanesi ayakta tedavi birimlerine başvuran, DSM-IV-TR ölçütlerine göre unipolar depresyon tanısı konulan 60 hasta dahil edildi. Katılımcılar sosyodemografik veri formu, DSM-IV Eksen Bir Tanıları İçin Yapılandırılmış Klinik Görüşme (SCID-I), Beck Depresyon Envanteri (BDE), Fonksiyonel Olmayan Tutumlar Ölçeği (FOTÖ-A), Kısa Form-Ruminasyon Ölçeği (KF-RÖ) ile değerlendirildi.

**Bulgular:** Araştırmamızda, depresyon ile FOTÖ-A mükemmelci tutum puanı, onay görme ihtiyacı, bağımsız tutum puanları arasında negatif yönde, zayıf-orta düzeyde, anlamlı bir ilişki vardı. Depresyon ile KF-RÖ saplantılı düşünme (brooding) puanları arasında pozitif yönde, iyi düzeyde, ileri derecede anlamlı bir ilişki vardı. Depresyon ile KF-RÖ derin düşünme (reflecting) puanları arasında pozitif yönde, orta düzeyde, ileri derecede anlamlı bir ilişki vardı. Depresyonun yordayıcıları olarak saptanan KF-RÖ saplantılı düşünme ve KF-RÖ derin düşünme depresyon riskini arttırırken, FOTÖ-A mükemmelci tutum depresyon için koruyucuydu.

**Sonuç:** Araştırmamızda, literatürün aksine, fonksiyonel olmayan tutumların depresyonla pozitif yönde korele olmadığı ve yordayıcılığının bulunmadığı saptanmıştır. Ancak tek bir araştırmadan yola çıkarak bu yorumu yapmak doğru olmayabilir. Bu sonuca yol açabilecek etmenler tartışılmıştır. Öte yandan araştırmamız, depresyonda ruminasyonun anahtar rolüne dikkat çekmektedir. Depresyon tedavisinde etkinliği bilinen bilişsel davranışçı terapi uygulamalarında ruminatif tepkilerin değerlendirilmesi, ruminatif tepkileri azaltmaya yönelik tedavi tekniklerinin uygulanması, depresyonun psikoterapisinde hedeflenmelidir.

**Anahtar kelimeler:** Saplantılı düşünme, depresyon, fonksiyonel olmayan tutumlar, derin düşünme, ruminasyon

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## INTRODUCTION

Beck defined depression with past personal loss or belief of insufficiency (1). Beck argued that individuals with negative self schemas, including dysfunctional attitudes such as perfectionism and need for approval are more prone to depressive episodes since these beliefs become active during stressful life events. It has been shown that dysfunctional attitudes increase susceptibility to depression (2,3).

Nolen-Hoeksema's response styles theory (4) focuses on the processing of thought or the style of thought which emerge in response to stressors, rather than the content of the thought. According to the response styles theory, rumination is the repetitive and passive thinking of the possible causes and results of depression symptoms. Response styles theory suggests that individual responses to negative affect is different among individuals and these differences effect the course of the affect (5).

The role of rumination on the onset and persistence of depression have been shown in several experimental and prospective studies (6-8). It has been argued that ruminative response style and the interaction of dysfunctional cognitive schemas increase vulnerability to depression. Robinson and Alloy (9), prospectively investigated the interaction of rumination and negative cognitive contents (attitude/belief) on 148 college students. Study reported that participants with the cognitive content "stress-reactive rumination", who have a greater tendency for rumination during negative life events, are at increased risk for hopelessness depression and major depression. When the interaction of depressive rumination with negative cognitive content was investigated, it was evident that while hopelessness predicted depression, it did not predict major depression. Ciesla and Roberts (10), conducted a series of studies on college students to investigate the interaction of rumination and negative cognitive content. The study showed that rumination was associated with depressive affect and depressive symptoms in individuals with more negative

cognitions. Rumination and negative cognition are found to be predictors of recovery of dysphoric affect. Ciesla and colleagues (11), tested stress-diathesis model in addition to their previous studies and found that negative cognitive content, rumination and being exposed to negative life events were predictors of depressive symptoms.

Vanderhasselt and Raedt (12), investigated whether ruminative response style triggered non-functional attitudes under stress to cause depressive symptoms. College students who did not have a history of depression was investigated prospectively when they are under stress. Results indicated that rumination, invariably, might be a mechanism for emergence of depressive affect and non-functional attitudes under stress.

Thomas and Altareb (13), investigated the correlation and predictive value of dysfunctional attitudes and ruminative response style with level of depression in a student sample. Results indicated that rumination and dysfunctional attitudes were positively correlated with depressive symptoms. Linear regression analysis showed that both rumination and dysfunctional attitudes were predictors of depression.

In our study, the aim was to investigate the association of dysfunctional attitudes and rumination with depression and the predictiveness of dysfunctional attitudes and rumination on depression in a sample of patients with major depression.

## METHOD

### Sample

The study was conducted with 60 patients with major depression who gave consent and fulfilled inclusion criteria who applied to Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery in a three-months period. 16 patients declined to participate in the study. 6 other patients were excluded from the study since they did not fulfill the inclusion criteria.

Patients who were between 18 and 65 years of

age, who were diagnosed with major depression per DSM-IV criteria by psychiatrists who were not in the study and who had BDI score 17 or higher were included. Participants agreed to participate in the study and they did not have comorbid psychotic disorders or mental retardation. Diagnosis were validated by Structured Clinical Diagnostic Interview for Axis-I Disorders (SCID-I). Tests were applied in a single session with a random order. Study was approved by the Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery ethical board.

### Measures

**Sociodemographical Data Form:** It was developed by the authors to evaluate sociodemographic (age, gender, marital status, education) and clinical (number of hospitalizations, treatments, regular employment in the last 6 months) data. Data was obtained from the participants.

**Structured Clinical Diagnostic Interview for Axis-I Disorders (SCID-I):** It is a structured interview to evaluate DSM-IV Axis I disorders (14). Çoraçcıoğlu et al. (15) conducted validity and reliability studies of the Turkish form.

**Beck Depression Inventory (BDI):** It is a 21-items inventory developed by Beck in order to evaluate emotional, cognitive, somatic and motivational symptoms of depression (16). It is a self-report including a Likert scale type scoring between 0 and 3. Total score is computed by adding item scores. Turkish adaptation was conducted by Hisli (17). Cronbach alpha coefficient was reported as 0.80. Cut-off score is defined as 17 in the Turkish reliability and validity article.

**Dysfunctional Attitudes Scale form A (DAS-A):** DAS-A is a self-report scale, consisting of 40 items on a 7-point Likert scale, which is developed for measuring dysfunctional attitudes and beliefs. Ten items are reversely coded (2, 6, 12, 17, 24, 29, 30, 35, 37 and 40)

since they point to functional attitudes. The DAS-A consists of and each item consists of a statement (7= fully agree; 1= fully disagree). Higher scores correspond to more frequent dysfunctional attitudes (18). Sahin and Sahin (19) conducted the reliability and validity studies of the Turkish form and four factors including "perfectionistic attitude", "need for approval", "independent attitude" and "variable attitude" were reported.

**Ruminative Responses Scale-Short Form (RRS-SF):** It is designed by Treynor and colleagues (8). It is a self-report with 4-point Likert scale. Each item can be scored from 1 to 4. After a series of components analysis including or excluding confounding variables, authors defined 2 factors termed "reflective pondering" and "brooding". Each factor consists of 5 items. Erdur-Baker and Bugay (20) studied reliability and validity of the Turkish translation. Cronbach alpha coefficients of the total scale, brooding and reflective pondering were 0.85, 0.77, and 0.75, respectively.

### Statistical Analysis

SPSS 17 Windows software was used for statistical analysis. Kolmogorov-Smirnov distribution test was used to assess normal distribution along with descriptive statistical methods (percent, mean, standard deviation). In order to detect the association of the variables, Pearson correlation analysis was used in variables with normal distribution and Spearman correlation analysis was used in other variables. In tables, continuous variables were reported with mean± standard deviation (Mean±SD) or median (25%-75% percentiles) while categorical variables were reported with number of observations and percent (n-%). Significance was evaluated at  $p<0.05$  and  $p<0.001$  levels.

Linear regression analysis was computed in order to investigate the association between dysfunctional attitudes and ruminative response forms. Although brooding and reflective pondering subscales were correlated, we entered each score separately in the regression analysis to explore the predictive values of these variables.

## RESULTS

### Sociodemographic Variables

A total of 60 patients, 19 men (31.7%), and 41 women (68.3%), participated in the study. Age was between 21 and 64 years and mean age was 37±9.4 years. Sociodemographical features are summarized in Table 1 and scale scores are summarized in Table 2.

**Table 1: Distribution of sociodemographical and clinical features (n=60)**

	n	%
<b>Gender</b>		
Male	19	31.7
Female	41	68.3
<b>Education</b>		
Primary	29	48.3
Secondary	22	36.7
College	9	15.0
<b>Marital status</b>		
Single	14	23.3
Married	41	68.3
Divorced	5	8.3
<b>Employment</b>		
Unemployed	36	60.0
Student	3	5.0
Employed	21	35.0
<b>Hospitalisation</b>	58	96.7
<b>Drug treatment</b>	58	96.7
<b>Family history</b>	20	33.3
<b>Substance use</b>	1	1.7
<b>Alcohol use</b>	3	5.0

**Table 2: Scores obtained from the scales (n=60)**

	Median (25-75%) / Mean±SD
<b>BDI</b>	30 (21.25-37.00)
<b>DAS-A total</b>	165.70±33.52
<b>DAS-A perfectionistic attitude</b>	76.36±20.23
<b>DAS-A need for approval</b>	38.35±12.93
<b>DAS-A independent attitude</b>	28 (22.00-31.00)
<b>DAS-A variable attitude</b>	20.5 (18.00-24.00)
<b>RRS-SF total</b>	27.08±5.79
<b>RRS-SF brooding</b>	14.36±3.29
<b>RRS-SF reflective pondering</b>	12 (10.00-15.00)

BDI: Beck Depression Inventory, DAS-A: Dysfunctional Attitudes Scale-A, RRS-SF: Ruminative Responses Scale-Short Form, SD: Standard Deviation

### Associations Among the Variables

There were negative, small-medium, significant ( $p<0.05$ ) correlations among BDI score and DAS-A subscale scores of perfectionist attitude ( $r=-0.363$ ), need for approval ( $r=-0.294$ ), and independent attitude ( $r=-0.259$ ) according to Spearman correlation analysis. There was a positive, large and highly significant ( $p<0.001$ ) correlation of BDI score and RRS-SF subscale brooding score ( $r=0.777$ ), and positive, medium and highly significant correlation with RRS-SF reflective pondering ( $p<0.001$ ) score (Table 3).

**Table 3: Correlations among the variables (n=60)**

	BDI	
<b>Age</b>	r	-0.216
<b>Duration of depression</b>	r	-0.026
<b>DAS-A perfectionistic attitude</b>	r	-0.363*
<b>DAS-A need for approval</b>	r	-0.294*
<b>DAS-A independent attitude</b>	r	-0.259*
<b>DAS-A variable attitude</b>	r	-0.036
<b>RRS-SF brooding</b>	r	0.777**
<b>RRS-SF reflective pondering</b>	r	0.688**

r: Spearman correlation coefficient, \* $p<0.05$ , \*\* $p<0.001$ , BDI:Beck Depression Inventory, DAS-A: Dysfunctional Attitudes Scale-A, RRS-SF: Ruminative Responses Scale-Short Form

### Variables Predicting Depression

In order to investigate variables which predict depression, variables which are significantly correlated ( $p<0.05$ ,  $p<0.001$ ) with BDI; DAS-A perfectionist attitude, DAS-A need for approval, DAS-A independent attitude, RRS-SF reflective pondering and RRS-SF brooding scores, and the variable which fulfills  $p<0.20$  criteria and age (Spearman correlation analysis revealed that there was a negative, small and non-significant association between age and BDI score,  $p=0.98$ ) were included in the regression analysis. Backward stepwise method was used in the regression analysis. DAS-A independent attitude was added in the second step, age was added in the third step and DAS-A need for approval was added in the fourth step of the analysis. Results showed that regression model was highly significant ( $F=35.083$ ,  $p<0.001$ ). BDI score decreased -0.082 unit with one unit increase of perfectionist

**Table 4: Predictors of depression level (n=60)**

Independent variables	Non-standardized coefficients		Standardized coefficients		Confidence interval 95%	t	VIF
	Beta	Standard error	Beta	p			
(Constant)	5.166	4.886		0.295	(-4.623-14.954)	1.057	
Perfectionist attitude	-0.082	0.036	-0.185	0.028	(-0.155)-(-0.009)	-2.260	1.076
Brooding	1.374	0.285	0.503	0.000	(0.803-1.946)	4.817	1.756
Reflective pondering	0.922	0.292	0.321	0.003	(0.338-1.507)	3.160	1.660

VIF: The Variance Inflation Factor, R=0.808, R<sup>2</sup>=0.653, corrected R<sup>2</sup>=0.634, F=35.083, Model p=0.000, Durbin-Watson=1.711

attitude ( $\beta=-0.082$ ,  $t=-2.260$ ,  $p=0.028$ ); on the other hand, one unit increase in brooding increased BDI 1.374 unit ( $\beta=1.374$ ,  $t=4.817$ ,  $p<0.001$ ), and one unit increase in reflective pondering increased BDI 0.922 unit ( $\beta=0.922$ ,  $t=3.160$ ,  $p=0.003$ ). Perfectionist attitude, reflective pondering and brooding explained 0.634 of the variance in depression (Table 4).

## DISCUSSION

Dysfunctional attitudes was used first by Beck (21) to explain the cognitive processes in depression. According to Beck, individual's cognitions and beliefs have an important role in emergence of depression. Beginning from early childhood, dysfunctional attitudes, which have been shaped by family and close relationships, become active by a triggering life event to contribute to emergence of depression (21). Interactions between negative life events and dysfunctional attitudes trigger individual's negative thoughts about self, world and future (22).

According to Beck's theory, schemas help to organize experiences, provide guidance for interpretation of new experiences and shape expectations and predictions. These negative cognitions or schemas are rigid, unrealistic and pessimistic (1).

It is important and helpful to focus on specific cognitions rather than dysfunctional, general cognitions. In research and clinical practice, DAS-A has been used as an indicator of individual's specific cognitions and tendencies (23).

Individuals with many dysfunctional attitudes are believed to be at increased risk for depression (24,25). DAS-A is a reliable instrument, which has been used in

several studies to measure depression type and severity and post-treatment change of cognitive impairments (26,27).

Exploratory factor analysis of DAS-A have been investigated several times. Although 2 to 4 factors have been found in different studies, generally "perfectionistic attitude" and "need for approval" have emerged as strong factors of the scale (28-31).

DAS-A "perfectionist attitude" is associated with high personal standards, being anxious of raising negative comments from others and interpreting errors and flaws as defects. DAS-A "need for approval" is related with the dependence of individual's happiness and self-esteem on approval, support and love from others (28).

In our study, DAS-A perfectionist attitude, need for approval and independent attitude were negatively correlated with BDI. There were no significant correlations between DAS-A and BDI. This was an unexpected finding and was contradictory to current literature. There can be several reasons for this. Correlation between BDI and DAS-A scores was 0.19 in the Turkish validity study. Although authors argued that this correlation was quite smaller than correlations reported in the foreign literature, statistical analysis revealed that the scale was reliable and valid (19). There is a weak correlation between DAS-A and BDI. Studies with larger sample sizes may report different correlations and significance. On the other hand, it is also possible to re-evaluate the reliability and validity of the scale. Besides, depression subtypes were not investigated in the study. Differences among depression subtypes and possible bipolar disorder diagnosis in some of the patients might cause this result.

Papageorgiou and Wells (32) suggested that, although negative automatic thoughts are relatively summary representations of loss and incompetency in depression, rumination forms a chain of repetitive, negative and self-focused thoughts in response to negative thoughts at the beginning.

In response styles theory, three mechanisms are suggested to explain the maintenance of depressive affect by rumination. First, rumination prevents the emergence of attentional mechanisms and helpful coping strategies which leads to a break away from depressive affect. Second, depressive affect influences the retrieval and perception of memories stored in autobiographical memory and acquisition of new knowledge. Classical effect is after the emergence of depressive affect, increased availability of negative information in the autobiographical memory. Third, ruminative response style contributes to explanation of current affect. Individuals with depressive affect prefer explanations which devalue them and this leads to increased depression, in turn (33).

Rumination predicts depressive symptoms and depressive episode. More ruminative individuals are more prone to depressive episodes, even after previous level of depression is controlled for (34). Spasojevic and Alloy (35), in their study followed-up 137 individuals without depression for 2,5 years and found that rumination is a better predictor of depression than dysfunctional attitudes.

Treynor et al. (8) found two components of ruminative response style in terms of depression. Reflective pondering is mental effort of the individual to solve depressive symptoms cognitively. On the other hand, brooding is a passive comparison of unmet expectations with the current situation.

In their prospective study with adolescents, Burwell and Shirk (36), found that brooding and reflective pondering were different from other coping strategies. Brooding, like denial and avoidance, is a voluntary strategy to get away from problem solving. Brooding might reflect inability to get away from stress or negative affect. Reflective pondering, like problem solving and cognitive restructuring, is a strategy to change coping attitudes towards stressors.

In their prospective study, Treynor et al. (8) showed that reflective pondering was less associated with future depression but was correlated with current depression; on the other hand, brooding was associated with both current and future depression. These results indicated that while reflective pondering may be triggered by and lead to negative affect in the short term, by providing effective problem solving, it can lead to decreased negative affect in the long term.

Joorman et al. (37) argued that reflective pondering and brooding can maintain each other easily in depressive individuals and this might blur the boundaries between functional and dysfunctional cognitive forms. They suggested that, individuals susceptible to depression were busy with reflective pondering, which is functional, and that reflective pondering might end with brooding, which is dysfunctional.

Olson and Kwon (38), in a short-term prospective study with college students, found that high level of brooding was associated with increased depressive symptoms in time. A similar association was not found for reflective pondering.

Miranda and Nolen-Hoeksema (39) investigated predictive value of reflective pondering and brooding on suicidal thoughts in a prospective population based study. At the beginning of the study, brooding was significantly more correlated with suicidal ideas than reflective pondering. At one-year follow-up, after controlling for suicidal ideas at the beginning and demographical variables, both reflective pondering and brooding were found to be predictive for suicidal thoughts.

In their study with 198 depressive patients, Roelofs et al. (40) found that reflective pondering and brooding were significant mediators of depressive symptoms.

Cognitive catalyst model of depressive vulnerability states that negative cognitive content is associated with depression when it is kept in mind by rumination, but in the absence of rumination it has little effect on depression. According to the model, rumination is associated with depression in context of negative cognitive content, but harmless when there is no negative cognitive content. Model also suggests that

negative cognitive content of the individual prevents him to get away from rumination, which is dysfunctional (11). Ciesla and Roberts (10) argued that functionality of reflective pondering depends on the presence of negative cognitions. Ciesla and associates (11), stated that while reflective pondering was not directly associated with depression, by interacting with stress and negative attribution style, it was a predictor of high levels of depression in time.

In our study, both reflective pondering and brooding were correlated with depression. Positive correlation of brooding with depression and prediction of depression by brooding are consistent with the literature. When evaluated cross-sectionally, reflective pondering seems to be an effective strategy to cope with depressive situations. In our study, reflective pondering was positively correlated and predicted depression. It is suggested in literature that depressive affect and reflective pondering can trigger each other. Using reflective pondering as a coping mechanism for depression may be emerging in time. Since our study was not prospective, we could not evaluate reflective pondering cross-sectionally. Literature shows that factors like clinical nature of the sample and measures can change assessment of reflective pondering. Since our sample consisted of patients with depression, it can be argued that reflective pondering is not a protective coping strategy for people experiencing a depressive episode.

Participants in our study had clinical depression. In

spite of this, most of the patients were on drug treatment and there was an improvement of depressive symptoms in some of the patients. This might lead to a change in cognitive content of the patients. Repetition of our study with patients who did not have drug treatment may change the results. Besides, we did not evaluate Axis II diagnosis in our study. This might also effect the results. Another factor which might effect the results was the use of self-reports.

We found perfectionist attitude, reflective pondering and brooding as predictors of depression level in patients with major depression. According to the model, while reflective pondering and brooding were predictors of depression, not consistent with the literature, perfectionist attitude was protective. It may not be right to conclude that dysfunctional attitudes are not associated with depression based on the results of a single study. On the other hand, our results draw attention to the key role of rumination on depression. During cognitive behavioral therapy practice, evaluation of and using techniques to decrease ruminative responses must be targeted in the psychotherapy of depression.

Our study was cross-sectional and it did not include stressful life events and affect triggering techniques in order to test diathesis-stress model. It may be useful to conduct prospective studies to test cognitive catalyst model of depressive vulnerability, including factors which can be associated with rumination.

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