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The Mediating Role of Repetitive Negative Thinking in Relationship Between Negative Perfectionism and Severity of Anxiety Symptoms

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Abstract

Background: Anxiety disorders which influence physical and psychological strength and the quality of individual and social life are afflicting great numbers of people both in the modern developed societies and in underdeveloped ones. As two cases of transdiagnostic factors influencing a wide range of psychological disorders, especially anxiety disorders, repetitive thinking (RT) and perfectionism are now receiving greater attention from psychologists and psychotherapists.
Objectives: The current study was an attempt to investigate the mediating role of RT in predicting the relationship between perfectionism and severity of anxiety.
Materials and Methods: For this purpose, 385 students of Azerbaijan Shahid Madani University were selected using cluster random sampling and evaluated through the three inventories of depression and anxiety symptoms, repetitive thinking questionnaire (RTQ) and perfectionism questionnaires in 2015. Data were analyzed using SPSS software and hierarchical regression analysis.
Results: Findings suggested that there were correlations among three variables of perfectionism, RT and anxiety; results also revealed that RT played a significant mediating role in predicting the relationship between perfectionism and anxiety.
Conclusions: These findings can be an effective step toward designing plans to prevent different emotional disorders and treatment protocols.

Keywords: Anxiety, Perfectionism, Repetitive Negative Thinking, Transdiagnosis

1. Background

In a given year, more people in the United States meet criteria for an anxiety disorder diagnosis (18% of the population) than any other mental health disorder (1). Anxiety disorders are predictive of poor physical health and a poorer quality of life (2). Additionally, the economic impact of anxiety is staggering (e.g. treatment costs and lost workplace productivity), with costs estimated at over 42 billion dollars per year in the USA (3). Due to the severe human suffering and substantial economic burden associated with anxiety disorders, researchers spend a lot of time to identify risk and resiliency factors for anxiety pathology in hope of reducing or ameliorating these negative outcomes.

Perfectionism is a multidimensional personality trait characterized by exceedingly high standards of performance (4). Positive perfectionism (PP) refers to the cognitions and behaviors directed towards achieving high-level goals as driven by positive reinforcement and a desire for success, whereas negative perfectionism (NP) refers to the ones driven by negative reinforcement and a fear of failure. PP and NP form a dual process model of perfectionism (5). Positive perfectionisms defined as perfectionistic behavior driven by the desire to achieve favorable outcomes (e.g. achieving high standard for one's pleasure), while NP is perfectionistic behavior driven by the goal to prevent adverse consequences (e.g. achieving high standard to avoid disapproval from others). Consistent with this model, research demonstrated the differential roles of positive and NP using the positive and negative perfectionism scale (PANPS) whereby NP is associated with more psychopathology among clinical and non-clinical groups (6).

Repetitive negative thinking (RNT), defined as a perseverative and abstract focus on negative aspects of one's experience that is experienced as difficult to control is a transdiagnostic process associated with poor inhibitory control and anxiety and mood psychopathology (7). Indeed, the content of symptoms across individuals may differ (e.g. obsessive compulsive disorder (OCD), depression and anxiety), but this more general process may be more closely associated with impairments in inhibitory control, representing a basic vulnerability that may be activated in individuals who manifest symptoms. According to the investigations in Iran, after depression, anxiety with an outbreak of 2.3% is the second place in the classification of psychological disorders and approximately 20.8% of the population has depression symptoms (8).

Study of the related literature demonstrated that RNT is the main transdiagnostic factor in more than 13 diagnostic levels such as depression, anxiety, sleep disorder, eating disorder, drug abuse and schizophrenia (9). Besides, the role of perfectionism in disorders such as eating disorder (10, 11), depression (11), anxiety (12) and suicide (13) is established, too.

Kung and Cha (14) in their study showed that types of perfectionism influence individuals' perception of stressful situation. Another study (15) demonstrated that RNT is accompanied by anxiety and depression in students, and by anxiety, depression and rumination in patients. Besides investigating the common and distinctive characteristics of rumination and worry, Fresco, Frankel, Mennin, Turk and Heimberg (16) studied cognitive production in negative emotion states, too. They demonstrated that despite their points of departure, those two actors had a high rate of comorbidity with anxiety and depression.

Flett et al. (17) investigated the role of self-oriented perfectionism, anxiety and depression in adults. The results indicated that although perfectionism is associated with neuroticism, there was a strong association between perfectionism and anxiety. Results of a study on RNT, mindfulness and perfectionism (18) demonstrated that socially-prescribed perfectionism is associated with high levels of negative emotions, depression, anxiety and tension. The strongest independent factors of increasing perfectionism, RNT and distress were mindfulness factors such as informed performance, not judging inner experiences and, at a lower level, lack of reaction to inner experiences. Besides, anxiety and rumination mediated the relationship between socially-prescribed perfectionism and negative emotions. Macedo et al. (19) in their study demonstrated that RNT strengthened the effect of perfectionism on anxiety disorders. Macedo et al. (19) demonstrated that some aspects of perfectionism were associated with RNT. Another study revealed a significant correlation between perfectionism and anxiety, which was one of the components of perfectionism (20).

In general, the results of the current study indicated that the two factors of perfectionism and RNT can increase an individual's vulnerability to psychological disorders such as depression and be an impediment to treatment and recovery. Evidence shows that eliminating perfectionism and RNT speeds up the treatment process (21). Therefore, considering the fact that previous studies paid scant attention to the role of comorbid transdiagnostic factors in anxiety disorders, the present study attempted to fill this gap and complete the findings of the previous studies by investigating the mediating role of repetitive negative thoughts in predicting the relationship between NP and the severity of anxiety symptoms.

2. Objectives

By reflecting on the literature and considering the fact that transdiagnostic factors of perfectionism and RNT are caused by the individual's illogical beliefs (22, 23), the current study indicated a correlation between perfectionism and RNT and also a significant relationship between these two transdiagnostic factors and anxiety. It appears that these two factors can predict anxiety symptoms. Therefore, the current study aimed to investigate these relationships, predict anxiety through the aspects of NP and RT, and examine the mediating role of RNT in the relationship between anxiety and perfectionism.

3. Materials and Methods

To test the proposed hypothesis, the sample size was determined based on the Morgan sampling table, and 400 students from the 6170 statistical population of different levels of Azerbaijan Shahid Madani University were selected by single stage cluster random sampling method in 2015. Students were assured of confidentiality of information and after signing the informed consent; they were enrolled into the current study. The questionnaires were distributed among the students with different orders and collected after being filled out; only 385 questionnaires were assessed after eliminating invalid questionnaires. Subjects were the students with the mean age of 23 years from three levels of bachelor, master and PhD of all fields. Inclusion criteria of the research were educating during academic year of 2014 - 15, being interested and volunteer to participate in the research and the exclusion criteria were having special psychological disorder and being under drug and non-drug treatments due to psychological problems. Given that the aim of the current study was non-clinical subjects, students with psychological disorders were excluded from the study.

3.1. Tools

The inventory of depression and anxiety symptoms (25) (IDAS) is a factor-analytically derived, multidimensional inventory that uses a 5-point Likert-type scale (1 = not at all to 5 = extremely) to assess the current symptoms. The current study focused on symptoms of psychopathology related to traumatic stress including general depression, suicidality, panic, posttraumatic stress and well-being subscales, experienced in the past two-weeks. The IDAS demonstrated strong internal consistency, test-retest reliability, and good convergent and discriminant validity with respect to formal diagnostic and self-report symptom measures in multiple populations (Watson, O'Hara, Simms, Kotov and Chmielewski et al.). Internal consistency of IDAS

sub-scale scores were good to excellent (Cronbach's alpha = 0.79 to 0.93), consistent with the past works (24). The alpha coefficient of this scale was 0.95. It should be noted that the current study used this inventory for the first time in Iran.

The perfectionism inventory (25) was a 59-item questionnaire used to test the multidimensional aspects of perfectionism. The two types of perfectionism each included four subscales. Conscientious perfectionism (CP) is considered as an adaptive form of perfectionism and includes high standards for others, organization, planfulness and striving for excellence. Self-evaluative perfectionism (SEP) is considered as maladaptive perfectionism, and includes concern over mistakes, need for approval, perceived parental pressure and rumination. The scores are based on a 5-point scale (1 = strongly disagree; 5 = strongly agree). Hill et al. (26) reported that the internal consistency was high, ranging from 0.83 to 0.91 for all of the subscales. The questionnaire was standardized in Iran and factor analysis of the questionnaire showed six factors, and the number of items was reduced to 51 items (26). The alpha coefficient of this scale was 0.92.

Repetitive thinking questionnaire (RTQ) is a measure of repetitive thinking (RT) explained by McEvoy et al. (27). The test contained 31 items, that the majority of them (n = 27) reflected various aspects of repetitive negative thinking (RNT) and four items are about absence of repetitive thinking (ART). Cronbach's alpha suggested that internal consistency was excellent for the RNT scale (alpha = 0.89) and good for the ART scale (alpha = 0.62). This questionnaire was standardized in Iran by Khaleghi, Khaleghi, Shahriary and Ganjdanesh (28).

4. Results

Table 1. The Mean and Standard Deviation of Variables

Variables	Males, Mean (SD)	Females, Mean (SD)
Anxiety	34.92 (13.06)	32.38 (12.21)

As demonstrated in the Table 1, it was reported that anxiety was higher in the males group (anxiety mean = 34.92) than the females group (anxiety mean = 32.38).

Regarding the correlation among perfectionism, RNT and anxiety, Table 2 showed a strong and significant correlation among the three variables and the correlation between negative self-perception and RNT was the strongest ($P < 0.67$).

Hierarchical regression was used to predict anxiety through the independent variables of NP and RT and by examining the mediating role of RNT in the relationship between anxiety and perfectionism.

Regarding the standard coefficients of the hierarchical regression model regarding NP and RNT, Table 3 showed that in the first place, NP accounted for 25.3% of the anxiety variance, and, in the second place, perfectionism and RNT together accounted for 31.4% of the variance. The entrance of repetitive negative thoughts increased the prediction coefficient by 6.1% in this equation. To have a mediating role, a variable should have the following conditions: 1) There should be a significant correlation between the mediating variable and the independent variable, and 2) There should be a significant relationship between the independent and dependent variables. By investigating the effect of the mediating variable, the relationship between the independent and dependent variables is undermined. The results confirmed these three presuppositions. Therefore, the model can be deemed a strong predictor for anxiety disorders.

5. Discussion

The current study attempted to investigate the mediating role of RNT to predict the relationship between anxiety and perfectionism. Data analysis demonstrated a significant relationship between anxiety and all the three aspects of NP. It is taken for granted that when goals become necessities and desires turn into wishes (29) and the individuals set goals beyond their capabilities, the result is anxiety and intellectual tensions. Negative perfectionists constantly fear failure and regard the environment as threatening and non-supportive (30). This appears to lead to anxiety in such individuals. Another common feature found among anxious and perfectionist individuals in the current study was fear of failure and criticism. Considering the fact that the maladaptive perfectionists seek superiority rather than progress, they have to do everything in a perfect way and failure to achieve the goal of excellence causes anxiety, depression and feeling of guilt in them (10). Another commonality which appears to mediate this correlation is failure to take criticism. Perfectionists strive to display no weakness by seeking perfection; therefore, they take absolutely no criticism and are sensitive to their own mistakes (6). Such individuals, however, evaluate themselves in a critical way (30, 31). A similar situation can be found in anxious individuals, especially those with social anxieties. These findings are in line with the finding of Flett et al. (17).

The significant positive relationship found between the two factors of RNT and anxiety means that increase in either factor is accompanied by increase in the other. Extensive evidence shows that RNT occurs when the individ-

Table 2. Correlations Among Negative Perfectionism Dimensions, Repetitive Negative Thinking and Anxiety

	Anxiety	Negative Attitude	Perceived Parental Pressure	High Standards for Others	Repetitive Negative Thinking
Anxiety	1				
Negative attitude	0.49[a]	1			
Perceived parental pressure	0.21[a]	0.54[a]	1		
High standards for others	0.18[a]	0.49[a]	0.67[a]	1	
Repetitive negative thinking	0.51[a]	0.67[a]	0.39[a]	0.36[a]	1

[a] P< 0.000

Table 3. Standard Coefficients of the Hierarchical Regression Model Regarding Negative Perfectionism and Repetitive Negative Thinking[a]

Stage	Variable	B	β	T	Sig	F (df)	R	R^2
1	Negative attitude	0.51	0.56	0.92	0.000	42.71 (3)	0.50	0.25
	Parental pressure	-0.13	-0.05	-1.08	NS			
	High standards for others	-0.24	-0.07	1.33	NS			
2	Negative attitude	0.32	0.35	5.33	0.000	43.07 (4)	0.56	0.31
	Parental pressure	-0.16	0.06	-0.34	NS			
	High standards for others	-0.27	-0.08	-0.59	NS			
	Repetitive negative thinking	0.20	0.33	5.76	0.000			

[a] NS, no significance

ual is experiencing distress and anxiety. Therefore, anxious people experience such thoughts more than normal people (32). That is why such thoughts increase the individual's vulnerability to anxiety and depression (33). On the other hand, Wells et al. (34) in their study maintained that decrease in repetitive thoughts is accompanied by decreased anxiety and depression. The relationship found between repetitive thoughts and anxiety in the present study was in line with the findings of Fresco et al. (16).

A factor that can influence mediation models is the existence of a significant correlation between the mediating variable and independent variable. The results of the current study are indicative of the presence of a significant correlation between perfectionism and RNT. One of the distinctive characteristics of perfectionists is their high preoccupation with progress, superiority, and continued activity in their education and business. This is a characteristic found in different forms in individuals with RNT and rumination. Many individuals with maladaptive perfectionism harbor repetitive thinking about failures and many ruminators are inflicted with preoccupations and concentration on mistakes, failure and inabilities. Some studies are indicative of the fact that the destructive effect of perfectionism on many emotional disorders is the result of the mediation of RNT between these two factors (19). Hill et al. (25) introduced a type of rumination as one of the components of perfectionism. Therefore, this finding was in line with the findings of Short and Mazmanian (18) and Macedo et al. (19).

The current study demonstrated that RNT mediate the relationship between perfectionism and anxiety. In other words, RNT, alone and independently of perfectionism, causes a degree of anxiety. To confirm this finding, it can be argued that if perfectionists do not satisfactorily meet their perfectionistic demands, they may experience intensified anxiety as a result of the invasion of RNT.

One of the limitations of the current study was the use of perfectionism questionnaire of Hill et al. (2004) (25), since this questionnaire is normalized for the teenagers in Iran (26). However, it appears that the alpha coefficient obtained by this questionnaire in the present study can justify the possibility of using this questionnaire for the youth. Also, the current study focused on non-clinical group and the student population that were likely to have more perfectionism tendency due to higher progress motivation; therefore, it may reduce the generalization of

the study to other communities and it is suggested that wider spectrum of population be assessed in future studies. The future studies are also recommended to investigate the intermediary role of achievement motivation and self-esteem as significant factors related to both perfectionism and anxiety. According to the research literature of this field, it seems that these two variables are regulator and effective intermediate and interactive in psychoanalysis. Generally, findings of the current study and similar future studies can be an effective step toward designing plans to prevent different emotional disorders and treatment protocols. Another limitation of the present study was to select the students as members of the sample that should be considered to generalize the results to other groups, and it is recommended that future studies be implemented on other groups especially among vulnerable groups.

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Footnotes

Authors' Contribution: Reza Abdi conceived and designed the evaluation. Afsaneh Joorbonyan collected the data. Reza Abdi and Afsaneh Joorbonyan interpreted the data and drafted the manuscript. Reza Abdi and Gholamreza Chalabianloo revised the manuscript critically for the important intellectual content. Reza Abdi and Afsaneh Joorbonyan performed the statistical analysis. Reza Abdi and Gholamreza Chalabianloo supervised the study. All authors read and approved the final manuscript.

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References

1. Kessler RC. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch General Psychiatr.* 2005;**62**:617–27. doi: 10.1001/archpsyc.62.6.617.
2. Hoffman DL, Dukes EM, Wittchen HU. Human and economic burden of generalized anxiety disorder. *Depress Anxiety.* 2008;**25**(1):72–90. doi: 10.1002/da.20257. [PubMed: 17146763].
3. Kessler RC, Paul E. Greenberg.The economic burden of anxiety and stress disorders. *Neuropsychopharmacol.* 2002;**67**:982–92.
4. Hewitt PL, Gordon L. Flett. "Perfectionism in the self and social contexts: conceptualization, assessment, and association with psychopathology. *J Personality Social Psychol.* 1991;**60**(3):456.
5. Slade PD, Owens RG. A dual process model of perfectionism based on reinforcement theory. *Behav Modif.* 1998;**22**(3):372–90. [PubMed: 9722475].
6. Haase AM, Prapavessis H, Owens RG. Perfectionism, social physique anxiety and disordered eating: A comparison of male and female elite athletes. *Psychol Sport Exercise.* 2002;**3**(3):209–22. doi: 10.1016/S1469-0292(01)00018-8.
7. Hallion LS, Ruscio AM, Jha AP. Fractionating the role of executive control in control over worry: a preliminary investigation. *Behav Res Ther.* 2014;**54**:1–6. doi: 10.1016/j.brat.2013.12.002. [PubMed: 24440576].
8. Noorbala A, Bagheriyazdi MK, Yasemi MT. Looking at the profile of mental health in Iran [in Persian]. Iran, Tehran: Ministry of Health and Medical Education; 2001.
9. Benson E. The many faces of perfectionism. *Monitor Psychol.* 2003;**34**(10):18.
10. Bento C, Pereira AT, Maia B, Marques M, Soares MJ, Bos S, et al. Perfectionism and eating behaviour in Portuguese adolescents. *Eur Eat Disord Rev.* 2010;**18**(4):328–37. doi: 10.1002/erv.981. [PubMed: 20589751].
11. Pereira AT, Bos SC, Marques M, Maia BR, Soares MJ, Valente J, et al. The postpartum depression screening scale: is it valid to screen for antenatal depression?. *Arch Womens Ment Health.* 2011;**14**(3):227–38. doi: 10.1007/s00737-010-0178-y. [PubMed: 20645114].
12. Amaral AP. The portuguese frost mutidimensional perfectionism scale and mood states in portuguese college students. *European Psychiatr.* 2013;**28**:1. doi: 10.1016/S0924-9338(13)76995-5.
13. O'Connor RC. The relations between perfectionism and suicidality: a systematic review. *Suicide Life Threat Behav.* 2007;**37**(6):698–714. doi: 10.1521/suli.2007.37.6.698. [PubMed: 18275376].
14. Kung CSJ, Carina KYC. Differential roles of positive and negative perfectionism in predicting occupational eustress and distress. *Personality and Individual Differences.* 2014;**58**:76–81. doi: 10.1016/j.paid.2013.10.011.
15. Alden LE, Andrew GR, Mellings T. Perfectionism in the context of social fears: Toward a two-component model. 2002.
16. Fresco DM, Frankel AN, Mennin DS, et al. Distinct and overlapping features of rumination and worry: The relationship of cognitive production to negative affective states. *Cognitive Ther Res.* 2002;**26**(2):179–88. doi: 10.1023/A:1014517718949.
17. Flett GL, Paul LH, Dennis GD. Self-oriented perfectionism, neuroticism and anxiety. *Personality and Individual Differences.* 1989;**10**(7):731–5. doi: 10.1016/0191-8869(89)90119-0.
18. Short MM, Mazmanian D. Perfectionism and negative repetitive thoughts: Examining a multiple mediator model in relation to mindfulness. *Personality and Individual Differences.* 2013;**55**(6):716–21.
19. Macedo A. Repetitive negative thinking mediates the association between perfectionism and psychological distress. *Personality and Individual Differences.* 2015;**72**:220–4. doi: 10.1016/j.paid.2014.08.024.
20. Gruber J, Eidelman P, Harvey AG. Transdiagnostic emotion regulation processes in bipolar disorder and insomnia. *Behav Res Ther.* 2008;**46**(9):1096–100. doi: 10.1016/j.brat.2008.05.004. [PubMed: 18684436].
21. Monika K, Douilliez C. Perfectionnisme inadapté, pensées répétitives non constructives et réactivité émotionnelle. *J De Thérapie Comportementale Et Cognitive.* 2014;**24**(2):70–7. doi: 10.1016/j.jtcc.2014.03.001.
22. Flett GL. Perfectionism cognitions, rumination, and psychological distress. *J Rational-Emotive Cognitive-Behav Ther.* 2002;**20**(1):33–47. doi: 10.1023/A:1015128904007.
23. Roelofs J, Huibers M, Peeters F, Arntz A, van Os J. Rumination and worrying as possible mediators in the relation between neuroticism and symptoms of depression and anxiety in clinically depressed individuals. *Behav Res Ther.* 2008;**46**(12):1283–9. doi: 10.1016/j.brat.2008.10.002. [PubMed: 19006785].
24. Watson D. Further validation of the IDAS: Evidence of convergent, discriminant, criterion, and incremental validity. *Psychological Assessment.* 2008;**20**(3):248.
25. Hill RW, Huelsman TJ, Furr RM, Kibler J, Vicente BB, Kennedy C. A new measure of perfectionism: the Perfectionism Inventory. *J Pers Assess.* 2004;**82**(1):80–91. doi: 10.1207/s15327752jpa8201_13. [PubMed: 14979837].

26. Jamshidi B, Razmi MR, Haghighat S, Samani S. The relationship between family cohesion and flexibility with dimensions of perfectionism. [In persian]. *Iran J Psychiatr Clin Psychol.* 2008;**14**:199–205.
27. McEvoy PM, Mahoney AE, Moulds ML. Are worry, rumination, and post-event processing one and the same? Development of the repetitive thinking questionnaire. *J Anxiety Disord.* 2010;**24**(5):509–19. doi: 10.1016/j.janxdis.2010.03.008. [PubMed: 20409676].
28. Khaleghi S, Khaleghi R, Shahriary M, Ganjdanesh Y. The Repetitive Thinking Questionnaire : Psychometric properties in Iraninan Students , and Relationship with depression, Anxiety and Social Anxiety. *Recent Researches Modern Med.* 2011:132–6.
29. Barrow JC, Carol AM. Group interventions with perfectionistic thinking. *Personnel and Guidance J.* 1983;**61**(10):612–5. doi: 10.1111/j.2164-4918.1983.tb00008.x.
30. Stoeber J, Yang H. Perfectionism and emotional reactions to perfect and flawed achievements: Satisfaction and pride only when perfect. *Personality and Individual Differences.* 2010;**49**(3):246–51. doi: 10.1016/j.paid.2010.03.044.
31. Rice KG, Jeffrey SA, Robert BS. Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *J Counseling Psychol.* 1998;**45**(3):304.
32. McEvoy PM, Mahoney AE. Intolerance of uncertainty and negative metacognitive beliefs as transdiagnostic mediators of repetitive negative thinking in a clinical sample with anxiety disorders. *J Anxiety Disord.* 2013;**27**(2):216–24. doi: 10.1016/j.janxdis.2013.01.006. [PubMed: 23474912].
33. Ruscio AM, Seitchik AE, Gentes EL, Jones JD, Hallion LS. Perseverative thought: a robust predictor of response to emotional challenge in generalized anxiety disorder and major depressive disorder. *Behav Res Ther.* 2011;**49**(12):867–74. doi: 10.1016/j.brat.2011.10.001. [PubMed: 22030295].
34. Wells A, Colbear JS. Treating posttraumatic stress disorder with metacognitive therapy: a preliminary controlled trial. *J Clin Psychol.* 2012;**68**(4):373–81. doi: 10.1002/jclp.20871. [PubMed: 24469928].