


The Role of Temperament, Rumination, Cognitive Flexibility & Trait Anxiety in Predicting Depressive Mood

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Abstract

Depression is one of the most common disorders that different factors have an etiological function in the occurrence and persistence of the disorder. The aim of the study was to investigate the role of the temperament, rumination, cognitive flexibility, and trait anxiety in predicting the depressed mood. The statistical population included all students of Azarbaijan Shahid Madani University. 322 students were selected by a multi-stage cluster sampling method. Data were collected by using the Beck Depression Inventory, Spielberger trait Anxiety Inventory, Rumination Response Scale, and Cognitive Flexibility Inventory. The results showed that harm avoidance, self-direction, and persistence have significant correlations with depression. Also, in predicting depression mood, rumination and cognitive flexibility had a mediating role, and temperament and trait anxiety play a predictive role. In other words, increasing rumination and decreasing cognitive flexibility as mediating variables increase the role of temperament and trait anxiety in predicting depression mood.

Keywords: Depression; Cognitive flexibility, Rumination, Temperament, Trait anxiety.

Introduction

Depression is one of the most common psychiatric disorders that is associated with long periods of low mood, sadness, pessimism and dysfunction of the neuro-vegetative system (Mahali, et al., 2020). Studies have clearly shown the relationship between high harm avoidance, self-direction, persistence, self-transcendence, and low cooperation with depression (Dolcini-Catania, et al., 2020). In addition to personality factors, variables such as mental rumination and cognitive flexibility also play a role in depression. Mental rumination is a major factor in the persistence and recurrence of depression. Recent research has shown that rumination plays a mediating role in the association between negative emotion, attention control, depression, and anxiety (Riley, et al., 2019). Cognitive flexibility involves an executive function that refers to the simultaneous consideration of several tasks and the distinction between them in response to environmental changes (Lindner, et al., 2016). Individuals with less flexibility are more likely to be depressed (Park, et al, 2015). The trait of low anxiety is associated with high flexibility (Weger and Sandy, 2018).

The purpose of this study was to repeat the model proposed by Wang, et al. (2019) The new model includes examining the role of temperament and anxiety traits as predictors and the mediating role of cognitive flexibility and cumulative rumination as mediators in predicting depressed mood.

Method

In a correlational design based on structural equation, 380 students for Azarbaijan Shahid Madani University were selected through cluster sampling procedure and completed the inventories. Finally, 320 inventories were fully answered.

Tools

Beck Depression Inventory-II: is the 21-item scale that developed based on the fourth diagnostic and statistical guide for mental disorders (Rahimi, 2014). Cronbach's alpha coefficient is 0.93 and retest coefficient is 0.93 in the American sample (quoted by Rahimi, 2014).

Spielberger Hidden Anxiety Inventory: is developed by Spielberger, et al., Cronbach's alpha coefficient of state and trait anxiety inventory were 0.92 and 0.90, respectively, and retest coefficients were 0.62 and 0.68, respectively (Spielberger et al., 1983).

Temperament Character Inventory: is developed by Cloninger, et al. (1994) based on the theory of biological-psychological systems. It has four temperament subscales including novelty seeking, harm avoidance, reward dependence and persistence, and three character subscales including cooperation, self-direction and self-transcendence. Cronbach's alpha of the total inventory was 0.68 (Alonso, et al., 2008).

Ruminant response style inventory: It has 22 items answered in 4-choice likert scale. Ruminant response style inventory is one of the subscales of Nolen-Hoeksema and Morrow (1991) response style inventory. Yook, et al. (2010) reported an alpha coefficient of 0.90 and a retest validity of 0.68.

Recognition Flexibility Inventory: It has developed by Dennis and Vander Wal (2010) in the form of twenty items to assess a type of cognitive flexibility that is essential in a person's success in challenging and replacing inefficient ideas with efficient ones. Dennis and Vander Wal (2010) reported Cronbach's alpha for the whole scale, controllability perception and perception of different options 0.91, 0.91 and 0.84, respectively.

Results

The findings indicate that the most positive correlations between the dimensions of temperament and depression are related to harm avoidance, self-direction and persistence. Also, rumination, perception of different options and cover anxiety are positively related to depression, but controllability is negatively related to depression.

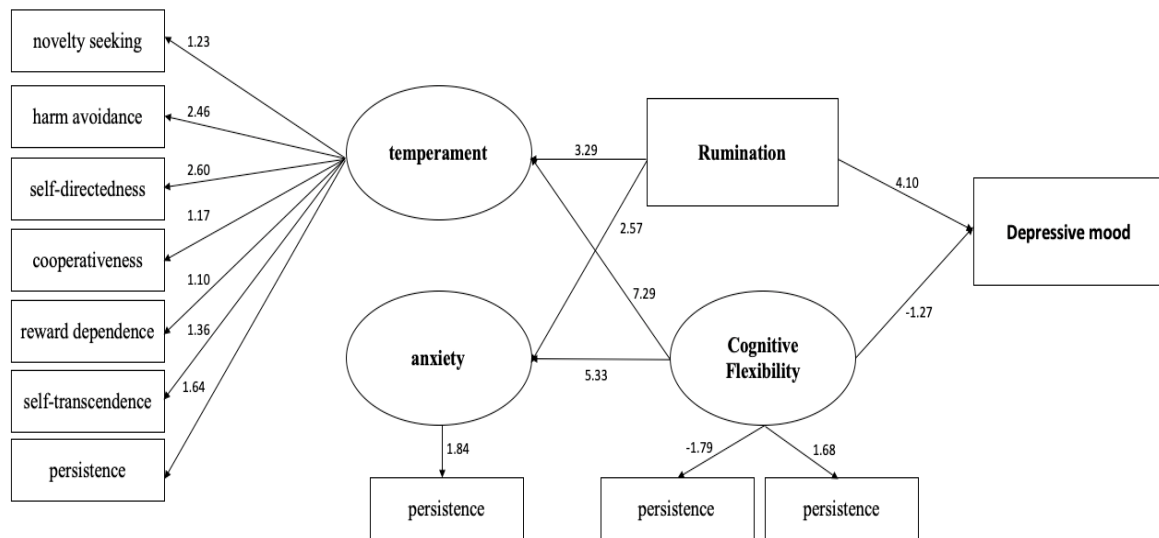


Figure 1- proposed model in significant state (t-value)

Figure 1 shows the path analysis model using the significance model (t-value) obtained by Emus software. The results show that the direct effect of temperament on mental rumination (C.R = 3.29 and $P < 0.001$) and cognitive flexibility (CR = 2.57 and $P < 0.001$) as well as the direct effect of anxiety on mental rumination (CR = 7.29 and $P < 0.001$) and cognitive flexibility (CR = 5.33 and $P < 0.001$) are positively significant. The direct effect of mental rumination on the depression (CR = 4.10 and $P < 0.001$) is positive and flexibility on the depression (CR = 1.27 and $P < 0.001$) is negative. According to these results, all routes of the final model were confirmed. In other words, these findings suggest that temperament and anxiety through mediating role of mental rumination and cognitive flexibility could explain depression.

Discussion

According to the findings, harm avoidance, self-direction and persistence played the most important role in predicting the depression. Temperament plays a predictive role for mental rumination, as people with mental rumination report more depression, thus the probability of depression is increasing when people will have faced with negative events or moods. The present study suggests a relationship between mental rumination and depression. Mental rumination has a negative relationship with self-direction. People with low self-esteem are often unreliable, fragile, inefficient, and weak. These issues, perhaps due to the lack of appropriate coping strategies, make a person prone to mental rumination and subsequent depression. The present study suggested that temperament is associated with cognitive flexibility. Cognitive flexibility reduces the depression by simultaneously considering different situations and situations and then responding to environmental stimuli. The results indicate that high anxiety trait is an important factor in creating depression mediated by cognitive flexibility. In general, if a person has a predisposed temperament and a high level of anxiety, increased mental rumination and decreased cognitive flexibility, increase the likelihood of depression.

References

- Alonso, P., Menchón, J. M., Jiménez, S., Segalàs, J., Mataix-Cols, D., Jaurrieta, N., Labad, J., Vallejo, J., Cardoner, N. and Pujol, J.(2008). Personality dimensions in obsessive–compulsive disorder: Relation to clinical variables. *Psychiatry Research*, 157(1-3), 159-168.
- Cloninger, C. R., Przybeck, T. R., Svrakic, D. M., and Wetzel, R. D.(1994). *The Temperament and Character Inventory(TCI): A guide to its development and use*. Washington: Center for Psychobiology of Personality
- Dennis, J.P. & VanderWall, J.S.(2010).The cognitive flexibility inventory: Instrument development and estimates of reliability and validity. *Cognitive Therapy & Research*, 34(3), 241-253
- Dolcini-Catania, L. G., Byrne, M. L., Whittle, S., Schwartz, O., Simmons, J. G., and Allen, N. B.(2020). Temperament and symptom pathways to the development of adolescent depression. *Journal of Abnormal Child Psychology*, 48(6), 839–849.
- Lindner, P., Carlbring, P., Flodman, E., Hebert, A., Poysti, S., Hagkvist, F., Johansson, R., Westin, V., Berger, T., and Andersson, G. (2016). Does cognitive flexibility predict treatment gains in Internet-delivered psychological treatment of social anxiety disorder, depression, or tinnitus? *Peer J*, 4, e1934.
- Mahali, S. C., Beshai, S., Feeney, J. R., and Mishra, S.(2020). Associations of negative cognitions, emotional regulation, and depression symptoms across four continents: International support for the cognitive model of depression. *BMC Psychiatry*, 20(1), 1-12.
- Nolen-Hoeksema, S., and Morrow, J.(1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: the 1989 Loma Prieta Earthquake. *Journal of Personality and Social Psychology*, 61(1), 115-121.
- Park, M., Chang, E. R., & You, S.(2015). Protective role of coping flexibility in PTSD and depressive symptoms following trauma. *Personality and Individual Differences*, 82(1), 102-106.
- Rahimi,Ch.(2014).Application of Beck depression inventori-2 in Iranian students. *Journal of Clinical Psychology & Personality*, 10(1),173-188.(in Persian).
- Riley, K. E., Cruess, D. G., Park, C. L., Tigershtrom, A., and Laurenceau, J. P. (2019). Anxiety and depression predict the paths through which rumination acts on behavior: A daily diary study. *Journal of Social and Clinical Psychology*, 38(5), 409-426.
- Spielberger, C.D., Gorsuch, R. L., Lushene, R.Vagg, P.R., & Jacobs, G. A.(1983). *Manual for the state – trait anxiety inventory*. Palo Alto, CA: consulting psychologists press.
- Wang, T., Li, M., Xu, S., Liu, B., Wu, T., Lu, F., Xie, J., Peng, L. & Wang, J. (2019). Relations between trait anxiety and depression: A mediated moderation model. *Journal of affective disorders*, 244, 217-222.
- Weger, M., and Sandi, C.(2018). High anxiety trait: a vulnerable phenotype for stress-induced depression. *Neuroscience and Biobehavioral Reviews*, 87(1), 27-37.
- Yook, K., Kim, K. H., Suh, S. Y., and Lee, K. S.(2010). Intolerance of uncertainty, worry, and rumination in major depressive disorder and generalized anxiety disorder. *Journal of Anxiety Disorders*, 24(6), 623-628.

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Conflicts of interest

Authors found no conflict of interests.



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