



Research paper

The Mediating Role of Mental Rumination in the Relationship between Alexithymia, Impulsivity, Distress Tolerance, and Self-criticism with Self-injury

Faraji, Robab ¹; Babapour Khairuddin, Jalil ²; Bakhshipour Rodsari, Abbas³

1. Corresponding Author: Ph.D. Student. Department of Psychology, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran robabfaraji@gmail.com
2. Professor, Department of Psychology, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran. babapour@yahoo.com
3. professor, Department of Psychology, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran abbas.bakhshipour@gmail.com

Abstract

The study aimed to investigate the mediating role of mental rumination in the relationship between alexithymia, impulsivity, distress tolerance, and self-criticism with self-injury. The current research was a type of correlational study. The research population consisted of all students in the first year of secondary school in Ardabil city in the academic year of 2021-2022, out of which 626 people were selected as a sample by multi-stage cluster sampling method. Research questionnaires included: a self-injury report questionnaire, Toronto Alexithymia Scale-20, Rumination Response Scale, Distress Tolerance Questionnaire, Impulsivity Scale, and the scale of self-criticism levels. The findings showed that alexithymia, impulsivity, and self-criticism can, directly and indirectly, predict self-injury through the mediation of mental rumination. It can be concluded that teaching emotional control skills and treatment of mental rumination can be useful in reducing self-injury in teenagers.

Keywords: Alexithymia, impulsivity, mental rumination, self-criticism, self-injury

Introduction

In recent years, behaviors related to self-injury have been the focus of mental health researchers. The frequency of self-injurious behaviors in adolescents ages (15-25) is higher than in other periods of life (Ahmad et al., 2023). Various factors play a role in the occurrence of self-injurious behaviors, including the role of rumination, alexithymia, self-criticism, impulsivity, and distress tolerance (Tang et al., 2022; Nagy et al., 2023; Slabbert et al., 2022). One of the most important variables that can directly affect self-injury behavior is rumination. Based on the emotional cascade model, Selby et al. (2009) When people face a negative emotional stimulus, they engage in disordered behaviors such as self-injury to distract themselves from unpleasant and ruminating thoughts. It seems that variables such as low distress tolerance interacted with rumination during the emotional cascade, leading to maintaining or intensifying the emotional cascade. However, rumination is probably not the only piece of the puzzle. The emotional cascade model also emphasizes the role of strong and negative emotions in creating self-injury. Variables such as low distress tolerance, alexithymia, and self-criticism during the emotional cascade interact with rumination and lead to maintaining or intensifying the emotional cascade. In this research, the hypothesis was the mediating role of Rumination in the relationship between self-injury, alexithymia, impulsivity, distress tolerance, and self-criticism.

Method

The present study was a descriptive correlational method. The population of this study included all students of the secondary school of Ardabil in the year 2021-2022. A multi-stage cluster sampling method was used to prepare the target sample 626 girls and boys students were selected as samples. To analyze the information, the path analysis method has been used the research data were analyzed with Spss and Lisrel software.

Tools

Inventory of Statements About Self-Injury (ISAS): This questionnaire has 39 and 2 parts. The first part of the questionnaire evaluates the frequency and the second part evaluates the performance of non-suicidal self-harming behaviors. In Iran, Safarinia et al. (2013) reported the reliability of the scale using Cronbach's alpha method of 0.76 and confirmed its face and content validity.

Toronto Alexithymia Scale (TAS-20): TAS-20 comprises 20 items across three subscales: (a) difficulty identifying feelings (DIF), (b) difficulty describing feelings (DDF), and externally orientated thinking (c) EOT. Cronbach's alpha coefficients for total alexithymia and its three subscales were reported as 0.85, 0.82, 0.75, and 0.72 respectively. In the present study, Cronbach's alpha coefficient was 0.85.

The Ruminative Response Scale (RRS): It has 22 items with 3 subscales of distraction, Reflection, and Brooding. The internal consistency of the questionnaire was reported using Cronbach's alpha coefficient of 0.94 and the test-retest correlation for the questionnaire was 0.68. Bagherinejad et al. (2009) obtained Cronbach's alpha coefficient of 0.88.

Distress Tolerance Questionnaire (DTS): The scale includes 15 items and has four subscales of Tolerance, Absorption, Assessment, and Adjustment. (Simons and Gaher, 2005). In Iran, Cronbach's alpha and overall composite reliability of the scale were 0.96 and 0.90, respectively, and the convergent validity of the scale was 0.59 (Tofangchi et al., 2022).

Barratt Impulsivity Scale (BIS): This questionnaire consists of 30 items, evaluating cognitive impulsivity, motor impulsivity, and disorganization. Javid et al. (2012) observed that this scale had desirable validity and reliability in Iran with a reliability level of 0.81.

Levels of Self-Criticism Scale (LOSC): This questionnaire contains 22 items and two subscales are comparative and internal self-criticism. The reliability coefficient was obtained using Cronbach's alpha method for subscales of 0.81 and 0.87. in the present study, Cronbach's alpha coefficient was 0.77.

Results

Route analysis was used to study the conceptual model of the research. The model is presented with model-fit indexes. The standard coefficients of the proposed model are shown in Figure (1). These coefficients show how rumination, alexithymia, impulsivity, distress tolerance, and self-criticism affect self-injury.

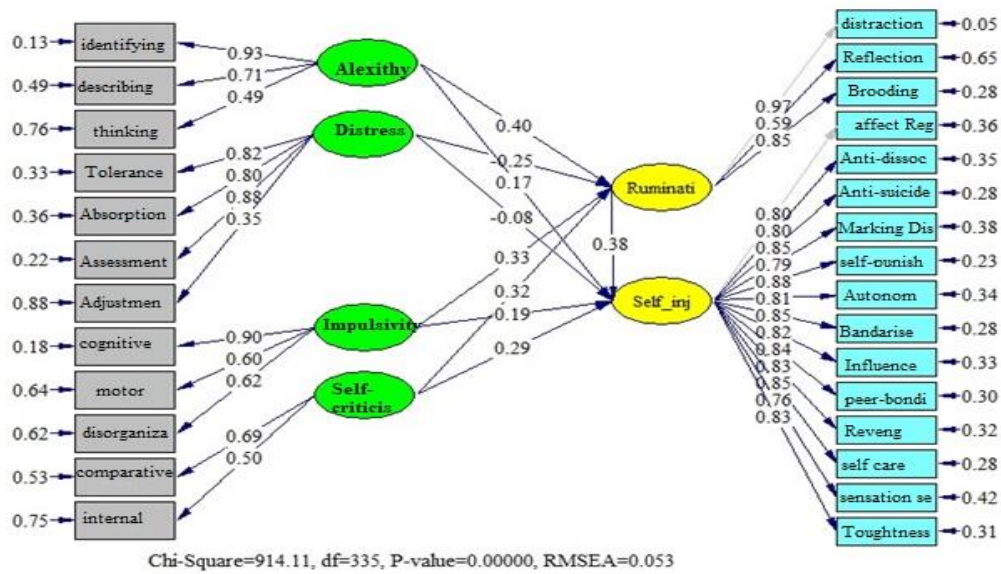


Figure (1): Standard coefficients of the Model

Indicators for fitting the model are presented in Table (1).

Table 1. Model fitting indicators

Value index	Visited amount	Accepted domain	Value index evaluating
df^2/χ	2.73	<3	suitable
RMSE	0.053	<0.08	suitable
CFI	0.92	>0.90	suitable
NFI	0.93	>0.90	suitable
GFI	0.86	>0.84	suitable

The chi-square correlation coefficient on the degree of freedom is less than 3, and the root mean-square-error (RMSE) is 0.055, which is smaller than the criterion (0.08) finally, the NFI, CFI, and GFI indicators are also more than the target (0.9). According to the obtained results, it can be said that the research model is approved in terms of meaningful and fitting indicators.

Discussion and Conclusion

The results showed that there was a relationship between Alexithymia, impulsivity, and self-criticism with self-injury through rumination. One of the harms faced by teenagers is self-injurious behavior, which is more common during adolescence. With the increase of emotional problems and their suppression, based on the emotional cascade model, the number of ruminations increases, which increases the negative mood since the ruminating person cannot reveal his feelings to others. Therefore, it is likely to be more motivated to take rash actions in response to negative situations and emotional disturbances that can cause risky behaviors such as self-injury. Among the limitations of the current research, it can be pointed out that the research tool was self-report and the research results are limited to the researched community. Identifying potential factors such as impulsivity, self-criticism, and Alexithymia allows for timely intervention and thus focused support for adolescents who are more at risk of engaging

in self-injurious behaviors. It is suggested that emotional control skills training and rumination therapy should be prioritized to reduce self-injury in teenagers.

References

- Ahmad, K., Beatson, A., Campbell, M., Hashmi, R., Keating, B. W., Mulcahy, R., ... & Wang, S. (2023). The impact of gender and age on bullying role, self-harm, and suicide: Evidence from a cohort study of Australian children. *PLoS One*, 18(1), e0278446. <https://doi.org/10.1371/journal.pone.0278446>
- Nagy, L. M., Shanahan, M. L., & Seaford, S. P. (2023). Nonsuicidal self-injury and rumination: A meta-analysis. *Journal of Clinical Psychology*, 79(1), 7-27. <https://doi.org/10.1002/jclp.23394>
- Tang, WC., Lin, MP., Wu, J.YW. et al. (2022). The mediating role of depression in the association between alexithymia and nonsuicidal self-injury in a representative sample of adolescents in Taiwan. *Child Adolesc Psychiatry Ment Health* 16, 43. <https://doi.org/10.1186/s13034-022-00477-8>
- Bagherinejad, M., Salehi Fadardi, J., Tabatabaei, SM. (2010) The relationship between rumination and depression in a sample of Iranian university of students. *Research in Clinical Psychology and Counseling*;11(1):21-38. (Text in Persian) <https://doi.org/10.22067/IJAP.V11I1.6910>
- Javid, M; Mohammadi, N, and Rahimi, Ch. (2012). Psychometric features of the 11th edition of the Persian version of the Barat Impulsivity Scale. *Psychological Methods and Models*, 2(8): 23-34. (Text in Persian) <https://dorl.net/dor/20.1001.1.22285516.1391.2.8.2.1>
- Safarina, M., Nikogufar, M., Damavandian, A. (2012). Effectiveness of dialectical behavior therapy in reducing self-injurious behaviors of juvenile delinquents residing in Tehran Correctional Center. *Quarterly Journal of Clinical Psychology Studies*, 4(15): 158-141. (Text in Persian).
- Selby, E. A., & Joiner, T. E. (2009). Cascades of emotion: The emergence of borderline personality disorder from emotional and behavioral dysregulation. *Review of General Psychology*, 13(3), 219– 229. <https://doi.org/10.1037/a001568>
- Simons, J. S., & Gaher, R. M. (2005). The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion*, 29(2): 83-102. <https://doi.org/10.1007/s11031-005-7955-3>
- Tofangchi M, Ghamarani A, Rezaei H. (2022). The Psychometric Properties of Distress Tolerance Scale (DTS) in Women with Tension-Type Headaches. *Journal of Anesthesiology and Pain*; 12 (4):34-43. (Text in Persian)

Acknowledgments

The authors are grateful to all those who have cooperated in the implementation of the research.

Funding

This research did not receive any grant from funding agencies in the public, commercial, or non- profit sectors.

Conflicts of interest

The authors declare no conflict of interest



This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-Noncommercial 4.0 International (CC BYNC4.0 license) (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).
