Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article

Does impulsivity mediate the relationship between alexithymia and aggression?

***Fahimeh Dehghani[1]; Parinaz Falahi[2]**

[1]Assistant Professor, Department of Psychology, Psychology and Educational Sciences Faculty, Yazd University, Yazd, Iran.
[2]MA. Student in General Psychology, Department of Psychology, Psychology and Educational Sciences Faculty, Yazd University, Yazd, Iran.

Abstract

Introduction: In order to reduce the harm inflicted by aggression, the antecedent of it must be identified. The previous research findings have demonstrated that alexithymia is one of these factors, but the mechanisms underlying this connection are not well-understood. The present study aimed to assess impulsivity as a mediator of the relationship between alexithymia and aggressive behavior among university students.

Materials and Methods: This study was descriptive correlational in design and the participants were 198 students from Yazd University in the academic year of 2017-2018. These students were assessed by Toronto Alexithymia Scale-20 (TAS-20), Buss-Perry Aggression Questionnaire (BPAQ), and Barratt Impulsiveness Scale (BIS). Afterwards, the data was analyzed by Structural Equation Modeling Technique (SEM) utilizing AMOS software.

Results: Analyses indicated that alexithymia and aggression were positively correlated with one another, as well as impulsivity. Analyses of mediation indicated that impulsivity partially mediated the association between alexithymia and aggression in Iranian students.

Conclusion: The results indicate that the effect of alexithymia on aggression was partially mediated by impulsivity. Hence, the future research can examine the other possible mediators.

Keywords: Aggression, Alexithymia, Impulsivity

Please cite this paper as:

Dehghani F, Falahi P. Does impulsivity mediate the relationship between alexithymia and aggression?. Journal of Fundamentals of Mental Health 2021 Jan-Feb; 23(1): 57-62.

Introduction

Nowadays, severe aggression is one of the most common and enduring social problems globally (1) and is also considered one of the chief threats to public mental health (2). Undoubtedly, the prevalence of aggression among adolescents and young people (3,4) is a source of concern for families and authorities (5). However, earlier studies have confirmed that aggression is due to different individual and social factors (6).

Having been proven to play a significant role in aggressive behaviors, alexithymia is one of these individual factors (7). Alexithymia is defined as a personality trait in which the individual has difficulty integrating their emotions, thoughts, and feelings (8). This could consequently bring about a lack of understanding for his/her emotions and an inability to identify each of them correctly (9). It is a well-known fact that our attentiveness to emotions when confronting

***Corresponding Author:**
Department of Psychology, Psychology and Educational Sciences Faculty, Yazd University, Yazd, Iran.
dehghanif@hotmail.com
Received: Feb. 11, 2020
Accepted: Sep. 02, 2020

distressing situations can prevent early and uncontrollable emotional responses (10). On this account, alexithymic persons may have a problem managing their emotions and aggressive responses when facing challenging situations (11,12). In the same vein, Kealy, Ogrodniczuk, Rice and Oliffe (13), and Kupferberg (14) have confirmed a relationship between alexithymia and aggression in their studies.

Another variable associated with aggression is impulsivity, defined as a personality trait in which a person tends to show unplanned reactions to internal or external stimuli, regardless of the negative consequences of these reactions for themselves and others (15). It is believed that impulsivity arises when the normal regulation of behavior does not perform correctly. Those who show this impairment have trouble delaying gratification and are generally concerned about satisfying their new desires. Moreover, they have a problem expressing emotions, mainly affects, sexual desire, and aggression, in a socially appropriate way (16). Due to the lack of cognitive resources, those people with a high level of impulsivity feel that they have the right to react aggressively in painful or threatening situations (17). Based on the results of various studies, weakness in controlling arousal and impulsiveness can be a dangerous factor for aggressive behavior, especially in antisocial personalities and drugs users (18,19). On the same subject, Piko and Pinczés (20) examined impulsivity and various aggressive behaviors among 413 adolescents. This study revealed that impulsivity acted as a risk factor for aggression.

A broad range of research has been conducted on the factors associated with impulsivity. Much of these studies have linked emotional states with impulsivity (21,22). The results of the studies regarding the last decade demonstrate that people who cannot identify their emotions may act hastily when they cannot manage their emotions in response to the experienced negative feelings (23,24). This lack of ability to identify negative emotions is a characteristic of a high level of alexithymia (25).

Furthermore, the limited ability of alexithymic individuals in cognitive processing and the conscious experience of emotions during unpleasant arousal can lead to immediate reactions, including physiological responses (26,27). Therefore, it seems that impulsivity can play a mediating role in the relationship between alexithymia and aggression. In this regard, Velotti et al. (17) and Garofalo et al. (28) confirmed the mediating role of impulsivity in the relation between alexithymia and aggression in a middle-aged group of the general Italian population.

Studies have indicated that impulsivity is under the influence of religion (29) and age (30), besides cultural variation has an impact on aggression (31); since the two studies conducted in this field are only in Italy and consist of adult age group, the present study was performed on the population of students in Iran to examine the extent of generalizability. Therefore, this study aimed to investigate the intervening role of impulsivity in the relation between alexithymia and aggression in university students.

Materials and Methods

This study was descriptive correlational in design, and it was conducted after the committee approved the topic of the department of psychology at Yazd University. The statistical population of this study is composed of all Bachelor students of the Faculty of Psychology and Educational Sciences at Yazd University in the academic year of 2017-2018. Given that the population size was 345 people, the required sample size was 185 people, according to the Morgan table. With a 10% probability of sample loss, 20 more subjects were considered, out of which seven people were excluded due to incomplete surveys, and thus data analysis was performed according to the remaining 198 questionnaires. The sample was recruited using the convenience sampling method. The inclusion criterion included willingness for participation, and not having chronic physical and mental illnesses. The exclusion criterion was incomplete questionnaire.

To observe ethical considerations, participation in the survey was completely voluntary. First, the subjects explained the research objectives; they were assured that the information would remain confidential. hen, after assent was obtained from them, the questionnaires were administered, and at the end, all of the responses were collected anonymously.

Research instrument

A) Buss-Perry Aggression Questionnaire: Aggression was measured using Buss-Perry Aggression Questionnaire (BPAQ; Buss and Perry, 1992) (32). This self-report questionnaire comprises 29 items, rated on a 5-point scale from "extremely unlike me" to "extremely like me". It is noteworthy to mention that the Psychometric properties of the Persian (Iranian language) version of this scale were confirmed by Samani44. In this study, the internal consistency (Cronbach's alpha) was 0.88.

B) Toronto Alexithymia Scale (TAS-20): It consists of 20 items assessing alexithymia. Subjects respond to each item on 5-point Likert scales ranging from strongly disagree (1 point) to agree (5 points) strongly. The TAS-20 has three factors: difficulty identifying feelings, describing feelings, and limited imagination. Although the Persian version of the TAS- 20 was employed to measure alexithymia in this study, the psychometric properties were proven to be suitable. In this study, Cronbach's alpha was 0.75 (33).

C) Barratt Impulsiveness Scale (BIS-11): It comprises 30 items scored on a Likert scale ranging from 1 (never) to 4 (very frequently). In a prior study, Javid et al. assessed the reliability and validity of the Persian version of BIS-11 in university students. Subsequently, confirmatory factor analyses confirmed three factors, yet five items were removed because of low factor weights. Then, they reported that reliability was 0.81, whereas, in the present study, Cronbach's alpha was 0.69 (34).

Statistical analyses were performed using SPSS-23 and AMOS-22 software.

Afterward, correlation analysis was carried out to examine the association between alexithymia, impulsivity, and aggression. Then, structural equation modeling was done using the Maximum Likelihood Estimation (MLE) to test the mediating effects of impulsivity on the relationship between alexithymia and aggression. Finally, some indices were calculated in order to assess the correspondence of the model with the data: Chi-square statistics, Root-Mean-Square Error of Approximation (RMSEA), Standardized Root-Mean-Square Residual (SRMR), and Comparative Fit Index (CFI) (35).

Results

In this study, 74.7% (148 persons) of all subjects were female, and 25.3% (50 persons) were male. The mean age of subjects was 20.05 (ranging from 18 to 24 years old).

Furthermore, 49% of the respondents were studying psychology, and 51% were in educational sciences. In addition, there was no correlation between demographics and the primary variable of the study. The mean and standard deviation of aggression, impulsivity, and alexithymia along with Pearson correlation are shown in Table 1.

Table 1. Mean, standard deviation, and Pearson correlation

Variable	Mean	Standard Deviation	1	2	3
1. Aggression	77.43	16.80	-	0.26**	0.39**
2. Impulsivity	61.26	5.66		-	0.28**
3. Alexithymia	85.74	9.16			-

**P< 0.01

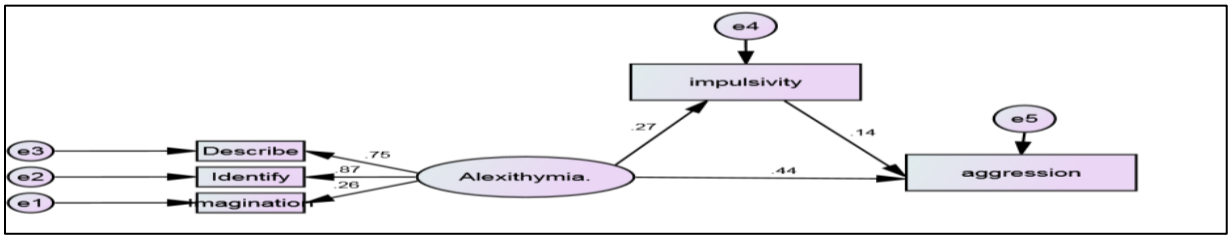

Figure 1. The structural equation model regarding the mediating effect of impulsivity
Note: Factor loadings are standardized

Results specified that aggression positively correlated with impulsivity and alexithymia (r= 0.26, *P*< 0.01, r= 0.39, *P*< 0.01, respectively)

To examine the mediating role of impulsivity between alexithymia and aggression (Fig. 1), the Structural Equation Modeling procedure was done using AMOS 22.

Fit indices indicate that the model provides relatively acceptable fit to the data: $\chi 2$= 3.51, df= 4, *P*= 0.007, RMSEA= 0.11, SRMR= 0.05 and CFI= 0.95. Given that the direct effect of alexithymia on aggression remained significant, the partial mediation of impulsivity was confirmed.

Discussion

The main objective of the present study was to evaluate the mediation role of impulsivity in the relation between alexithymia and aggression, the results of which reveal that impulsivity partially mediates this relationship. It is important to note that the previous finding is consistent with Velloti et al. (17), Garofalo et al. (28), and Hahn et al. (36) studies. Velloti et al. (17) have conducted a study on the mediating role of impulsivity in the relationship between alexithymia and aggression in two general population groups (with an average age of approximately 37 years old) and a different group of psychiatric patients in Italy. Furthermore, the research tools were Toronto Alexithymia Scale, Barratt Impulsiveness Scale, and Buss and Perry Aggression Questionnaire. The abovementioned results showed that mediation analysis is significant only in the general population. Utilizing the same tools, the study of Garofalo et al. (28), which was performed on two groups of community participants (with an average age of approximately 39 years old) and violent offenders in Italy, confirmed the mediation role of impulsivity in relation between alexithymia and aggression in both samples by regression analyses. Hahn et al. studied prediction of aggression among young adults, who were tested by a path model of associations between alexithymia, five facets of impulsivity (negative urgency, positive urgency, lack of premeditation, lack of perseverance, and sensation seeking), besides aggression in a sample of 503 undergraduate students in America using Mplus. In this study, three questionnaires were used, including the Toronto Alexithymia Scale, the five facets of impulsivity, and the AGG scale of The Personality Assessment Inventory. The results yielded positive urgency, negative urgency, and lack of premeditation as mediators in the relationship between alexithymia and aggression (36).

Results of our study could be explained by the fact that alexithymic persons have a problem in the processing of emotional awareness, which is also responsible for the subject's inability to experience and express emotions. This issue would trigger increased tension due to undistinguished states of unpleasant emotional arousal (37). Arising tension and impairment in the cognition process can lead to impulsive behavior. As stated, impulsivity occurs because of quick and inefficient information processing. Then, the emotional or cognitive deficit leads to either a failure to inhibit behavior or a tendency to engage in an action that results in personal, interpersonal, and/or social difficulties (38). One of the frequent actions that cause these problems is aggressive behavior.

Another possible explanation is that the individuals' physiological arousal increases when they encounter emotionally negative stimuli (39,40). However, high-alexithymic persons did not report increased emotional intensity due to fewer emotional words describing their feelings (41). In this situation, arousal is high while a person cannot recognize it. During moments of high arousal, response inhibition is more difficult (42), and therefore aggressive behavior is elicited more. In sum, one of the factors influencing the relationship between alexithymia and aggression can be impulsivity. People with high alexithymia levels have difficulty identifying emotions of themselves and others and managing their own emotions, so they may not be good at self-control, keeping calm, and regulating their state in undesirable conditions. Therefore, the power of their thinking will be discouraged, and the probability of reacting quickly without foresight and aggressive behavior will increase. The present study has had some limitations: First, this study has a cross-sectional design that would not allow causality assessment. Second, the data were collected using self-report questionnaires instead

of objective behavioral laboratory measures, especially aggression and impulsivity. Third, the study sample was acquired from the Iranian university population. As a result, the extent to which we can generalize the findings of this study is restricted. Finally, the results signify the partial mediating role of impulsivity; henceforth, it is suggested that the other mediator variables will be assessed in future studies. In addition, it is recommended that those groups of people with aggression problems, who may pay a visit to counsel centers, be examined for alexithymia. Also, an emotion regulation training program can be used for individuals who are diagnosed with the features of alexithymia to reduce its effects on aggressive behaviors.

Conclusion

Based on the findings, the mediating role of impulsivity in the relation between alexithymia and aggression was confirmed. The current study results contribute to the understanding of the factors influencing aggression, and they can consequently be applied as a means of preventing such behaviors. Identifying alexithymic persons and educating these individuals about impulsivity and aggression may help decrease overall rates of interpersonal problems in university students.

Acknowledgments

Authors would like to thank all students who participated in this study. The authors declare any financial support and conflict of interest.

References

1. Saeedi E, Sabourimoghadam H, Hashemi T. [Predicting the relationship between emotional intelligence and anger rumination with the aggression of Tabriz university students]. Quarterly journal of social psychology research 2020: 10: 65-82.(Persian)
2. Baron R, Richardson D. Human Aggression. 2nd ed. New York: Plenum; 1994.
3. Elmasry NM, Fouad AA, Khalil DM, Sherra KS. Physical and verbal aggression among adolescent school students in Sharkia, Egypt: prevalence and risk factors. Egypt J Psychiatry 2016; 37(3): 166-73.
4. O'Leary KD, Olivari MG, Confalonieri E. Prevalence, gender and age differences of dating aggression among Italian adolescents. Eur J Psychol 2020; 16(4): 659-75.
5. Bushman BJ, Coyne SM, Anderson CA, Björkqvist K, Boxer P, Dodge KA, et al. Risk factors for youth violence: Youth violence commission. Aggress Behav 2018; 44(4): 331-6.
6. Krahé B. The social psychology of aggression. 2nd ed. London: Psychology Press; 2013.
7. Hemming L, Haddock G, Shaw J, Pratt D. Alexithymia and its associations with depression, suicidality, and aggression: an overview of the literature. Front Psychiatry 2019; 10(203): 1-7.
8. Khodapanah M, Sohrabi F, Ahadi H. [The structural model of brain-behavioral systems, impulsivity, alexithymia and cognitive emotion regulation with eating behavior]. Iranian journal of health education and health promotion 2018: 6(3): 251-65. (Persian)
9. Swart M, Kortekaas R, Aleman A. Dealing with feelings: characterization of trait alexithymia on emotion regulation strategies and cognitive-emotional processing. PLoS One 2009; 4(6): 51-57.
10. Levenson RW. The intrapersonal functions of emotion. Cogn Emot 1999; 13(5): 481-504.
11. Sfeir E, Geara C, Hallit S, Obeid S. Alexithymia, aggressive behavior and depression among Lebanese adolescents: A cross-sectional study. Child Adolesc Psychiatr Ment Health 2020; 14(1): 1-7.
12. Stasiewicz PR, Bradizza CM, Gudleski GD, Coffey SF, Schlauch RC, Bailey ST, et al. The relationship of alexithymia to emotional dysregulation within an alcohol dependent treatment sample. Addict Behav 2012; 37: 469-76.
13. Kealy D, Ogrodniczuk JS, Rice SM, Oliffe JL. Alexithymia, suicidal ideation and health-risk behaviours: a survey of Canadian men. Int J Psychiatr Clin Pract 2018; 22(1): 77-9.
14. Kupferberg SL. The relation between alexithymia and aggression in a nonclinical sample. Ph.D. Dissertation. ProQuest Information and Learning, 2002.
15. Hamilton KR, Littlefield AK, Anastasio NC, Cunningham KA, Fink LH, Wing VC, et al. Rapid-response impulsivity: Definitions, measurement issues, and clinical implications. Personal Disord 2015; 6(2): 168-81.
16. Patton JH, Stanford MS, Barratt ES. Factor structure of the Barratt impulsiveness scale. J Clin Psychol 1995; 51(6): 768-74.
17. Velotti P, Garofalo C, Petrocchi C, Cavallo F, Popolo R, Dimaggio G. Alexithymia, emotion dysregulation, impulsivity and aggression: A multiple mediation model. Psychiatr Res 2016; 237(1): 296-303.
18. Bresin K. Impulsivity and aggression: A meta-analysis using the UPPS model of impulsivity. Aggress Viol Behav 2019; 48: 124-40.

19. Duran-Bonavila S, Morales-Vives F, Cosi S, Vigil-Colet A. How impulsivity and intelligence are related to different forms of aggression. Pers Individ Diff 2017; 117: 66-70.
20. Piko BF, Pinczés T. Impulsivity, depression and aggression among adolescents. Pers Individ Diff 2014; 69: 33-37.
21. Schreiber LR, Grant JE, Odlaug BL. Emotion regulation and impulsivity in young adults. J Psychiatr Res 2012; 46(5): 651-8.
22. Brown MR, Lebel RM, Dolcos F, Wilman AH, Silverstone PH, Pazderka H, et al. Effects of emotional context on impulse control. Neuroimage 2012; 63(1): 434-46.
23. Fink EL, Anestis MD, Selby EA, Joiner TE. Negative urgency fully mediates the relationship between alexithymia and dysregulated behaviours. Pers Ment Health 2010; 4(4): 284-93.
24. Shishido H, Gaher RM, Simons JS. I don't know how I feel, therefore I act: alexithymia, urgency, and alcohol problems. Addict Behav 2013; 38(4): 2014-17.
25. Nam G, Lee H, Lee JH, Hur JW. Disguised emotion in alexithymia: Subjective difficulties in emotion processing and increased empathic distress. Front Psychiatry 2020; 11: 698.
26. Taylor GJ, Bagby RM, Parker JD. The alexithymia construct: a potential paradigm for psychosomatic medicine. Psychosomatics 1991; 32(2): 153-64.
27. Martin JB, Pihl RO. The stress-alexithymia hypothesis: Theoretical and empirical considerations. Psychother Psychosom 1985; 43: 169-76.
28. Garofalo C, Velotti P, Zavattini GC. Emotion regulation and aggression: The incremental contribution of alexithymia, impulsivity, and emotion dysregulation facets. Psychology of violence 2018; 8(4): 470-83.
29. Paula JJ. Religiosity is a moderator of the relationship between impulsivity and internalizing symptoms. Arch Clin Psychiatry 2017; 44(1): 20-2.
30. Duprez J, Houvenaghel JF, Argaud S, Naudet F, Dondaine T, Auffret M, et al. Enhanced impulsive action selection in middle-aged adults- Insights from an Oculomotor Simon Task. Front Aging Neurosci 2016; 8(1): 251-61.
31. Fry DP. Anthropological perspectives on aggression: Sex differences and cultural variation. Aggress Behav Official 1998; 24(2): 81-95.
32. Buss AH, Perry M. The aggression questionnaire. J Pers Soc Psychol 1992; 63(3): 452-9.
33. Besharat MA. Reliability and factorial validity of a Farsi version of the 20-item Toronto Alexithymia Scale with a sample of Iranian students. Psychol Reports 2007; 101(1): 209-20.
34. Javid M, Mohammadi N, Rahimi CH. [Psychometric properties of an Iranian version of the Barratt Impulsiveness Scale-11 (BIS-11)]. Journal of psychological models and methods 2012; 2(2): 23-34. (Persian)
35. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct Equ Modeling 1999; 6(1): 1-55.
36. Hahn AM, Simons RM, Simons JS, Welker LE. Prediction of verbal and physical aggression among young adults: A path analysis of alexithymia, impulsivity, and aggression. Psychiatr Res 2019; 273: 653-6.
37. Eifert GH, Zvolensky MJ. *Somatoform disorders.* In: Maddux JE, Winstead BA. *(editors). Psychopathology: Foundations for a contemporary understanding*. Mahwah, N.J.: Lawrence Erlbaum Associates Publishers; 2005: 281-300.
38. Schmidt CA, Fallon AE, Coccaro EF. Assessment of behavioral and cognitive impulsivity: development and validation of the Lifetime History of Impulsive Behaviors Interview. Psychiatr Res 2004; 126(2): 107-21.
39. Stone LA, Nielson KA. Intact physiological response to arousal with impaired emotional recognition in alexithymia. Psychother Psychosom 2001; 70(2): 92-102.
40. Deckert M, Schmoeger M, Auff E, Willinger U. Subjective emotional arousal: an explorative study on the role of gender, age, intensity, emotion regulation difficulties, depression and anxiety symptoms, and meta-emotion. Psychol Res 2020; 84(7): 1857-76.
41. Wehmer F, Brejnak C, Lumley M, Stettner L. Alexithymia and physiological reactivity to emotion-provoking visual scenes. J Nerv Ment Dis 1995; 183: 351-7.
42. Pearlstein JG, Johnson SL, Modavi K, Peckham AD, Carver CS. Neurocognitive mechanisms of emotion related impulsivity: The role of arousal. Psychophysiology 2018; 56(2): 1-11.