

## The Relationship Between Ambivalence in Emotional Expression and Impulsivity with the Mediation of Self-Control in Adolescent Students with Depression Disorder

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### ABSTRACT

**Objective:** The aim of the present study was to investigate the relationship between ambivalence in emotional expression and impulsivity with the mediation of self-control in adolescent students with depression disorder.

**Methods and Materials:** The research method was descriptive and correlational using structural equation modeling. The sampling method employed in this research was convenience sampling. The researcher selected 150 students meeting the inclusion criteria from the Counseling Center of the Department of Education in Qazvin city. To ensure the presence of depression in the participants, the Beck Depression Inventory was distributed, collected, and analyzed. According to Delavar (2006), a sample size of 100 participants is sufficient for descriptive studies; however, to increase the internal and external stability of the findings, 150 participants were chosen, proportionate to the number of variables. Data collection was carried out using the Beck Depression Inventory (Beck & Ward, 1978), the Patton Impulsivity Scale (Patton, Stanford, & Barratt, 1995), the King and Emmons Emotional Expressivity Scale (King & Emmons, 1990), and the Kendall and Wilcox Self-Control Questionnaire (Kendall & Wilcox, 1979). Descriptive and inferential statistics, including correlation-path analysis, were employed for data analysis using SPSS version 26.

**Findings:** The results of the study confirmed the hypothesis that self-control plays a mediating role in the relationship between ambivalence in emotional expression and impulsivity among adolescent students with depression disorder. Additionally, the results indicated a significant relationship between ambivalence in emotional expression and both impulsivity and self-control. Further findings showed a significant relationship between impulsivity and self-control.

**Conclusion:** Thus, the research hypothesis, which posits the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder, is supported.

**Keywords:** Emotional expression, Impulsivity, Self-control, Depression.

## 1. Introduction

Adolescents with depression disorder (depression is an unpleasant mood state associated with a series of detrimental symptoms, including sadness, hopelessness, numbness, and disinterest in all life activities, along with avoidance of addressing these symptoms, which significantly disrupt psychological and functional efficiency across various life dimensions (Zhang et al., 2023)) face numerous psychological tensions, among which a high level of impulsivity can be noted (Spieser et al., 2023). Impulsivity encompasses a range of destructive and harmful behaviors exhibited without sufficient thought or delay, usually carried out to attain a specific reward, leading to negative outcomes across various areas (Grant & Chamberlain, 2020; Grant et al., 2021).

Individuals with impulsive tendencies typically act hastily, lack foresight, do not persist in deliberation or focus, fail to assess consequences, and engage in destructive behaviors merely to achieve a specific advantage (Kopetz et al., 2018). Verbal and non-verbal impulsive behaviors are fundamental elements of functional disorders such as hyperactivity, personality disorders, learning deficits, conduct disorder, impulse control disorder, and behavioral problems, and their presence is essential for diagnosing these dysfunctions in research and therapeutic processes (Nikbakht et al., 2023).

Various causes and factors, such as interactions with impulsive individuals, deviant peers, abusive family interactions, experiences of domestic violence, lack of emotional-social support, substance and alcohol abuse, personality abnormalities, and psychological distress, play a role in the formation and exacerbation of impulsivity (Nabati, 2023). The presence of any of these factors can largely predict the emergence of impulsivity in individuals. Impulsivity significantly disrupts one's performance across different dimensions of life, including physiological, psychological, and environmental aspects, greatly reducing their efficiency (Herman et al., 2018). This structural dysfunction may lead to physical harm to oneself or others, putting their physical well-being and capabilities at risk (Karimi, 2022).

Besides potential physical harm, this functional misbehavior may lead to a range of psychological and interactive problems, such as depression, anxiety, stress, disrupted interpersonal relationships, and the loss of emotional and social support (Nikbakht et al., 2023). These disorders, if persistent and exacerbated, reduce an

individual's desire to continue life, increasing the likelihood of social withdrawal and functional stagnation.

Theoretical and empirical evidence suggests that patients with depression disorder exhibit high levels of impulsivity, with impulsive behaviors and emotions being more pronounced due to the physical and environmental suffering they endure (Chengizian, 2023). Depressed individuals, especially under significant stress, exhibit more impulsive behaviors, and the likelihood of causing harm to themselves or their surroundings is higher (Spieser et al., 2023). Razmi and Mikaeili (2023) emphasized in their study that impulsivity is one of the most common maladaptive behaviors in patients with depression disorder. This behavior not only fails to assist in coping with the disorder and its associated suffering but gradually paves the way for psychological distress and the loss of social support (Razmi & Mikaeili, 2023). Various variables are associated with the formation, exacerbation, and persistence of impulsivity, among which emotional ambivalence can be highlighted (Grant & Chamberlain, 2020; Grant et al., 2021).

Emotional ambivalence is assumed to result from individuals' unsuccessful attempts to express their emotions, leading to long lists of complaints and the magnification of insignificant details that do not usually trigger emotional responses. However, physiological dysfunction, a tendency toward impulsive behaviors, distress, or avoidance of social relationships, and self-care deficiencies can also contribute (Chen et al., 2022). Three styles of emotional expression have been introduced: emotional expressivity, which refers to the outward display of emotion regardless of its valence (positive or negative) or method (facial, verbal, or bodily expressions (Xue et al., 2023)); emotional control, which refers to the tendency to inhibit emotional responses, often described by four independent constructs: emotional inhibition (the tendency to suppress experienced emotions), rumination (repeatedly thinking about distressing emotional events), aggression control, and benign control (managing disruptive impulses during tasks (Wobeto et al., 2022)).

Recent psychological studies indicate that emotion can influence both the process of thinking (how we process social information) and the content of thoughts, judgments, and behaviors (our ways of thinking and acting), thereby affecting human health (Lindsey, 2019). Research shows that people use different patterns in expressing emotions, such as emotional expressivity, emotional control, and ambivalence in emotional expression (Wang et al., 2022). These patterns appear to underlie individuals' varying emotional responses. Emotional expressivity, as a core

component of emotion, refers to the outward display of emotion, regardless of its valence or the way it is manifested (facial, verbal, bodily, or behavioral (Giacomoni et al., 2021)).

Emotional ambivalence refers to experiencing a combination of positive and negative emotions about emotional experiences and expression (Jalali Kandelous, 2023). Emotional ambivalence in expressivity encompasses a spectrum, ranging from a desire to express but an inability to do so, to expressing without genuine desire, to expressing and then feeling regret (Choupani & Karami, 2023). Emotional control or inhibition refers to the voluntary reduction of emotional expression, either through active inhibition or involuntary suppression (Nikbakht et al., 2023). Emotional ambivalence in expressivity manifests in various forms, including the desire to express but the inability, expressing without genuine desire, and expressing followed by regret.

They believe that expressing or not expressing emotions can be healthy, but emotional ambivalence in expression leads to illness (Ebrahimi & Abed, 2023). Emotional expressivity, in contrast to emotional suppression, plays a crucial role in adaptive functioning and has positive health outcomes. Emotional expressivity, by facilitating emotional release, allows emotions to be appropriately expressed, preventing them from manifesting as somatic symptoms (Lambie, 2020).

Emotional ambivalence is defined as a tendency to doubt whether to express emotions. It is believed that the mere expression or non-expression of emotions is not problematic; rather, the conflict or ambivalence in expressing emotions is what creates problems. Other studies have reported a high correlation between emotional ambivalence and impulsivity (Choupani & Karami, 2023). Emotional ambivalence in expressivity leads to and manifests impulsivity both intrapersonally and interpersonally (Yang et al., 2023).

Although emotional ambivalence directly relates to impulsivity in depressed adolescents, mediating variables can influence this relationship (Choupani & Karami, 2023). One of these influential mediating variables is self-control. Self-control is a neuro-cognitive process that allows an individual to pause before reacting to a stimulus, reflect on the type of response, and then express the reaction (Werner & Ford, 2023). Self-control encompasses three dimensions: response inhibition, reflection on the type of reaction, and maintaining the reflection and voluntary responses. Self-control prevents immediate reactions that may be

temporarily pleasant and facilitates more constructive responses, which have desirable and functional outcomes in the long term (Jiamin, 2023).

Individuals with depression disorder exhibit impaired self-control, reacting quickly and often impulsively to different stimuli (Moradpour et al., 2023). In a meta-analytic study, Eriksson et al. (2023) reported that individuals with depression disorder demonstrate deficits in the self-control system, with this neuro-cognitive component lacking constructive development (Eriksson et al., 2023). The greater the severity of this deficiency, the weaker their self-control, the slower their reaction latency, and the greater their variability in responses (Niu, 2023). Bab-al-Khani-Najafabadi et al. (2023) showed that self-control deficits lead to the emergence and exacerbation of impulsivity and can disrupt emotional expressivity (Bab al-Khani Najaf Abadi et al., 2023). Individuals with high self-control exhibit greater self-monitoring and lower impulsivity (Cobb-Clark et al., 2023). Those with adequate self-control generally have significant control over themselves and high reflective and deliberative abilities (Niu, 2023). Self-control can act as a mediating variable, altering the relationship between emotional ambivalence in expressivity and impulsivity. This study scientifically evaluates this role, seeking to answer the question of whether self-control serves as a significant mediator in the relationship between emotional ambivalence in expressivity and impulsivity among adolescents with depression disorder.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study employed a descriptive-correlational design using structural equation modeling. The statistical population included all male high school students (grades 10 and 11) in Qazvin city in 2024 who visited the Counseling Center of the Department of Education and were diagnosed with depression disorder. The sampling method used was convenience sampling. The researcher visited the Counseling Center of the Department of Education in Qazvin city and selected 150 students who met the inclusion criteria to participate in the study. To ensure that this group had depression, the Beck Depression Inventory (BDI) was administered, collected, and analyzed. According to Delavar (2006), a sample size of 100 participants is sufficient for descriptive studies; however, to increase the internal and external reliability of the findings, 150 participants were selected in proportion to the number of variables.

Inclusion criteria included the following: participants had to reside in Qazvin city, be in grades 10 or 11, have a diagnosis of depression disorder, have no other psychological disorders besides depression (identified through consultation with the participants' therapists or, if unavailable, through a diagnostic interview), not use drugs or alcohol, have no history of receiving psychological treatment in the past year, and have no risk of suicide. Exclusion criteria were as follows: residence outside Qazvin city, presence of suicide risk, or unwillingness to participate in the study.

## 2.2. Measures

### 2.2.1. Depression

Developed by Beck and Ward (1978) to assess the level of depression in individuals, the BDI consists of 21 items. It was translated and standardized in Iran by Alipour and Nouri (2006). Responses are scored on a continuum from the lowest level (score 0) to the highest level (score 3), with total scores ranging from 0 to 63. Scores between 0–13 indicate no depression, 14–19 indicate mild depression, 20–28 indicate moderate depression, and 29–63 indicate severe depression (Beck, Epstein, et al., 1988; Beck, Steer, & Gorbin, 1988). In Iran, Alipour and Nouri (2006) reported a reliability coefficient between .48 and .86 using Cronbach's alpha and confirmed its content and face validity (Chengizian, 2023).

### 2.2.2. Self-Control

Developed by Kendall and Wilcox (1979) to assess self-control, it was translated and standardized in Iran by Hemmati (2004). This questionnaire consists of 33 items, with 10 items measuring self-control, 13 items measuring impulsivity, and 10 items measuring impulsivity-self-control. Kendall and Wilcox (1979) reported reliability coefficients of .98 using Cronbach's alpha and .84 using test-retest (Kendall & Wilcox, 1979). In Iran, Hemmati Alamdarloo (2004) reported a reliability coefficient of .98 using Cronbach's alpha and confirmed its content and face validity (Hemmati Alamdarloo, 2004).

### 2.2.3. Impulsiveness

Developed by Patton et al. (1995) to measure impulsivity, this scale was translated and standardized in Iran by Javid et al. (2012). It consists of 30 items and three subscales: non-

planning impulsivity, motor impulsivity, and cognitive impulsivity. Responses are scored on a four-point Likert scale ranging from never to always, with scores from one to four (Barratt et al., 2019). Patton et al. (1995) reported reliability above .80 using Cronbach's alpha and confirmed its construct, content, and face validity (Patton et al., 1995). In Iran, Javid et al. (2012) reported an overall reliability of .81 using Cronbach's alpha, with subscale reliabilities between .47 and .80, and confirmed its face and content validity (Javid et al., 2012).

### 2.2.4. Emotional Expressivity

Developed by King and Emmons (1990) to assess emotional expressivity, it was translated and standardized in Iran by Rafieinia (2001). This questionnaire includes 16 items and three subscales: positive expressivity, intimacy expressivity, and negative expressivity. The original response range was on a seven-point scale from strongly agree to strongly disagree, but it was simplified to a five-point scale for ease of response. The scoring method is based on the Likert scale, with a score of 5 for strongly agree and 1 for strongly disagree; item 15 is reverse scored. Rafieinia et al. (2006) reported reliability coefficients of .68, .65, and .59 for the subscales using Cronbach's alpha. King and Emmons (1990) reported alpha coefficients of .70, .74, and .63 for the subscales and found a significant positive correlation of .55 with the Multidimensional Personality Questionnaire for convergent validity. Rafieinia (2001) reported reliability coefficients of .65, .68, and .61 for the subscales using Cronbach's alpha and confirmed the content and face validity (Rafieinia, 2002).

## 2.3. Data Analysis

Data were analyzed using SPSS version 26, employing both descriptive and inferential statistics. Descriptive tests such as mean and standard deviation were used to describe research variables, while inferential tests, including correlation analysis and path analysis, were employed to examine the research objectives.

## 3. Findings and Results

Table 1 presents the descriptive statistics for the variables of emotional ambivalence in expression, self-control, and impulsivity, including skewness and kurtosis, along with the mean and standard deviation scores.

**Table 1**

*Descriptive Statistics for Research Variables*

Statistical Index	Mean	Standard Deviation	Skewness	Kurtosis
Emotional Ambivalence in Expression	39.40	5.157	0.052	0.115
Self-Control	48.51	3.840	0.449	0.052
Impulsivity	52.11	5.429	-0.354	1.667

Based on the data, the mean scores for emotional ambivalence in expression, self-control, and impulsivity are 39.40, 48.51, and 52.11, respectively. Furthermore, since the skewness and kurtosis values range between -2 and +2, the data are considered normally distributed at the 0.05 level.

To analyze the data, correlation coefficients between the research variables were first presented in Table 2. Subsequently, path analysis was used to examine the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity.

**Table 2**

*Correlation Matrix of Research Variables*

Variables	1	2	3
1- Emotional Ambivalence in Expression	1		
2- Self-Control	-0.611**	1	
3- Impulsivity	0.589**	-0.640**	1

\*\*p<0.01

Table 2 shows the correlation results among emotional ambivalence in expression, self-control, and impulsivity. All calculated correlation coefficients are significant at the 0.01 alpha level ( $p < 0.01$ ). The correlation between emotional ambivalence in expression and impulsivity is positive, indicating a direct relationship. The correlation between self-control and impulsivity is negative, indicating an inverse relationship.

values were computed using SPSS, and none of the values exceeded  $\pm 1$ . The normality of the data was confirmed with the Kolmogorov-Smirnov test, indicating that the distribution of scores for all four variables was normal ( $p > 0.05$ ). The Durbin-Watson statistic was used to test the assumption of error independence for regression equations, confirming that this assumption was met. Collinearity among variables was assessed using Pearson correlations, with no collinearity issues found (no bivariate correlation  $\geq 0.9$ ). Additionally, tolerance and variance inflation factor (VIF) statistics were computed to check for multicollinearity, with all tolerance values above 0.1 and VIF values below 10, indicating no multicollinearity. After confirming these assumptions, path analysis was used to evaluate the model.

To test the fit of the model examining the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder, path analysis was conducted. Before performing path analysis, univariate outliers were assessed using box plots, and multivariate outliers were checked using the Mahalanobis distance, with outliers removed from the dataset. Skewness and kurtosis

The model fit indices are presented in Table 3.

**Table 3**

*Model Fit Indices*

Fit Index	Acceptable Range	Observed Value	Fit Evaluation
$\chi^2/df$	$\leq 5$	3.219	Acceptable
IFI	$> 0.9$	0.914	Acceptable
RMSEA	$\leq 0.08$	0.070	Acceptable
SRMR	$\leq 0.08$	0.062	Acceptable
CFI	$> 0.9$	0.913	Acceptable
GFI	$> 0.9$	0.910	Acceptable

The chi-square to degrees of freedom ratio ( $\chi^2/df$ ) falls between 1 and 5. The root mean square error of approximation (RMSEA) is 0.070, and the standardized root mean square residual (SRMR) is 0.062, both below the threshold of 0.08. The GFI, CFI, and IFI indices are all above 0.9. Overall, considering all calculated model fit indices, the model fit for the mediating role of self-control in the relationship between emotional ambivalence in expression

and impulsivity among adolescent students with depression disorder is confirmed.

To determine the statistical significance of the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder, the bootstrap method was used. The results are presented below.

**Table 4**

*Path Coefficients for the Indirect Effect of Emotional Ambivalence in Expression on Impulsivity Through the Mediating Variable of Self-Control*

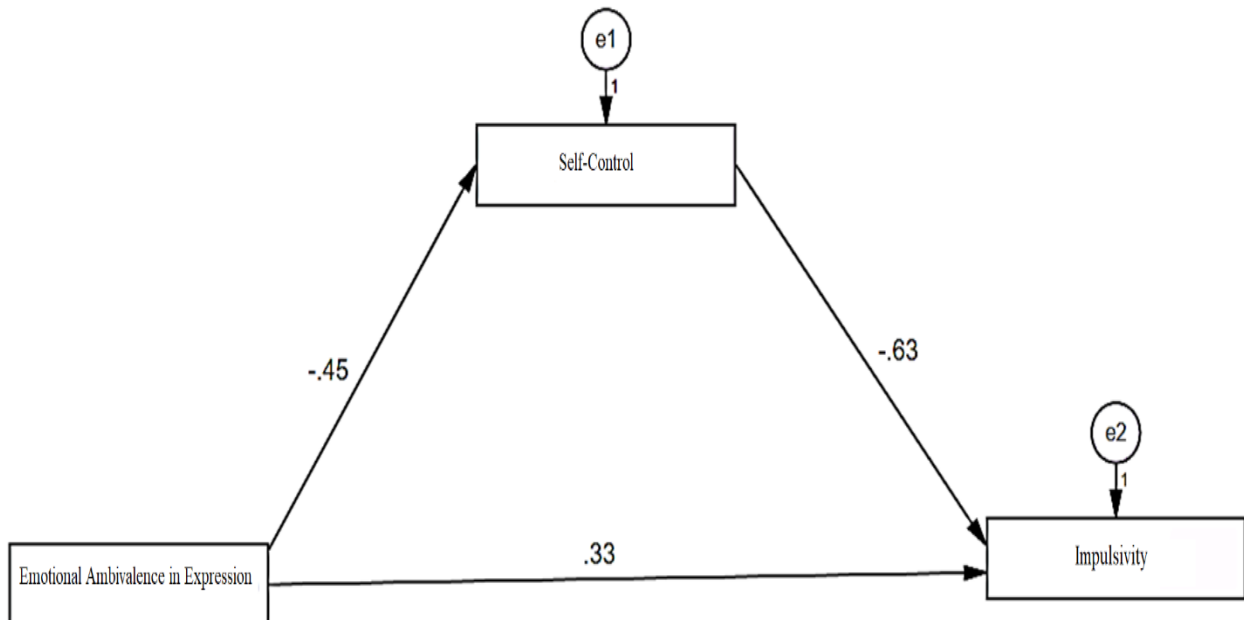
Independent Variable	Mediating Variable	Dependent Variable	Unstandardized Coefficient	Standardized Coefficient	Significance Level
Emotional Ambivalence in Expression	Self-Control	Impulsivity	0.288	0.273	0.01

The results indicate that the coefficient for the indirect effect of emotional ambivalence in expression on impulsivity through self-control is statistically significant at the 0.01 alpha level ( $p < 0.01$ ). Therefore, the hypothesis that

self-control mediates the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder is supported.

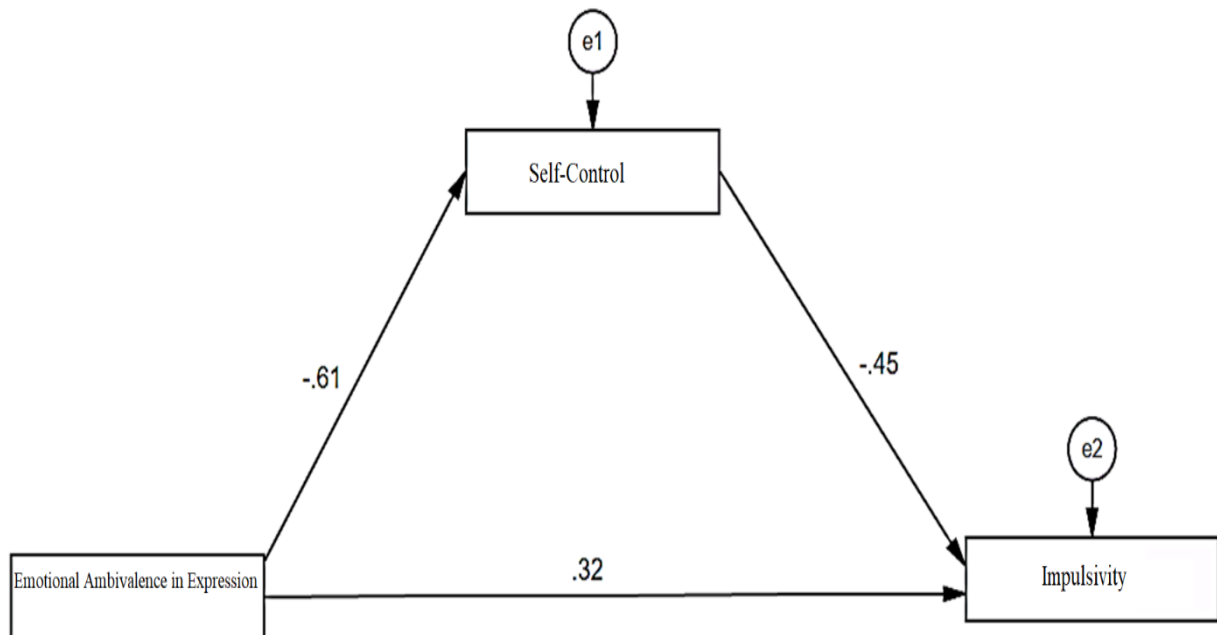
**Figure 1**

*Unstandardized Coefficients for the Mediating Role of Self-Control in the Relationship Between Emotional Ambivalence in Expression and Impulsivity*



**Figure 2**

*Standardized Coefficients for the Mediating Role of Self-Control in the Relationship Between Emotional Ambivalence in Expression and Impulsivity*



#### 4. Discussion and Conclusion

According to the results, the model fit for the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder is confirmed. Thus, the research hypothesis, which posits the mediating role of self-control in the relationship between emotional ambivalence in expression and impulsivity among adolescent students with depression disorder, is supported.

Regarding the significant role of self-control in determining the relationship between emotional ambivalence in expression and impulsivity among adolescents with depression disorder, research findings showed partial alignment with previous studies (Abedi et al., 2023; Chengizian, 2023; Ebrahimi & Abed, 2023; Jalali Kandelous, 2023; Karimi, 2022; Moradpour et al., 2023; Wang et al., 2022; Wobeto et al., 2022; Xue et al., 2023; Zhang et al., 2023).

To explain the significant role of self-control in determining the relationship between emotional ambivalence in expression and impulsivity among adolescents with depression disorder, it can be stated that a significant positive relationship exists between emotional

ambivalence in expression and impulsivity. Depressed adolescents who cannot regulate their internal emotions struggle to control their inner impulses and often behave impulsively in various situations. This behavior exacerbates depressive symptoms and reduces their ability to manage responsibilities and roles in different areas of life effectively. Thus, improving impulsivity in depressed adolescents may be possible only when their ability to regulate emotions is enhanced, and emotional ambivalence in expression is reduced. The greater their emotional regulation ability, the lower their impulsivity, as supported by this study and other research (Abedi et al., 2023; Moradpour et al., 2023; Wang et al., 2022; Wobeto et al., 2022).

These researchers demonstrated that high impulsivity is associated with emotional ambivalence in expression and poor emotional regulation, and impulsivity reduction can only be expected when emotional regulation is strengthened, reducing emotional management weaknesses. Another significant finding from this study is that self-control significantly affects emotional ambivalence in expression and impulsivity. Specifically, higher self-control levels are associated with lower impulsivity, as corroborated by previous studies (Ebrahimi & Abed, 2023; Karimi, 2022;

Zhang et al., 2023). These researchers showed that high self-control enables individuals to manage emotional, cognitive, and behavioral impulses effectively. Therefore, strengthening self-control may reduce impulsivity in depressed adolescents.

Individuals with depression disorder exhibit impaired self-control and react quickly and often impulsively to different stimuli (Moradpour et al., 2023). In a meta-analytic study, Eriksson et al. (2023) reported that individuals with depression disorder have deficits in their self-control system, which lacks constructive development in the neuro-cognitive dimension (Eriksson et al., 2023). The more pronounced these deficiencies, the weaker their self-control, the slower their reaction latency, and the greater their variability in responses (Niu, 2023). Bab-al-Khani-Najafabadi et al. (2023) showed that self-control deficits lead to increased impulsivity and may also disrupt emotional expressivity (Bab al-Khani Najaf Abadi et al., 2023). Individuals with high self-control have better self-monitoring and lower impulsivity (Cobb-Clark et al., 2023). Those with adequate self-control demonstrate significant self-regulation and high deliberative capacity (Niu, 2023). Self-control can act as a mediating variable, altering the relationship between emotional ambivalence in expression and impulsivity.

This finding clarified the direct effect of self-control on emotional ambivalence in expression and impulsivity among adolescents with depression disorder. Self-control may also have an indirect role in the relationship between these two harmful factors. The study showed that high self-control reduces the relationship between emotional ambivalence in expression and impulsivity in adolescents, meaning that higher self-control reduces emotional ambivalence and impulsivity. Therefore, educational and therapeutic programs should target this area, as strengthening self-control could decrease the intensity and frequency of emotional ambivalence and impulsivity in individuals with depression, improving treatment outcomes.

## 5. Limitations & Suggestions

This study was conducted in Qazvin city, limiting the generalizability of these findings to other urban and cultural contexts. The sample consisted of male adolescents, excluding females; thus, results are limited to males and may not be generalizable to females. The study also focused on high school boys, excluding students from other educational levels, further limiting generalizability. Descriptive research

designs like correlation studies have limited control over confounding variables. There are always hidden and intervening variables that can influence results, so it is not reasonable to claim absolute certainty, which is a methodological limitation of this study.

It is recommended that school counseling centers use the study's findings, which confirmed the mediating role of self-control between emotional ambivalence in expression and impulsivity. By designing programs aimed at enhancing self-control in students with depression disorder, these centers can reduce emotional ambivalence and impulsivity, improving their psychological security and quality of life. The educational system can also focus on reducing emotional ambivalence and impulsivity, either directly or indirectly, by strengthening self-control. Counseling centers, especially academic counseling services dealing with depressed adolescents, could design programs to improve emotional expressivity, impulsivity, and self-control, ultimately enhancing psychological security and academic performance.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

This article is derived from the first author's doctoral dissertation. All authors equally contributed to this article.

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