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Comparison of Early Maladaptive Schemas and Difficulty in Emotion Regulation Among Adolescent Boys and Girls With and Without Marijuana Use

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A B S T R A C T

Objective: Adolescence is a developmental period characterized by significant biological, psychological, and social changes. Consequently, it is associated with increased challenges and negative life events, which heighten adolescents' distress. This study aimed to compare early maladaptive schemas and difficulty in emotion regulation among adolescent boys and girls with and without marijuana use.

Methods and Materials: This applied research employed a causal-comparative design. The study population consisted of all adolescent boys and girls attending counseling centers in District 2 of Tehran in 2022. A total of 100 participants were selected for the study (50 with marijuana use and 50 without marijuana use). The sample of marijuana users was selected using the snowball sampling method. Data were collected using the standardized Young Schema Questionnaire (2005) and the Difficulties in Emotion Regulation Scale by Gratz and Roemer (2004). Data analysis was performed using multivariate analysis of variance (MANOVA) and SPSS.22 software.

Findings: The results indicated a significant difference in early maladaptive schemas and difficulty in emotion regulation among adolescent boys and girls with and without marijuana use ($P<0.01$). Furthermore, there was a significant difference in the mean components of early maladaptive schemas and difficulty in emotion regulation between boys and girls ($P<0.01$).

Conclusion: Given the impact of early maladaptive schemas and difficulty in emotion regulation on the tendency towards addiction among adolescents and young adults, it is possible to increase public awareness about the risk of addiction and develop appropriate skills to cope with these problems.

Keywords: *Early maladaptive schemas, difficulty in emotion regulation, adolescents, marijuana use.*

1. Introduction

Individuals unconsciously develop belief mechanisms about relationships. These belief mechanisms are shaped through interactions with people they have been connected to since childhood. When examining this mechanism, the presence and influence of schemas in social life become evident. With the formation of these belief mechanisms, individuals tend to understand people they interact with in adulthood accordingly. This also indicates the schema (Brotchie et al., 2004; Monajem & Aghayousefi, 2015). The concept of early maladaptive schemas suggests that events experienced in past years impact current behaviors, thereby disrupting future years. By understanding this relationship, clients can be prepared in less time to abandon their automatic behavioral patterns and exhibit coordinated behaviors under cognitive management. Early maladaptive schemas primarily appear in relationships. These schemas are life patterns that influence thoughts, feelings, behavior, communication, and social perception (Efrati et al., 2023; Orang et al., 2017; Salasi & Shoghi, 2022; Şenkal Ertürk et al., 2020).

Early maladaptive schemas consist of five domains. These schema domains include: disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and over-vigilance and inhibition. There are 18 schema dimensions within these domains. These dimensions are: abandonment/instability, emotional inhibition, mistrust/abuse, social isolation/alienation, defectiveness/shame, dependency/incompetence, enmeshment/undeveloped self, vulnerability to harm or illness, failure, entitlement/grandiosity, insufficient self-control/self-discipline, subjugation, approval-seeking/recognition-seeking, emotional deprivation, negativity/pessimism, punitiveness, unrelenting standards/hypercriticalness. Early maladaptive schemas do not form as a result of a single negative experience but are created in response to cumulative early life negative experiences, leading to the development of rigid and unconditional beliefs about oneself, the world, and others. The persistence of early maladaptive schemas over time, along with the difficulty of maintaining them and their negative impact on emotions and behaviors, makes them a significant factor in the development and maintenance of mental health problems (Simons et al., 2018; Wang et al., 2010; Yakın et al., 2019). According to estimates in various articles, millions of people worldwide suffer from substance abuse. The reason for substance use is still not fully understood. Some evidence suggests that negative emotions may be associated with the development and maintenance of addictive behavior. Additionally, addicts have a lower ability to regulate negative moods compared to healthy individuals (Besharat et al., 2021; Cudo et al., 2024).

Emotion regulation refers to any process or action through which an individual influences their emotions or emotional expression. An individual can regulate their emotions at several points, including the situations they seek or avoid, how they think about the experience, and how they express their emotions. Some forms of regulation are associated with greater well-being, such as cognitive reappraisal, mindfulness, and acceptance, while other strategies, such as suppression, are associated with poorer psychological outcomes. Difficulty in emotion regulation has been suggested as a component of clinical disorders (Gross, 2014; Gross, 2015; Gross & Muñoz, 1995). According to this framework, when an individual experiences an intense emotion, the arousal may need an outlet, especially if the individual is trying to reduce the intensity of the emotion. Some may use substances to regulate negative emotions (Aldao et al., 2010; Amini, 2023). These theories may help in the treatment of individuals with addiction. For instance, teaching emotion regulation skills in behavioral therapy not only improves emotion regulation but also increases abstinence rates and reduces substance use (Cavicchioli et al., 2019; Şenkal Ertürk et al., 2020; Stellern et al., 2023). Therefore, poor emotion regulation may be common among individuals with addiction.

Developing a clearer understanding of emotion regulation disorders in individuals with addiction may enhance our understanding of the causes and treatment of substance addiction. Research indicates that the development and maintenance of early maladaptive schemas are important concerning the psychological aspects of substance use disorders (Shorey et al., 2013). Additionally, high early maladaptive schemas are common in substance users. There may be a link between early maladaptive schemas and the persistence of substance use in users. According to Ball (1998), substance use can be seen as a means through which substance users attempt to avoid the negative emotions and beliefs associated with their early maladaptive schemas (Ball, 1998). However, there is limited research on the relationship between early maladaptive schemas and difficulty in emotion regulation among substance users.

On the other hand, adolescence is a sensitive age for developing coping behaviors and responding to

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environmental needs. This period is accompanied by numerous health-compromising problems due to rapid physical, psychological, social, cultural, and cognitive changes. Most health-threatening factors and risky behaviors are developed by adolescents at this age (Efrati et al., 2023). Substance addiction and psychotropic drugs are accompanied by severe motivational disorders and loss of behavioral control, resulting in personality devastation (Stellern et al., 2023; Thorberg & Lyvers, 2006)). Substance use imposes high costs due to its destructive effects on community health, leading to increased crime and mortality, making it a major threat to societies, especially the adolescent population (Brotchie et al., 2004; Mc Donnell et al., 2018). The primary aim of the present study is to compare early maladaptive schemas and difficulty in emotion regulation among adolescent boys and girls with and without marijuana use.

2. Methods and Materials

2.1. Study Design and Participants

The present study is applied research in terms of its objective and causal-comparative in terms of its research method. The statistical population of this study included all adolescent boys and girls attending counseling centers in District 2 of Tehran in 2022. According to the criteria for entering the study, two groups, with and without marijuana use, were selected for the sample. Given that the population of adolescent marijuana users is not identified and the available statistics are confidential, the snowball sampling method was used to determine the sample size. A total of 100 individuals were selected for the group (50 with marijuana use and 50 without marijuana use). The sample of marijuana users was selected using the snowball sampling method, where each user introduced another user. Finally, 50 adolescent boys and girls using marijuana and 50 non-using adolescents were identified and completed the questionnaires. The research sample was assured of the confidentiality of their information, and the questionnaires were coded without mentioning the participants' names.

The inclusion criteria for the study included the complete written consent of the research sample to enter and continue the study, being 14 to 17 years old, and including both genders. Given that the population includes adolescents with and without marijuana addiction, the adolescents entered the study with this knowledge. Adolescents with the condition of not using any other drugs except marijuana were included in the study. The exclusion criteria included not meeting the inclusion criteria and the ability of the adolescents to withdraw from the study at any stage for any reason.

Given that the research approach was quantitative and survey-based, standard questionnaires were used to collect data. By visiting a clinic in Tehran and coordinating with clinic officials to speak with adolescent boys and girls using marijuana who visited the clinic, they were asked to participate in the present study. After explaining the research objectives and answering any potential questions, those willing to participate completed the questionnaires. Each participant was asked to introduce another marijuana user in coordination with them. This process was repeated until 50 adolescent boys and girls using and not using marijuana were identified and completed the questionnaires.

2.2. Measures

2.2.1. Early Maladaptive Schemas

To measure early maladaptive schemas, the 75-item Young Schema Questionnaire (2005) with a 6-point Likert response scale (1 = completely untrue to 6 = completely true) and 15 subscales including emotional deprivation, abandonment/instability, mistrust/abuse, social isolation, defectiveness/shame, failure, dependency/incompetence, vulnerability to harm, enmeshment/undeveloped self, entanglement, self-sacrifice, emotional inhibition, unrelenting standards, entitlement, insufficient self-control, and self-discipline was used. Based on Cronbach's alpha for the present study in Beck et al. (2018), the total test reliability was 0.96, and for the subscales, it was above 0.80. In Welburn et al. (2009), the factor analysis results strongly supported the internal structure of the questionnaire. In Ghiyasi's study (2009), concurrent validity with the Dysfunctional Attitude Scale was reported as 0.65. Cronbach's alpha for the subscales was between 0.60 to 0.90, and the overall alpha was reported as 0.94 (Jamshidi et al., 2020).

2.2.2. Difficulties in Emotion Regulation

This questionnaire was developed by Gratz and Roemer in 2004. The DERS (2004) assesses emotion regulation and difficulties in emotion regulation across six components: non-acceptance of emotional responses, difficulties in engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Higher scores indicate greater difficulties in emotion

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regulation. The scale provides an overall score from the sum of all items and six subscale scores. The 36-item tool measures levels of emotional regulation difficulties on a five-point scale from 1 (almost never) to 5 (almost always), with higher scores in each subscale and the overall scale indicating greater difficulty in emotion regulation (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006; Gratz & Roemer, 2004; Gratz & Tull, 2010). The test-retest reliability for the DERS in clinical (85) and non-clinical (156) samples over 4 to 6 weeks ranged from 0.70 to 0.83 for non-acceptance of emotional responses, 0.70 to 0.85 for difficulties in engaging in goal-directed behavior, 0.72 to 0.86 for impulse control difficulties, 0.69 to 0.78 for limited access to emotion regulation strategies, 0.68 to 0.80 for lack of emotional awareness, and 0.73 to 0.85 for lack of emotional clarity, and the overall score ranged from 0.71 to 0.87 (Besharat et al., 2021).

2.3. Data analysis

Data analysis was performed using both descriptive and inferential methods. Multivariate analysis of variance (MANOVA) was used for data analysis. Before testing the hypotheses, data normality was first tested. To ensure data normality, histograms and the Kolmogorov-Smirnov test were examined. Data analysis was performed in SPSS at a significance level of 0.05.

3. Findings and Results

The results indicate that 48 participants (47.5%) were girls and 52 participants (51.5%) were boys. Descriptive statistics of early maladaptive schema dimensions for boys and girls with and without marijuana use are presented in Table 1.

Table 1

Descriptive Statistics of Early Maladaptive Schema Dimensions for Boys and Girls with and without Marijuana Use

Variable	Girls (M ± SD)	Boys (M ± SD)	Total (M ± SD)
Emotional Deprivation	14.31 ± 3.30	15.48 ± 3.30	14.92 ± 3.34
Abandonment/Instability	14.79 ± 3.01	14.42 ± 3.35	14.60 ± 3.18
Mistrust/Abuse	15.45 ± 3.45	14.34 ± 3.70	14.88 ± 3.61
Social Isolation/Alienation	15.58 ± 2.92	14.47 ± 2.90	15.16 ± 2.92
Defectiveness/Shame	15.33 ± 3.67	14.51 ± 3.24	14.91 ± 3.46
Failure	14.47 ± 3.35	14.23 ± 2.76	14.35 ± 3.04
Dependency/Incompetence	15.47 ± 3.71	15.01 ± 3.11	15.24 ± 3.40
Vulnerability to Harm	15.39 ± 3.09	14.98 ± 3.12	15.18 ± 3.09
Enmeshment/Undeveloped Self	14.62 ± 2.63	14.78 ± 3.39	14.71 ± 3.03
Subjugation	14.66 ± 2.77	14.96 ± 2.90	14.82 ± 2.82
Self-Sacrifice	14.64 ± 3.02	14.98 ± 3.11	14.82 ± 3.06
Emotional Inhibition	15.64 ± 3.23	14.13 ± 3.06	14.86 ± 3.21
Unrelenting Standards/Hypercriticalness	14.08 ± 3.45	14.92 ± 3.07	14.52 ± 3.27
Entitlement	14.89 ± 3.19	14.59 ± 3.24	14.74 ± 3.20
Insufficient Self-Control/Self-Discipline	14.47 ± 3.57	14.55 ± 3.74	14.52 ± 3.64

Descriptive statistics of emotion regulation difficulties dimensions for boys and girls with and without marijuana use are presented in Table 2. The mean dimensions of emotion regulation difficulties among boys and girls were nearly identical.

Table 2

Descriptive Statistics of Emotion Regulation Difficulties Dimensions for Boys and Girls with and without Marijuana Use

Variable	Girls (M ± SD)	Boys (M ± SD)	Total (M ± SD)
Non-Acceptance of Emotional Responses	18.29 ± 3.72	17.71 ± 3.15	17.99 ± 3.43
Difficulties Engaging in Goal-Directed Behavior	15.33 ± 3.23	15.11 ± 3.24	15.22 ± 3.22
Impulse Control Difficulties	17.54 ± 3.48	17.98 ± 3.25	17.75 ± 3.35
Limited Access to Emotion Regulation Strategies	17.64 ± 3.42	17.98 ± 2.97	17.82 ± 3.18
Lack of Emotional Awareness	24.60 ± 3.80	24.19 ± 3.69	24.39 ± 3.73
Lack of Emotional Clarity	15.29 ± 3.19	15.00 ± 2.82	15.14 ± 2.90

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The descriptive statistics of early maladaptive schema dimensions for boys and girls with and without marijuana use are presented in **Error! Reference source not found.**. The mean scores for all dimensions of early maladaptive schemas were numerically higher among boys and girls who used marijuana.

Table 3

Descriptive Statistics of Early Maladaptive Schema Dimensions for Boys and Girls with and without Marijuana Use

Variable	Users (M ± SD)	Non-Users (M ± SD)	Total (M ± SD)
Emotional Deprivation	14.86 ± 3.41	9.98 ± 3.30	14.92 ± 3.34
Abandonment/Instability	17.36 ± 2.98	15.84 ± 3.22	14.60 ± 3.18
Mistrust/Abuse	15.76 ± 3.77	15.38 ± 3.47	14.88 ± 3.61
Social Isolation/Alienation	15.24 ± 2.80	14.08 ± 3.06	15.16 ± 2.92
Defectiveness/Shame	15.20 ± 3.07	13.62 ± 3.82	14.91 ± 3.46
Failure	15.38 ± 3.02	14.32 ± 3.09	14.35 ± 3.04
Dependency/Incompetence	16.68 ± 3.04	14.80 ± 3.37	15.24 ± 3.40
Vulnerability to Harm	15.52 ± 3.58	14.84 ± 3.37	15.18 ± 3.09
Enmeshment/Undeveloped Self	16.32 ± 3.17	12.10 ± 2.88	14.71 ± 3.03
Subjugation	15.14 ± 2.61	13.50 ± 3.01	14.82 ± 2.82
Self-Sacrifice	17.68 ± 3.08	14.96 ± 3.06	14.82 ± 3.06
Emotional Inhibition	15.94 ± 2.98	14.78 ± 3.46	14.86 ± 3.21
Unrelenting Standards/Hypercriticalness	15.22 ± 2.95	15.00 ± 3.45	14.52 ± 3.27
Entitlement	15.64 ± 3.32	14.84 ± 3.11	14.74 ± 3.20
Insufficient Self-Control/Self-Discipline	14.22 ± 3.82	11.82 ± 3.46	14.52 ± 3.64

As shown in Table 4, all dimensions of emotion regulation difficulties had higher means for users compared to non-users, except for the lack of emotional awareness dimension, which had nearly identical means in both groups.

Table 4

Descriptive Statistics of Emotion Regulation Difficulties Dimensions for Users and Non-Users

Variable	Users (M ± SD)	Non-Users (M ± SD)	Total (M ± SD)
Non-Acceptance of Emotional Responses	19.56 ± 3.39	17.42 ± 3.45	17.99 ± 3.43
Difficulties Engaging in Goal-Directed Behavior	16.56 ± 3.07	14.88 ± 3.36	15.22 ± 3.22
Impulse Control Difficulties	18.56 ± 3.49	14.98 ± 3.22	17.75 ± 3.35
Limited Access to Emotion Regulation Strategies	18.27 ± 2.49	16.42 ± 3.68	17.82 ± 3.18
Lack of Emotional Awareness	24.58 ± 3.94	24.20 ± 3.54	24.39 ± 3.73
Lack of Emotional Clarity	17.47 ± 3.02	15.54 ± 2.94	15.14 ± 2.90

To compare early maladaptive schemas and emotion regulation difficulties among adolescent boys and girls with and without marijuana use, multivariate analysis of variance (MANOVA) was used. Before using the analysis of variance, necessary assumptions such as the normal distribution of dependent variables, homogeneity of variance, homogeneity of regression slope, and homogeneity of the covariance matrices were examined. The Shapiro-Wilk test was used to assess the normal distribution of the dependent variables, and since the significance level of the Shapiro-Wilk test was greater than 0.05 for all variables, the distribution of the research variables was normal, and the assumption of normality was met. The Levene's test was used to examine the homogeneity of the variances of the dependent variables. Since the significance level for all variables was greater than 0.05, the variances of the groups in all research variables were equal, making the use of analysis of variance appropriate. Another assumption of analysis of variance is the equality of the variance-covariance matrices among the cells formed based on the effects between subjects. The Box's M test was used for this purpose. The results showed that the Box's M test was at a significance level greater than 0.05, thus confirming the homogeneity of the variance-covariance matrices.

The MANOVA test was used to analyze the effect of the group on early maladaptive schema dimensions. As shown in Table 5, the Wilks' Lambda test value was greater than 0.05, indicating a significant difference among the dependent variables by independent groups ($p < 0.05$; $F = 3.64$, Wilks' Lambda = 0.72). Based on the mean scores, this

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difference shows that the mean scores of early maladaptive schemas are higher among marijuana users compared to non-users. It can be stated that there is a significant difference between boys and girls who use marijuana and those who do not use marijuana in at least one of the dependent variables (early maladaptive schemas).

Table 5

MANOVA Results for Early Maladaptive Schema Dimensions

Test	Value	F	df Effect	df Error	Sig.	Effect Size
Pillai's Trace	0.39	3.64	15	85	0.006	0.36
Wilks' Lambda	0.72	3.64	15	85	0.006	0.36
Hotelling's Trace	0.45	3.64	15	85	0.006	0.36
Roy's Largest Root	0.45	3.64	15	85	0.006	0.36

Table 6

Results of the Comparison of Early Maladaptive Schema Dimensions between Two Groups

Source	Variable	SS	df	MS	F	Sig.	Eta Squared
Group	Emotional Deprivation	368.21	1	368.21	94.07	0.002	0.438
	Abandonment/Instability	350.08	1	350.08	38.29	0.001	0.394
	Mistrust/Abuse	408.36	1	408.36	119.76	0.001	0.596
	Social Isolation/Alienation	621.37	1	621.37	80.15	0.002	0.631
	Defectiveness/Shame	381.50	1	381.50	89.61	0.003	0.559
	Failure	483.69	1	483.69	125.39	0.001	0.672
	Dependency/Incompetence	562.60	1	562.60	73.11	0.001	0.394
	Vulnerability to Harm	458.67	1	458.67	165.56	0.001	0.562
	Enmeshment/Undeveloped Self	925.66	1	925.66	88.62	0.001	0.488
	Subjugation	972.06	1	972.06	54.73	0.002	0.607
	Self-Sacrifice	620.17	1	620.17	29.21	0.001	0.347
	Emotional Inhibition	359.54	1	359.54	78.93	0.001	0.495
	Unrelenting Standards/Hypercriticalness	540.39	1	540.39	105.68	0.008	0.486
	Entitlement	344.66	1	344.66	43.52	0.001	0.368
	Insufficient Self-Control/Self-Discipline	349.62	1	349.62	215.43	0.003	0.674

The results of the multivariate analysis of variance on the effects of the group on early maladaptive schema dimensions are presented in Table 5. According to the results, there is a significant difference between the two groups of boys and girls, marijuana users, and non-users in emotional deprivation ($F = 94.07$, $p < 0.01$), abandonment/instability ($F = 38.29$, $p < 0.01$), mistrust/abuse ($F = 119.76$, $p < 0.01$), social isolation/alienation ($F = 80.15$, $p < 0.01$), defectiveness/shame ($F = 89.61$, $p < 0.01$), failure ($F = 125.39$, $p < 0.01$), dependency/incompetence ($F = 73.11$, $p < 0.01$), vulnerability to harm ($F = 165.56$, $p < 0.01$), enmeshment/undeveloped self ($F = 88.62$, $p < 0.01$), subjugation ($F = 54.73$, $p < 0.01$), self-sacrifice ($F = 29.21$, $p < 0.01$), emotional inhibition ($F = 78.93$, $p < 0.01$), unrelenting standards/hypercriticalness ($F = 105.68$, $p < 0.01$), entitlement ($F = 43.52$, $p < 0.01$), and insufficient self-control/self-discipline ($F = 215.43$, $p < 0.01$).

The results of the multivariate analysis of variance to determine the significance of the mean differences of emotion regulation difficulties among adolescent boys and girls with and without marijuana use are presented in Table 7. The MANOVA test was used to analyze the effect of the group on the dimensions of emotion regulation difficulties. As shown in the table, the Wilks' Lambda test value was greater than 0.05, indicating a significant difference among the dependent variables by independent groups ($p < 0.05$; $F = 2.26$, Wilks' Lambda = 0.70). Based on the mean scores, this difference shows that the mean scores of emotion regulation difficulties are higher among marijuana users compared to non-users. It can be stated that there is a significant difference between boys and girls who use marijuana and those who do not use marijuana in at least one of the dependent variables (emotion regulation difficulties).

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Table 7

MANOVA Results for Emotion Regulation Difficulties Dimensions

Test	Value	F	df Effect	df Error	Sig.	Effect Size
Pillai's Trace	0.53	1.77	6	94	0.003	0.29
Wilks' Lambda	0.76	1.77	6	94	0.003	0.29
Hotelling's Trace	0.42	1.77	6	94	0.003	0.29
Roy's Largest Root	0.42	1.77	6	94	0.003	0.29

Table 8

Results of the Comparison of Emotion Regulation Difficulties Dimensions between Two Groups

Source	Variable	SS	df	MS	F	Sig.	Eta Squared
Group	Non-Acceptance of Emotional Responses	666.36	1	666.36	218.34	0.001	0.643
	Difficulties Engaging in Goal-Directed Behavior	1209.32	1	1209.32	861.72	0.001	0.596
	Impulse Control Difficulties	1103.28	1	1103.28	715.64	0.001	0.559
	Limited Access to Emotion Regulation Strategies	468.36	1	468.36	317.22	0.001	0.793
	Lack of Emotional Awareness	169.34	1	169.34	87.37	0.057	0.018
	Lack of Emotional Clarity	589.23	1	589.23	658.35	0.001	0.708

The results of the comparison of emotion regulation difficulties dimensions between two groups are presented in Table 7. The results indicate that the dimensions of non-acceptance of emotional responses ($F = 218.34$, $p < 0.01$), difficulties engaging in goal-directed behavior ($F = 861.72$, $p < 0.01$), impulse control difficulties ($F = 715.64$, $p < 0.01$), limited access to emotion regulation strategies ($F = 317.22$, $p < 0.01$), lack of emotional awareness ($F = 87.37$, $p < 0.01$), and lack of emotional clarity ($F = 658.35$, $p < 0.01$) differ significantly between the groups of adolescent boys and girls who use marijuana and those who do not. The scores for these dimensions are higher among the user group compared to the healthy group.

To compare the mean differences of early maladaptive schemas and emotion regulation difficulties in each group of marijuana users and healthy participants by gender (girls and boys) with a median score (based on the Likert scale number 3), a one-sample t-test was used. The results are presented in Table 9.

Table 9

Comparison of the Mean Differences of Early Maladaptive Schemas and Emotion Regulation Difficulties

Gender	Variable	t	df	Sig.	Mean Difference
Girls	Early Maladaptive Schemas	-2.14	15	0.001	0.42
	Emotion Regulation Difficulties	-1.29	6	0.001	0.56
Boys	Early Maladaptive Schemas	-1.76	15	0.03	0.29
	Emotion Regulation Difficulties	-1.68	6	0.001	0.46

According to the results of the one-sample t-test, there is a significant difference between the mean dimensions of early maladaptive schemas and the median score in the groups of girls and boys ($p < 0.01$); additionally, there is a significant difference between the mean dimensions of emotion regulation difficulties and the median score in the groups of girls and boys ($p < 0.01$).

4. Discussion and Conclusion

This study aimed to compare early maladaptive schemas and difficulties in emotion regulation among adolescent boys and girls with and without marijuana use. The results showed a significant difference in early maladaptive schemas between adolescent boys and girls with and without marijuana use. These findings align with prior studies (Ball, 1998; Brotchie et al., 2004; Efrati et al., 2023; Jamshidi et al., 2020; Lowery, 2019; Mc Donnell et al., 2018; Shorey et al., 2013).

In explaining the findings, it can be said that schemas and schematic processes affect our perception of ourselves and others, thus influencing our attitudes and behaviors in life. Consistent with the views of the aforementioned researchers,

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early maladaptive schemas can be considered one of the most important predictors of a tendency toward substance abuse. The presence of maladaptive cognitive schemas may distinguish between individuals who are satisfied with their lives and those who are less satisfied. Pessimistic views about life, such as believing that others will not empathize or understand us, will not meet our needs in a timely manner, or that close ones will not provide emotional support, along with beliefs that others will harm and lie to us, or feelings of being a failure in every aspect, all invoke negative emotions and reduce the individual's ability to cope with life's challenges. This ultimately leads to decreased life satisfaction and a tendency toward substance abuse (Efrati et al., 2023; Jamshidi et al., 2020; Lowery, 2019).

Early maladaptive schemas cause biases in interpreting events, manifesting in psychological pathology as distorted attitudes, incorrect assumptions, unrealistic goals, and expectations. These misinterpretations affect subsequent perceptions and evaluations. Since early maladaptive schemas are ineffective, they lead to dissatisfaction in life and pave the way for a tendency toward substance abuse (Mc Donnell et al., 2018).

Additionally, early maladaptive schemas are the deepest cognitive structures that manifest in relationships with the environment and others. Schemas are underlying assumptions or rules that control an individual's thoughts and behaviors and develop throughout their life. The content of schemas encompasses all aspects of an individual's life, whether conscious or unconscious. Schemas create the meaning and structure with which an individual interacts with the world (Jamshidi et al., 2020). Schemas are stored to be activated under specific conditions. When a schema is activated, it becomes the command center for negative automatic thoughts and negatively biases information processing. In fact, schemas are stored to be activated under specific conditions. Substance addiction is an event that may activate early maladaptive schemas rooted in childhood. People may turn to substance abuse for reasons such as deception, sexual tendencies, revenge, anger, and not following societal traditions and values due to their unawareness of their maladaptive schemas (Efrati et al., 2023).

It appears that individuals with early maladaptive schemas attempt to eliminate or deal with harmful events in a different manner, sometimes acting contrary to socially acceptable behavior to achieve their desires. This characteristic can lead individuals to feel deprived, consciously or unconsciously, and turn to substance abuse to fulfill their emotions and feelings (Efrati et al., 2023).

Another explanation could be that such behaviors typically arise in families where the hallmarks are extreme negligence, confusion, or a sense of superiority, instead of discipline, appropriate confrontation, reasonable limitations, responsibility, mutual cooperation, and goal setting. These individuals believe they are above others, have special rights, and do not feel obligated to adhere to the principles of reciprocal relationships that guide normal social interactions. Consequently, such individuals believe they have the right to turn to substance abuse in challenging situations, which is considered a logical and reasonable justification for them (Mc Donnell et al., 2018).

The results also indicated a significant difference in emotion regulation difficulties between adolescent boys and girls without marijuana use. These findings are consistent with prior findings (Aldao et al., 2010; Amini, 2023; Bahrebar et al., 2019; Cavicchioli et al., 2019; Clarke et al., 2020; Mc Donnell et al., 2018; Stellern et al., 2023; Weiss et al., 2015).

In explaining these findings, it can be said that addicted individuals have difficulties in recognizing their own and others' emotions, leading to problems in establishing positive, constructive, and guiding emotional relationships, which itself is a factor in their tendency towards substance abuse (Stellern et al., 2023; Weiss et al., 2015). Additionally, these individuals use non-constructive problem-solving methods when facing problems and emotions, leading them more towards substance use. Furthermore, after becoming addicted, due to the deepening physical and psychological dimensions of substance dependency and the brain damage caused in the prefrontal cortex, their cognitive and emotional problems become more complex (Cavicchioli et al., 2019).

It can also be stated that theorists believe individuals who cannot properly manage and control their emotions in the face of daily challenges and problems show more symptoms of psychological disorders and therefore have a higher tendency towards addiction (Bahrebar et al., 2019). Substance users have difficulties in regulating and managing their emotions. When faced with life challenges and problems, instead of using problem-solving strategies and controlling their negative emotions, they turn to substance use to soothe their psychological states. Substance use for these individuals is a means of regulating negative and unpleasant emotions, effectively an escape from reality and a way to cope with stress, depression, and anxiety (Bahrebar et al., 2019).

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Furthermore, individuals with poor emotion regulation are more prone to risky behaviors and use substances to alleviate their negative emotions. Poor emotion regulation increases negative outcomes such as susceptibility to addiction. Low emotion regulation causes individuals to think less about the consequences of their actions and to strive for immediate gratification. Such individuals use substances for instant pleasure and are likely to easily break their commitment to abstain from substances (Asiaban et al., 2018). Individuals with poor emotion regulation skills are unable to control substance use and turn to drugs to regulate their emotions. Poor emotion management increases the risk of substance abuse, while effective emotion management reduces it. The ability to manage emotions helps individuals use appropriate coping strategies in stressful situations where there is a high risk of substance use (Yakın et al., 2019).

If an individual has difficulties regulating their emotions and lacks the necessary skills, they cannot adopt appropriate coping strategies when exposed to stress, increasing their vulnerability to substance abuse. These individuals turn to substances to control the anxiety and depression symptoms caused by stressful events. For them, substance use serves as a coping response to stress. An anxious individual often experiences extreme distress and restlessness and cannot tolerate the situation for long. Therefore, to master their anxiety, they resort to ineffective emotional methods such as substance use. Addicted individuals are more likely than non-addicted individuals to engage in rumination due to anxiety and catastrophizing due to depression, resulting from poor physical, psychological, and social conditions (Thorberg & Lyvers, 2006).

Individuals who show higher levels of difficulty in emotion regulation are more likely to exhibit greater anxiety than others; due to learning weak emotion strategies, these individuals are more inclined to engage in risky behaviors such as substance abuse as a strategy to relieve their negative emotions. Therefore, difficulty in emotion regulation is an important factor in increasing the likelihood of addiction in these individuals. Moreover, difficulty in emotion regulation may be a potential explanation for how anxiety sensitivity in substance users affects their ability to control emotions, thus leading them towards substance (Seyedmousavi et al., 2021). In other words, individuals who cannot properly manage and control their emotions in the face of daily challenges and problems show more symptoms of psychological disorders, and therefore their substance use is higher.

5. Limitations & Suggestions

It should be noted that this study, like any other, had limitations, some of which are as follows and should be addressed in future research: The first limitation is related to single-method bias. The exclusive use of self-report questionnaires increases the likelihood of dishonesty and inaccuracy in responses, despite the researcher's care and the use of motivational methods, which reduces the construct validity of the study. Undoubtedly, intervening variables such as the influence of subcultures and socioeconomic conditions can affect the results of this study. The sample of this study consisted of adolescent boys and girls with and without marijuana use in Tehran, which limits the generalizability of the results to other individuals and locations.

To enhance the results of the study, it is suggested that other data collection methods, such as interviews and observations, be used. Future research should consider intervening variables such as the influence of subcultures and socioeconomic conditions. Future studies should include other age groups and samples from different communities and social environments. Future research should also include experimental and longitudinal studies. To improve emotion regulation skills, training courses should be held in schools for adolescents. Given the impact of early maladaptive schemas on the tendency to use substances, modifying these schemas can improve and enhance the mental health of adolescents, and therefore it is recommended that addiction prevention workshops focus on modifying these schemas.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

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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

All authors contributed equally.

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