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The Effectiveness of Schema Therapy on Reducing Depressive Symptoms and Modifying Early Maladaptive Schemas in Adolescents

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Adolescence is a critical period for identity formation, and the emergence of depression during this stage can predispose individuals to mood and functional disorders in adulthood. The present study aimed to investigate the effectiveness of schema therapy in reducing depressive symptoms and modifying early maladaptive schemas (EMSs) in adolescents. The research method was quasi-experimental with a pre-test/post-test design and a control group. The statistical population consisted of all adolescents with depressive symptoms referring to counseling centers in Tehran during the first half of 2021 (1400 SH). From this population, 30 adolescents were selected via convenience sampling and randomly assigned to the experimental group (n=15) and the control group (n=15). The experimental group received 10 sessions of 90-minute schema therapy intervention, while the control group received no intervention. Research instruments included the Beck Depression Inventory (BDI-II) and the Young Schema Questionnaire-Short Form (YSQ-SF). Data were analyzed using Analysis of Covariance (ANCOVA) via SPSS software. The results indicated that after controlling for pre-test scores, there was a significant difference between the two groups regarding depression (effect size: 52%) and early maladaptive schemas (effect size: 48%). Based on these findings, schema therapy—by focusing on unmet emotional needs and modifying dysfunctional mindsets—is considered an effective approach for reducing mood-related difficulties in adolescents.

Keywords
Schema Therapy, Depression, Early Maladaptive Schemas (EMSs), Adolescents

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Introduction

Depressive disorder in adolescence is one of the most challenging issues facing contemporary mental health systems, significantly impacting both academic and social functioning (Young et al., 2003). Adolescence is a period characterized by profound biological, cognitive, and identity-formation transformations. However, the onset of depression during this critical stage not only disrupts the natural developmental process but is also associated with severe consequences, such as social isolation, substance abuse, and, in the most severe cases, suicidal ideation and attempts. Global statistics indicate a rising prevalence of this disorder among adolescents; yet, the core issue is not merely its prevalence, but rather the recurrent and chronic nature of depression, which has posed significant challenges to classical treatments (Kennard et al., 2008).

Many classical therapeutic approaches, such as Cognitive-Behavioral Therapy (CBT), have played a vital role in explaining and treating depression by focusing on the modification of automatic thoughts and symptom management. While these treatments are often successful in the short term, high relapse rates among adolescents suggest that deeper roots within their psychological structure remain unaddressed. In this context, Schema Therapy—introduced by Young (1999)—focuses on identifying and modifying Early Maladaptive Schemas (EMS). According to this theory, the primary roots of persistent mood disorders lie within these schemas, which are deep, stable cognitive and emotional patterns formed during childhood and adolescence as a result of unmet core emotional needs. Modifying these early maladaptive schemas can lead to a reduction in emotional symptoms, including depression (Young et al., 2003; Van Vreeswijk et al., 2010). Empirical evidence has demonstrated that schema-based interventions are effective in reducing emotional difficulties and depressive symptoms (Van Vreeswijk, Broersen, & Nadort, 2012). Furthermore, maladaptive schema modes are associated with higher levels of depressive symptoms in adolescents, highlighting the clinical importance of schema-based interventions for this age group (Roelofs, Muris, & Lobbestael, 2016).

The majority of schema therapy studies have focused on adults and personality disorders; consequently, our knowledge regarding how this approach affects the simultaneous moderation of multiple schemas in depressed adolescents remains limited. Therefore, the present research seeks to answer this key question: Can an intervention that directly targets the underlying layers and developmental roots of an adolescent's suffering lead to a lasting change in their psychological structure and a subsequent significant reduction in depressive symptoms? In other words, to what

extent can Schema Therapy successfully moderate schemas across various domains within this specific age group?

Materials and Methods

The present study was quantitative research utilizing a quasi-experimental pretest-posttest design with a control group. The independent variable was "schema therapy," and the dependent variables were "early maladaptive schema scores" and "severity of depressive symptoms." The statistical population of the study consisted of all male and female adolescents aged 13 to 18 with depressive disorder who visited counseling and psychological service centers in Tehran during the first half of the Iranian calendar year 1400 (spanning approximately March to September 2021).

From this population, 30 individuals who met the inclusion criteria were selected via convenience sampling and randomly assigned to either the experimental group (n=15n = 15n=15) or the control group (n=15n = 15n=15).

Inclusion and Exclusion Criteria

Inclusion Criteria: A definitive diagnosis of depressive disorder by a psychiatrist based on the DSM-5; age range between 13 and 18 years; scoring above the clinical cutoff point on the Beck Depression Inventory (BDI-II); and obtaining written informed consent from both the adolescents and their parents.

Exclusion Criteria: Comorbid disorders such as psychosis or intellectual disability; substance abuse; missing more than two therapy sessions; and any sudden changes in the type or dosage of antidepressant medication during the study.

Research Instruments

Young Schema Questionnaire – Short Form (YSQ-SF): Developed by Jeffrey Young (1994), this self-report questionnaire measures early maladaptive schemas (EMS). The short form consists of 75 items assessing 15 schemas across 5 primary domains.

Structure: Responses are rated on a 6-point Likert scale (ranging from 1=completely false to 6=completely true). Higher scores in each schema indicate a greater severity of that schema in the individual's mind.

Assessed Domains: This instrument measures five domains: "Disconnection and Rejection," "Impaired Autonomy and Performance," "Impaired Limits," "Other-Directedness," and "Over vigilance and Inhibition."

Psychometric Properties: Young et al. (2003) reported Cronbach's alpha coefficients ranging from 0.76 to 0.93 for all schemas. In Iran, Ahi (2007) validated the questionnaire, reporting a Cronbach's alpha coefficient of 0.94 for the total scale, and coefficients between 0.62 and 0.80 for the subscales, confirming it as a highly reliable tool for evaluating schemas in the Iranian population.

2Beck Depression Inventory – Second Edition (BDI-II): The BDI-II is a self-report instrument used to measure the severity of depressive symptoms. It is a revised version of the original Beck instrument, updated by Beck, Steer, and Brown (1996) to align with the diagnostic criteria for depressive disorder in the DSM-IV (and subsequently DSM-5).

Structure: The inventory consists of 21 items assessing the cognitive, affective, and somatic symptoms of depression. Each item is rated on a 4-point scale ranging from 0 to 3. Total scores range from 0 to 63 (scores of 0–13 represent minimal depression, 14–19 mild, 20–28 moderate, and 29–63 severe).

Psychometric Properties: Beck et al. (1996) reported a Cronbach's alpha coefficient of 0.91 for this inventory. In Iran, Ghassemzadeh et al. (2004) estimated the test-retest reliability of the questionnaire to be 0.94 and its Cronbach's alpha to be 0.87. Due to its high sensitivity in capturing clinical changes over the course of treatment, this inventory is an exceptionally suitable tool for clinical research.

Procedure

The schema therapy intervention consisted of 10 weekly 90-minute sessions. The protocol was implemented based on Young's model (2003), focusing primarily on the domains of "Disconnection and Rejection," "Impaired Autonomy," and "Unrelenting Standards." The contents and techniques of each session were adjusted according to the standardized training protocol.

Data Analysis

To evaluate the effectiveness of the intervention and control for baseline differences between the groups, an Analysis of Covariance (ANCOVA) was conducted, using pretest scores as the covariate.

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Results

This section presents the empirical findings of the study. First, the demographic characteristics of the participants are described, followed by the descriptive statistics of the research variables across the assessment phases. Finally, the results of the Analysis of Covariance (ANCOVA) are presented to examine the therapeutic efficacy of Schema Therapy on adolescent depression and early maladaptive schemas. The statistical sample comprised 30 adolescents (aged 13 to 18 years) diagnosed with depressive disorder. The demographic details of the participants, including age and gender distribution, are summarized in Table 1.

Table 1. Demographic Characteristics of the Participants (N=30)

Demographic Variable	Category	Frequency (f)	Percentage (%)	Mean (M)	SD	Age Range
Gender	Female	16	53.0%	—	—	—
	Male	14	47.0%	—	—	—
Age	—	—	—	15.60	1.45	13–18 years

Descriptive statistics—including means (MMM) and standard deviations (SDSDSD)—for the severity of depressive symptoms (BDI-II) and Early Maladaptive Schemas (YSQ-SF) were computed using SPSS software. Table 2 provides a comparative overview of these metrics for both the experimental and control groups at pretest and posttest.

Table 2. Descriptive Statistics for Depression and Early Maladaptive Schemas by Group and Assessment Phase

Variable	Phase	Experimental Group (n=15) M±SD	Control Group (n=15) M±SD
Depression (BDI-II)	Pretest	24.30±3.90	23.80±4.10
	Posttest	14.20±3.50	23.10±3.85
Early Maladaptive Schemas (YSQ-SF)	Pretest	205.40±12.10	203.10±11.50
	Posttest	178.30±10.90	201.50±11.20

To determine whether the schema therapy intervention led to a statistically significant decrease in depressive symptoms and early maladaptive schemas, a one-way Analysis of Covariance (ANCOVA) was performed.

Prior to running the ANCOVA, its underlying statistical assumptions were tested and verified:

Normality: The Shapiro-Wilk test confirmed that the pretest and posttest scores for both variables followed a normal distribution (p>.05p > .05p>.05).

Homogeneity of Variances: Levene's test indicated that the assumption of equal variances across groups was met for both posttest depression (F(1,28)=0.42,p=.522F(1, 28) = 0.42, p = .522F(1,28)=0.42,p=.522) and posttest schemas (F(1,28)=0.28,p=.601F(1, 28) = 0.28, p = .601F(1,28)=0.28,p=.601).

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Homogeneity of Regression Slopes: The interaction between the covariate (pretest) and the independent variable (group) was non-significant for both depression (F(1,26)=1.04,p=.317F(1, 26) = 1.04, p = .317F(1,26)=1.04,p=.317) and schemas (F(1,26)=0.95,p=.339F(1, 26) = 0.95, p = .339F(1,26)=0.95,p=.339), satisfying the assumption of parallel regression lines. Having met all prerequisite assumptions, the ANCOVA was conducted. In this model, pretest scores were entered as the covariate to control for any baseline differences between the groups. The results are presented in Table 3.

Table 3. ANCOVA Results Comparing Posttest Depression and Schema Scores Between Groups (with Pretest Controlled)

Dependent Variable	Source of Variation	SS	DF	MS	F	P	Partial η2
Depression (Posttest)	Pretest (Covariate)	78.25	1	78.25	6.35	.018	.19
	Group (Intervention)	359.80	1	359.80	29.20	< .001	.52
	Error	295.70	24	12.32	—	—	—
Early Maladaptive Schemas (Posttest)	Pretest (Covariate)	482.10	1	482.10	7.10	.014	.22
	Group (Intervention)	1690.70	1	1690.70	24.90	< .001	.48
	Error	1630.10	24	67.92	—	—	—

After controlling for the effect of pretest scores, the main effect of the treatment group on posttest depression was highly significant, F (1,24) = 29.20, p<.001). This demonstrates that the schema therapy intervention significantly reduced depressive symptoms in the experimental group compared to the control group. The partial eta squared (η=.52) indicates a very large effect size, showing that 52% of the variance in posttest depression scores is directly attributable to the schema therapy intervention.

Early Maladaptive Schemas (YSQ-SF): After controlling for baseline pretest scores, the main effect of the treatment group on posttest early maladaptive schemas was also highly significant, F (1,24) = 24.90). This indicates that schema therapy succeeded in significantly moderating and modifying the core cognitive and emotional maladaptive schemas of the adolescents. The partial eta squared (η=.48) reveals a large effect size, indicating that 48% of the variance in posttest schema severity is accounted for by the therapeutic intervention.

In summary, the inferential analysis confirms that targeting the underlying developmental layers of psychological distress through Schema Therapy leads to a substantial, statistically significant, and clinically meaningful reduction in both the primary maladaptive schemas and the overall severity of depression in adolescents.

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Discussion

In explaining the efficacy of Schema Therapy in reducing depressive symptoms and modifying Early Maladaptive Schemas (EMS) among adolescents, it can be argued that this therapeutic approach operates beyond simple clinical symptom management by targeting the core architecture of the personality. Since maladaptive schemas act as rigid cognitive filters, they perpetuate biased information processing and the negative interpretation of life events. The therapeutic intervention addressed these underlying cognitive structures, effectively removing the "dark glasses" through which the adolescent perceived themselves and their future. Specifically, when schemas such as "Defectiveness/Shame" or "Emotional Deprivation" are moderated during treatment, the adolescent is liberated from the cycle of automatic negative thoughts. They develop a newfound capacity to recognize their own competencies; this shift in epistemological structure leads directly to a reduction in depressive mood.

Furthermore, a significant portion of the success observed in working with this demographic is attributable to the use of experiential and emotion-focused techniques. In this approach, the therapist does not rely solely on cognitive restructuring; rather, by employing methods such as imagery rescripting and limited reparenting, the therapist accesses deep emotional layers and addresses unmet childhood needs. This process allows the adolescent to safely express suppressed anger and foundational grief in a secure therapeutic environment. By experiencing a "Healthy Adult" model within the safety of the therapy room, the adolescent is able to repair past emotional voids. Consequently, the weakening of punitive and critical internal voices creates the necessary psychological space for self-compassion to emerge, thereby destabilizing the emotional infrastructure that sustains depression.

Moreover, the shift in maladaptive coping styles played a substantial role in the durability of these outcomes. By identifying coping responses such as avoidance and surrender—which are highly prevalent among depressed adolescents—Schema Therapy helped participants adopt more adaptive and assertive behaviors instead of resorting to social withdrawal or the unconditional acceptance of defeat. This behavioral shift not only enhanced the adolescents' interpersonal relationships but also facilitated an increase in positive environmental reinforcements, replacing feelings of helplessness with a renewed sense of self-efficacy.

Finally, given the heightened neurocognitive and psychological plasticity characteristic of the adolescent period, this intervention was able to guide the clients' developmental trajectory away

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from a vulnerable identity toward one that is coherent and resilient. The ultimate result of this transformation is a statistically significant reduction in depression scale scores and a marked improvement in overall mental health.

Implications for Future Research and Practice

The findings of the present study suggest that clinical practice for adolescent depression should prioritize a transition from symptom-focused treatments toward deep-structure interventions. Practitioners are encouraged to integrate schema-based assessments into their initial diagnostic phase to tailor interventions more precisely to the specific schema domains of each adolescent. Future research would benefit from longitudinal follow-ups to determine if the changes in schema structure and coping mechanisms remain stable as these adolescent's transition into early adulthood, thereby further validating the long-term protective effects of Schema Therapy against recurrent depressive episodes.

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Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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