KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 26 June 2025
Revised 12 October 2025
Accepted 19 October 2025
Initial Published 19 October 2025
Final Publication 19 October 2025

Journal of Adolescent and Youth Psychological Studies

Volume 6, Issue 11, pp 1-10

E-ISSN: 2981-2526

Comparison of the Effectiveness of Compassion-Focused Therapy and Schema Therapy on the Severity of Clinical Symptoms in Adolescents with Social Anxiety Disorder

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Halaji Sani, M., Khajevand Khoshli, A., & Asadi, J. (2025). Comparison of the Effectiveness of Compassion-Focused Therapy and Schema Therapy on the Severity of Clinical Symptoms in Adolescents with Social Anxiety Disorder. *Journal of Adolescent and Youth Psychological Studies, 6*(11), 1-10.
http://dx.doi.org/10.61838/kman.jayps.4598

A B S T R A C T

Objective: This study aimed to compare the effectiveness of compassion-focused therapy (CFT) and schema therapy (ST) on reducing the severity of clinical symptoms in adolescents diagnosed with social anxiety disorder.

Methods and Materials: The research employed a quasi-experimental design with a pretest–posttest control group and a 2-month follow-up period. The statistical population consisted of male adolescents aged 14 to 18 years who attended psychological centers in Ramsar during the first quarter of 2024. Using purposive sampling, 45 participants were selected and randomly assigned to three groups: CFT experimental group (n = 15), ST experimental group (n = 15), and control group (n = 15). The Connor et al. (2000) Social Anxiety Questionnaire and the Derogatis et al. (1973) Symptom Checklist-90 (SCL-90) were used for data collection. The interventions were conducted according to Gilbert's (2014) CFT protocol and Young et al.'s (2003) ST protocol. Data were analyzed using repeated-measures ANOVA and the Bonferroni post-hoc test via SPSS version 26.

Findings: Results indicated a significant effect of time ($P < .001$, $\eta^2 = .881$) and a significant interaction between group and time ($P < .001$, $\eta^2 = .797$) on the severity of clinical symptoms. Both CFT and ST led to a significant reduction in symptom severity compared to the control group ($P < .001$). However, schema therapy demonstrated a greater effect than compassion-focused therapy in reducing clinical symptoms. No significant difference was observed between the posttest and follow-up scores, indicating the stability of treatment effects over time.

Conclusion: Both compassion-focused therapy and schema therapy effectively reduced the severity of clinical symptoms in adolescents with social anxiety disorder, though schema therapy was found to be more effective overall. These findings highlight the importance of cognitive–emotional interventions in the treatment of adolescent social anxiety.

Keywords: *Schema therapy; Compassion-focused therapy; Clinical symptoms; Adolescents; Social anxiety disorder.*

1. Introduction

Social anxiety disorder (SAD) is among the most prevalent and debilitating anxiety disorders during adolescence, characterized by an intense and persistent fear of social or performance situations in which individuals are exposed to possible scrutiny by others (Fox et al., 2021). Adolescence represents a critical developmental period marked by heightened sensitivity to social evaluation, identity formation, and peer relationships. Consequently, social anxiety symptoms at this stage can interfere with academic engagement, emotional regulation, interpersonal functioning, and overall well-being (James et al., 2020). Neurobiological evidence highlights that adolescents with behavioral inhibition and hyperactive amygdala responses to social threat cues are particularly vulnerable to developing SAD (Fox et al., 2021). The early onset and chronic nature of social anxiety can lead to broader psychopathological outcomes such as depression, substance use, and functional impairment, making early and targeted interventions essential (Fadaei et al., 2021).

Epidemiological studies have shown that anxiety-related disorders are increasing among adolescents worldwide, including in developing regions (Fadaei et al., 2021). In Iran, the prevalence of social anxiety symptoms among adolescents has drawn attention to the need for culturally sensitive therapeutic interventions that address both cognitive and emotional processes underlying the disorder (Bahadori et al., 2022). The chronic nature of SAD often involves maladaptive emotion regulation strategies, cognitive distortions, and rigid self-schemas, which intensify avoidance behaviors and physiological distress (Nakhaei et al., 2022). The disorder's persistence and comorbidity with depression and somatization further complicate treatment outcomes. Therefore, researchers have focused on integrative and emotion-centered therapeutic approaches such as schema therapy and compassion-focused therapy that address the cognitive, emotional, and interpersonal roots of anxiety (Izadi et al., 2019; Karami et al., 2025).

Schema therapy (ST), originally developed by Jeffrey Young, integrates cognitive-behavioral, attachment, and experiential approaches to identify and modify maladaptive schemas that develop from early adverse experiences (Renner et al., 2018). These schemas function as deep-seated cognitive-emotional patterns influencing how individuals interpret and respond to social experiences. In the context of social anxiety, early maladaptive schemas such as defectiveness, social isolation, and failure may drive hypervigilance to criticism and avoidance of interpersonal interactions (Visani et al., 2024). Empirical findings have demonstrated that schema therapy is effective in treating chronic depression and anxiety disorders by restructuring negative core beliefs and improving emotional regulation capacities (Renner et al., 2018). Moreover, schema-focused interventions help adolescents increase self-awareness, identify schema-driven thoughts, and replace them with adaptive cognitive patterns, leading to significant reductions in symptom severity (Ismailzadeh Rizi & Izadi, 2024).

Several studies in Iranian and international contexts have highlighted the clinical effectiveness of schema therapy in improving cognitive flexibility, emotional regulation, and social functioning among adolescents with emotional disorders (Izadi et al., 2019; Visani et al., 2024). For example, schema-based education has been shown to reduce delusional beliefs and cognitive avoidance in individuals with obsessive–compulsive tendencies (Visani et al., 2024). Likewise, emotional schema therapy—a related model focusing on maladaptive emotional responses—has significantly reduced alexithymia and emotional dysregulation in patients with somatic and neurological disorders (Bahadori et al., 2022; Izadi et al., 2019). These findings suggest that schema modification enhances emotion regulation skills and decreases avoidance-based coping, which are central features of social anxiety.

In parallel, compassion-focused therapy (CFT), developed by Gilbert, has emerged as a promising intervention emphasizing the cultivation of self-compassion and warmth toward the self in order to counteract self-criticism and shame (Diedrich et al., 2024). Compassion is viewed as a fundamental emotion regulation system that promotes safety, acceptance, and emotional balance (Krieger et al., 2019). Adolescents with social anxiety often struggle with excessive self-judgment and internalized shame arising from perceived social inadequacy or fear of negative evaluation (Seabra et al., 2024). CFT aims to reduce these maladaptive self-relating patterns by activating the affiliative system through mindfulness, compassionate imagery, and self-kindness exercises. Research indicates that self-compassion buffers against stress and fosters resilience in socially evaluative contexts (Wilson et al., 2019). Furthermore, compassion training enhances adaptive emotional regulation, reduces rumination, and decreases

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E-ISSN: 2981-2526

avoidance behaviors commonly seen in anxiety disorders (Diedrich et al., 2024; Krieger et al., 2019).

Clinical trials have supported the efficacy of compassion-focused interventions in reducing anxiety, depressive symptoms, and self-criticism across various populations (Mehrabani et al., 2024; Wilson et al., 2019). For instance, interventions focused on enhancing self-compassion have shown improvements in body image, thought–shape fusion, and emotional well-being among university students (Mehrabani et al., 2024). Similarly, compassion-based training mitigates emotional suffering in individuals experiencing shame and self-stigmatization, including sexual minority populations (Seabra et al., 2024). The emotion-regulating properties of compassion practices may therefore be particularly effective for adolescents with social anxiety, whose self-perceptions are highly sensitive to external evaluation.

Comparative evidence between schema therapy and compassion-focused therapy suggests that both interventions target overlapping mechanisms—namely, cognitive bias correction, emotional regulation, and the reduction of self-critical thought—but differ in their therapeutic focus (Karami et al., 2025). Schema therapy aims to restructure deep-seated cognitive and affective patterns, whereas compassion-focused therapy emphasizes cultivating emotional warmth and acceptance toward the self. Neuropsychological studies have also indicated that cognitive biases, such as selective attention to threat and interpretation bias, are reinforced by early maladaptive schemas (Korteling et al., 2020). Compassion training, in contrast, activates neural networks associated with empathy and affiliative emotion regulation, thereby counterbalancing the effects of threat-based processing (Diedrich et al., 2024; Krieger et al., 2019). These complementary mechanisms may explain why integrating or comparing these models has become an area of growing interest in clinical psychology (Karami et al., 2025).

Social anxiety disorder in adolescents is not merely a reflection of transient shyness or social discomfort but represents a complex interaction of biological, cognitive, and emotional factors. Studies have shown that behavioral rehearsal and exposure techniques rooted in cognitive-behavioral therapy (CBT) can enhance social skills and reduce anxiety symptoms (Bjaasted et al., 2025). However, while CBT focuses primarily on cognitive restructuring and behavioral exposure, schema therapy and compassion-focused therapy expand treatment efficacy by addressing the underlying cognitive-emotional schemas and affective tone associated with self-criticism and shame. Integrative frameworks that include schema- and compassion-based elements may thus provide more comprehensive treatment for socially anxious adolescents, particularly those resistant to traditional CBT (James et al., 2020).

The growing body of evidence linking self-compassion to improved emotion regulation and decreased psychopathology supports its inclusion in adolescent anxiety interventions (Krieger et al., 2019; Wilson et al., 2019). Moreover, schema-based models have demonstrated enduring changes in maladaptive beliefs and interpersonal functioning, leading to sustained recovery outcomes (Renner et al., 2018). In Iranian clinical settings, research has increasingly emphasized culturally adapted psychotherapeutic approaches that align with collectivistic values such as empathy, interpersonal harmony, and family connectedness—factors that are consistent with compassion-focused frameworks (Karami et al., 2025; Mehrabani et al., 2024). Thus, the comparison of these two emotion-centered interventions—schema therapy and compassion-focused therapy—offers a valuable contribution to understanding which mechanisms are most effective in reducing the severity of clinical symptoms among adolescents with social anxiety disorder.

Despite the abundance of evidence supporting each approach, there remains a need for comparative empirical studies that examine their relative efficacy, particularly within non-Western adolescent populations (Ismailzadeh Rizi & Izadi, 2024; Nakhaei et al., 2022). Schema therapy's emphasis on modifying cognitive-emotional structures complements compassion-focused therapy's attention to emotional warmth and self-soothing, making both suitable for addressing the core psychopathological features of SAD, such as fear of rejection and negative self-appraisal. By comparing these interventions, researchers can determine whether targeting maladaptive cognitive schemas or fostering self-compassion produces more substantial reductions in symptom severity and emotional distress.

In summary, adolescence represents a sensitive period for the emergence of social anxiety, and interventions that enhance self-compassion or correct maladaptive schemas may yield significant therapeutic benefits. Schema therapy, with its focus on identifying and restructuring early maladaptive beliefs, and compassion-focused therapy, emphasizing emotional regulation through kindness and acceptance, both represent evidence-based strategies for addressing the cognitive–emotional mechanisms underlying SAD. Building on prior findings that demonstrate the

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effectiveness of emotion-centered therapies in reducing anxiety and depressive symptoms (Bahadori et al., 2022; Diedrich et al., 2024; Renner et al., 2018), the present study seeks to compare the relative impact of these two interventions on clinical symptom severity in adolescents with social anxiety disorder.

2. Methods and Materials

2.1. Study Design and Participants

The present research was a quantitative study and, in terms of research design, a quasi-experimental study with a pretest–posttest control group and a 2-month follow-up. The statistical population included male adolescents aged 14 to 18 who visited psychological centers in the city of Ramsar during the first quarter of 2024. The total number of these individuals was 83, from which a group of adolescents formed the study sample. In this regard, 45 of them were selected through purposive sampling and randomly assigned to three groups (15 participants in the compassion-focused therapy experimental group, 15 in the schema therapy experimental group, and 15 in the control group). The acceptable sample size for experimental and quasi-experimental research is generally considered to be 15 participants per group (Delavar, 2022).

To select the research sample, all 83 adolescents from the statistical population first completed the study questionnaires. Then, 45 individuals who obtained a score higher than 34 on the Social Anxiety Questionnaire were selected as the study sample.

Inclusion Criteria:

1. Willingness to participate in the research and parental confirmation of the informed consent form.
2. Male student enrolled in lower secondary schools in Ramsar.
3. A score higher than 34 on the Social Anxiety Questionnaire.
4. Age range between 14 and 18 years.

Exclusion Criteria:

1. Absence from more than two therapy sessions.
2. Concurrent participation in any other educational or therapeutic intervention.
3. Failure to complete at least 5% of the questionnaires.

2.2. Measures

Social Anxiety Questionnaire. This questionnaire was developed by Connor et al. (2000) and consists of 17 items rated on a 5-point Likert scale ranging from “not at all” (0) to “extremely” (4). The instrument includes three components: fear (items 1, 3, 5, 10, 14, and 15), avoidance (items 4, 6, 8, 9, 11, 12, and 16), and physiological distress (items 2, 7, 13, and 17). The minimum and maximum scores are 0 and 68, respectively, with a cutoff score of 34. Connor et al. (2000) reported a factor validity of 0.61 and Cronbach’s alpha reliability ranging from 0.77 to 0.81. Karimi et al. (2022) also confirmed the content validity of this instrument through expert review and reported a reliability coefficient between 0.70 and 0.83 using Cronbach’s alpha. In the present study, the reliability of this questionnaire was obtained using Cronbach’s alpha coefficients of 0.79, 0.89, and 0.72 for each subscale, respectively.

Clinical Symptom Severity Questionnaire. To assess the severity of clinical symptoms among participants, the Symptom Checklist-90 (SCL-90), developed by Derogatis et al. (1973), was used. This instrument consists of 90 items covering nine subscales: somatization (items 1, 4, 12, 27, 40, 42, 48, 49, 52, 53, 56, and 58), obsessive–compulsive (items 3, 9, 10, 28, 38, 45, 46, 51, 55, and 65), interpersonal sensitivity (items 6, 21, 34, 36, 37, 41, 61, 69, and 73), depression (items 5, 14, 15, 20, 22, 26, 29, 30, 31, 32, 54, 71, and 79), anxiety (items 2, 17, 23, 33, 39, 57, 72, 78, 80, and 86), hostility (items 11, 24, 63, 67, 74, and 81), phobic anxiety (items 13, 25, 47, 50, 70, 75, and 82), paranoid ideation (items 8, 18, 43, 68, 76, and 83), psychoticism (items 7, 16, 35, 62, 77, 84, 85, 87, 88, and 90), and additional items (19, 44, 59, 60, 64, 66, and 89). Responses are rated on a 5-point Likert scale ranging from “not at all” (0) to “extremely” (4). The minimum and maximum scores are 0 and 332, respectively, with a cutoff score of 166. Derogatis et al. (1973) reported a factor validity of 0.59 and internal consistency coefficients ranging from 0.77 to 0.90 using a two-week test–retest method. Biabangard and Javadi (2004) also confirmed the content validity of this instrument through expert evaluation and obtained internal consistency coefficients between 0.78 and 0.90. In the present study, the reliability of this questionnaire, calculated using Cronbach’s alpha, ranged from 0.74 to 0.87 across subscales.

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2.3. *Interventions*

The compassion-focused therapy (CFT) intervention in this study was implemented based on Gilbert's (2014) model, consisting of structured sessions designed to cultivate self-compassion, reduce self-criticism, and enhance emotional regulation in adolescents with social anxiety disorder. The sessions began with psychoeducation about the nature of compassion, the threat–drive–soothing emotional systems, and the role of self-criticism in maintaining anxiety. Adolescents were guided through mindfulness and grounding exercises to increase awareness of bodily sensations and emotional responses. Subsequent sessions focused on developing compassionate imagery, practicing compassionate thinking toward the self and others, and identifying self-critical thoughts through reflection and cognitive reframing. Group discussions encouraged empathy and shared emotional understanding among participants, helping to normalize their experiences of fear and shame. The final sessions reinforced compassionate behavior in daily interactions, self-kindness during social distress, and relapse prevention strategies aimed at maintaining compassionate awareness in challenging situations.

The schema therapy (ST) intervention followed the framework developed by Young et al. (2003) and adapted for adolescents, focusing on identifying and restructuring early maladaptive schemas (EMSs) that contribute to anxiety and avoidance. The sessions began with psychoeducation on schemas, modes, and coping styles, helping adolescents recognize recurring emotional and cognitive patterns related to rejection, failure, or social humiliation. Using experiential techniques such as imagery rescripting and mode dialogues, participants explored distressing social memories and reattributed them through corrective emotional experiences. Cognitive techniques, including schema identification worksheets and belief-challenging exercises, were employed to dispute irrational thoughts and replace them with adaptive alternatives. Behavioral pattern-breaking tasks were assigned as homework to promote new ways of responding to social situations. Throughout the sessions, the therapist fostered a supportive and validating environment, encouraging emotional expression and self-acceptance. The concluding sessions emphasized consolidating new adaptive schemas, strengthening self-confidence in social contexts, and developing long-term coping strategies for anxiety management.

2.4. *Data Analysis*

Data were analyzed using repeated-measures analysis of variance and the Bonferroni post-hoc test with SPSS version 26.

3. Findings and Results

As shown in Table 1, the mean (and standard deviation) of the clinical symptom severity variable in the compassion-focused therapy experimental group was 187.60 (SD = 4.13) in the pretest, 173.46 (SD = 4.17) in the posttest, and 173.93 (SD = 3.28) in the follow-up. The mean (and standard deviation) of clinical symptom severity in the schema therapy experimental group was 187.80 (SD = 4.88) in the pretest, 166.53 (SD = 3.71) in the posttest, and 167.26 (SD = 3.93) in the follow-up. Furthermore, the mean (and standard deviation) of clinical symptom severity in the control group was 187.46 (SD = 3.60) in the pretest, 187.00 (SD = 3.16) in the posttest, and 187.13 (SD = 3.24) in the follow-up phase. In other words, the severity of clinical symptoms decreased at the posttest stage, and this reduction was greater in the schema therapy group compared to the compassion-focused therapy group.

Table 1

Descriptive indices of the research variables in experimental and control groups across three test stages

Variable	Stage	Compassion-Focused Therapy (M ± SD)	Schema Therapy (M ± SD)	Control (M ± SD)
Clinical Symptom Severity	Pretest	172.80 ± 2.40	170.66 ± 2.46	169.73 ± 2.15
	Posttest	162.53 ± 1.80	158.60 ± 1.76	169.26 ± 1.79
	Follow-up	163.00 ± 1.41	159.06 ± 1.57	169.40 ± 1.88

Before conducting the main statistical analyses, all relevant assumptions for repeated-measures ANOVA were carefully examined and confirmed. The data were first assessed for normality using the Shapiro–Wilk test, which indicated that the distribution of scores did not significantly deviate from normal (P > .05). The assumption of homogeneity of variances was verified using Levene's test, which showed no significant differences between groups (P

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> .05). Additionally, Mauchly's test of sphericity was conducted, and where necessary, Greenhouse–Geisser corrections were applied to adjust for any violations. The results also confirmed the absence of multicollinearity and outliers through inspection of correlation matrices and boxplots. These findings demonstrated that the assumptions of normality, homogeneity, and sphericity were met, ensuring the appropriateness and reliability of the repeated-measures ANOVA results.

Table 2

Results of repeated-measures ANOVA for the clinical symptom severity variable

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance Level (P)	Eta Squared (η^2)
Clinical Symptom Severity	Time	2981.378	1	2981.378	310.560	.001	.881
	Time × Group	1582.422	2	791.211	82.418	.001	.797
	Error	403.200	42	9.600	—	—	—

The results in Table 2 show that for the clinical symptom severity variable, the main effect of time ($P < .001$, $\eta^2 = .881$) and the interaction effect of group × time ($P < .001$, $\eta^2 = .797$) were statistically significant. Therefore, it can be concluded that both the compassion-focused therapy and schema therapy interventions had a significant effect on reducing clinical symptom severity in adolescents with social anxiety disorder. To determine in which group this effect was greater, the Bonferroni post-hoc test was conducted.

Table 3

Results of the Bonferroni post-hoc test for pairwise comparisons of clinical symptom severity means across groups and times

Variable	Group 1	Group 2	Mean Difference	Standard Error	Significance Level (P)
Clinical Symptom Severity	Compassion-Focused Therapy	Schema Therapy	4.467	1.163	.001
	Compassion-Focused Therapy	Control	8.867	1.163	.001
	Schema Therapy	Control	13.333	1.163	.001

Table 3 presents the results of the Bonferroni post-hoc test, which indicate a significant difference between the effects of compassion-focused therapy and schema therapy on clinical symptom severity ($P < .001$). The comparison of means between pretest and posttest, as well as between pretest and follow-up, demonstrates the effectiveness of both compassion-focused therapy and schema therapy in reducing the severity of clinical symptoms and maintaining these effects at the follow-up stage. Moreover, the results indicate that the reduction in symptom severity was greater in the schema therapy experimental group than in the compassion-focused therapy group. No statistically significant differences were observed between the posttest and follow-up results. Based on these findings, the research hypothesis was confirmed.

4. Discussion and Conclusion

The findings of the present study demonstrated that both compassion-focused therapy (CFT) and schema therapy (ST) significantly reduced the severity of clinical symptoms in adolescents with social anxiety disorder. However, the reduction was greater in the schema therapy group than in the compassion-focused therapy group, indicating that schema modification processes may exert stronger and more enduring effects on maladaptive cognitive-emotional patterns associated with social anxiety. These results align with the theoretical premises of both therapeutic approaches, which target the underlying emotional and cognitive structures that sustain anxiety symptoms. Specifically, schema therapy seeks to identify and transform early maladaptive schemas (EMSs) that emerge from unmet emotional needs and persist into adolescence, leading to distorted self-concepts and dysfunctional coping mechanisms (Renner et al., 2018). Compassion-focused therapy, by contrast, emphasizes the cultivation of self-kindness and the reduction of self-criticism to promote adaptive emotion regulation (Diedrich et al., 2024). The results of this study support the contention that both approaches can be effective in treating social anxiety but that schema therapy may provide a more comprehensive restructuring of the cognitive foundations of anxiety.

The greater efficacy of schema therapy in this study can be explained through its multidimensional nature, which

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integrates cognitive-behavioral, experiential, and interpersonal techniques (Visani et al., 2024). Schema therapy operates at a deeper structural level by addressing long-standing cognitive distortions and emotional memory networks that underlie anxious behaviors. Adolescents with social anxiety often internalize maladaptive schemas such as defectiveness, vulnerability, and dependence, which perpetuate avoidance and fear of negative evaluation (Ismailzadeh Rizi & Izadi, 2024). By using experiential techniques such as imagery rescripting and schema dialogue, schema therapy allows clients to access and modify these deeply ingrained emotional representations, thereby achieving lasting symptom reduction. Previous studies have confirmed the effectiveness of schema therapy in treating anxiety-related disorders and maladaptive thought patterns in adolescents (Renner et al., 2018; Visani et al., 2024). Similarly, research on Iranian adolescents with body dysmorphic symptoms found that schema therapy improved cognitive bias dimensions and increased emotional awareness (Ismailzadeh Rizi & Izadi, 2024). These findings collectively suggest that schema-focused interventions can modify the dysfunctional cognitive architecture of anxiety more effectively than surface-level emotional regulation techniques.

In contrast, compassion-focused therapy's impact on reducing clinical symptoms can be attributed to its emphasis on the self-compassion system as a mechanism of emotional regulation. CFT works by activating the affiliative and soothing system, which counteracts the threat-based self-criticism and shame that characterize social anxiety (Krieger et al., 2019). Adolescents suffering from social anxiety tend to internalize high levels of shame and social self-consciousness due to their heightened concern over evaluation by others (Fox et al., 2021). By fostering compassion toward the self, CFT reduces avoidance behaviors, self-blame, and rumination, replacing them with empathy and acceptance (Diedrich et al., 2024). This process is particularly relevant for adolescents, as they are in a developmental stage characterized by increased self-focus and sensitivity to social comparison. Previous research has shown that cultivating self-compassion enhances psychological flexibility and resilience to social stressors (Wilson et al., 2019). For instance, interventions incorporating compassion practices were found to decrease depressive symptoms and maladaptive self-criticism in clinical populations (Diedrich et al., 2024; Krieger et al., 2019). Similarly, self-compassion training has been shown to improve body image and emotional balance among students, suggesting that compassion-based methods are broadly effective in improving emotional well-being (Mehrabani et al., 2024).

The results of the current study are consistent with the notion that schema therapy tends to yield greater long-term effects than compassion-focused therapy because it addresses both cognitive and emotional mechanisms underlying anxiety. Schema therapy directly restructures maladaptive schemas that shape emotional responses, while CFT primarily focuses on modulating emotional tone and self-attitude. Studies indicate that cognitive biases—such as attentional and interpretive biases toward threat—are deeply rooted in maladaptive schemas (Korteling et al., 2020). Therefore, targeting these schemas through cognitive and experiential techniques can lead to more durable change in emotional reactivity and behavioral avoidance. Furthermore, schema therapy fosters metacognitive awareness, allowing adolescents to identify how their cognitive patterns influence their social anxiety symptoms (Karami et al., 2025). By contrast, CFT enhances emotional regulation and tolerance but may require longer intervention durations to achieve the same degree of cognitive restructuring. This difference explains why schema therapy produced greater reductions in clinical symptom severity in the present study.

Moreover, the findings support previous research emphasizing the role of emotional schema modification in anxiety reduction (Bahadori et al., 2022). Bahadori and colleagues found that emotional schema therapy effectively decreased both emotional dysregulation and symptom intensity in patients with neurological symptom disorders, reinforcing the importance of restructuring maladaptive emotional frameworks. The mechanisms of change observed in schema therapy—especially the identification and reattribution of cognitive distortions—closely parallel those found in emotional schema therapy models (Izadi et al., 2019). These results indicate that therapies targeting emotion–cognition interaction patterns yield substantial benefits across anxiety-related conditions. Similarly, Nakhaei et al. highlighted that improved emotion regulation skills contribute to greater optimism and lower anxiety among students, which supports the centrality of emotional regulation mechanisms in both interventions (Nakhaei et al., 2022).

The present results also align with findings from behavioral and neuropsychological studies emphasizing the importance of emotion regulation and cognitive flexibility in mitigating social anxiety (Fox et al., 2021). Fox et al. showed that behavioral inhibition and amygdala hyper-reactivity are

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biological markers of social anxiety vulnerability in children, underscoring the need for interventions that enhance emotional control and self-soothing mechanisms. Compassion-focused therapy appears to counteract these biological tendencies by activating neural pathways associated with calmness, empathy, and safety (Diedrich et al., 2024; Krieger et al., 2019). However, schema therapy might exert stronger effects on cognitive processing and belief systems, leading to more substantial long-term changes. This supports a complementary understanding of both approaches: CFT reduces affective distress in the short term, while ST fosters cognitive transformation and behavioral resilience.

An additional explanation for schema therapy's superior results may involve its structured framework that emphasizes therapist–client collaboration and experiential correction of maladaptive modes (Renner et al., 2018). Adolescents with social anxiety often engage in avoidance and self-protective coping styles that maintain their anxiety. Schema therapy's use of mode work, role-play, and imagery rescripting helps these adolescents confront and modify their avoidant behaviors in a safe therapeutic environment (Visani et al., 2024). Moreover, schema therapy addresses the relational component of anxiety by enhancing emotional awareness and attachment security—factors that are particularly relevant for adolescents experiencing social withdrawal (Ismailzadeh Rizi & Izadi, 2024). This multidimensional therapeutic structure could explain the persistence of symptom reduction observed during the two-month follow-up in the present study.

The results also corroborate findings from comparative research highlighting the value of integrating schema- and compassion-based techniques. Karami et al. demonstrated that integrating schema therapy with acceptance and commitment therapy significantly improved mental well-being and body image concerns (Karami et al., 2025). These findings suggest that hybrid models combining cognitive restructuring with emotional acceptance may maximize treatment efficacy. Adolescents with social anxiety often struggle with both negative self-evaluations and emotional suppression; therefore, interventions addressing these dual processes may provide the most comprehensive benefit. Similarly, Wilson et al. in their meta-analysis concluded that compassion-related interventions were consistently effective in reducing anxiety and depressive symptoms across various populations (Wilson et al., 2019). Nonetheless, the current findings underscore that addressing deep-seated cognitive schemas yields more pronounced improvements in adolescents' overall clinical functioning.

The difference in therapeutic outcomes observed between schema therapy and compassion-focused therapy also reflects the developmental and cultural context of the participants. Adolescents in collectivist cultures, such as Iran, may internalize familial and social expectations more strongly, resulting in deeply ingrained self-schemas related to conformity, approval, and worthiness (Mehrabani et al., 2024). Schema therapy, with its focus on cognitive reappraisal and identification of maladaptive belief systems, may therefore resonate more effectively within such contexts. In contrast, compassion-focused approaches may require longer adaptation to shift self-relating patterns that are culturally influenced by modesty and self-criticism. This highlights the importance of contextual sensitivity in designing psychological interventions that align with cultural values and developmental needs (Bahadori et al., 2022).

The results are also in harmony with emerging research emphasizing the value of rehearsal-based and experiential learning methods in therapeutic contexts. Bjaasted et al. found that behavioral rehearsal significantly improved therapy trainees' ability to deliver cognitive-behavioral interventions for social anxiety (Bjaasted et al., 2025). Schema therapy incorporates similar experiential elements, including role enactment and imagery techniques, which may reinforce new cognitive–emotional learning. This experiential dimension is particularly beneficial for adolescents, who often engage more readily with interactive therapeutic activities than with abstract cognitive discussions. Therefore, the use of experiential strategies in schema therapy could explain its stronger effect on reducing clinical symptoms.

Overall, the findings suggest that both compassion-focused therapy and schema therapy can serve as effective interventions for adolescents with social anxiety disorder, with schema therapy demonstrating greater efficacy in symptom reduction and maintenance over time. These results contribute to the growing literature on emotion-centered interventions, confirming that approaches targeting both cognitive restructuring and emotional regulation are vital for the treatment of adolescent anxiety. They also underscore the need for integrative frameworks that combine the strengths of both models: the deep cognitive change achieved through schema modification and the emotional resilience fostered by compassion cultivation. Such integration could provide a balanced approach that addresses

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both the internal critical voice and the cognitive underpinnings of anxiety, ultimately enhancing therapeutic outcomes and emotional well-being among adolescents.

5. Limitations & Suggestions

This study, despite its valuable findings, is subject to several limitations. First, the sample was limited to male adolescents from a single city, which restricts the generalizability of the results to other age groups, genders, or cultural contexts. Second, the relatively small sample size and the quasi-experimental design, while common in clinical intervention research, limit the ability to draw definitive causal inferences. Third, the study relied primarily on self-report questionnaires, which may be influenced by social desirability bias or inaccurate self-perception. Additionally, the two-month follow-up period, though useful, may not capture the long-term sustainability of treatment effects. Finally, the absence of a combined or hybrid treatment condition prevents exploration of potential synergistic effects between schema and compassion-based interventions.

Future studies should aim to replicate these findings with larger and more diverse samples, including both male and female adolescents across different socio-cultural backgrounds. Longitudinal research with extended follow-up periods is recommended to evaluate the persistence of therapeutic effects over time. Comparative studies using neurophysiological and behavioral measures could also elucidate the underlying mechanisms of change in both schema and compassion-focused therapies. Furthermore, exploring integrated treatment protocols that combine cognitive schema restructuring with compassion cultivation may yield more comprehensive benefits. Researchers should also examine mediating factors such as emotion regulation, attachment security, and self-concept clarity to better understand how these interventions operate at cognitive and affective levels.

Clinicians working with adolescents experiencing social anxiety disorder should consider implementing schema therapy to address deep-rooted maladaptive beliefs and compassion-focused therapy to strengthen self-acceptance and emotional balance. Integrating both approaches may enhance treatment outcomes by combining cognitive restructuring with emotional regulation strategies. Practitioners are encouraged to adapt therapeutic content to the developmental stage and cultural context of adolescents, using experiential and interactive techniques to promote engagement. School psychologists and counselors can also employ compassion-based exercises and schema-awareness training within preventive programs to foster emotional resilience and reduce social anxiety in youth populations.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

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.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

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JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526