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The Efficacy of Schema Therapy on Self-Compassion and Cognitive Distortions in Adolescents Affected by Romantic Breakup

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Abstract

***Objective**: The present study aimed to investigate whether a group-based schema therapy program is effective in improving self-compassion and reducing cognitive distortions among adolescents who have experienced a recent romantic breakup.*

***Methods**: In 2025, thirty male adolescents from District 1 of Tehran who had recently undergone a romantic breakup were recruited using purposive sampling and randomly assigned to an experimental group (n = 15) and a control group (n = 15). All participants completed the Self-Compassion Scale (SCS), the Cognitive Distortion Questionnaire (CDQ), and the Ross Love Trauma Questionnaire (RLTQ) at pretest and posttest. The experimental group received ten weekly 90-minute sessions of schema therapy based on Young et al. (2003), while the control group received no intervention during the study period. Data were analyzed using analysis of covariance (ANCOVA) in SPSS 27 with a significance level of $p < 0.05$.*

***Results**: After controlling for pretest scores, schema therapy led to significantly higher self-compassion ($F = 10.933$, $p = 0.003$) and significantly lower cognitive distortions ($F = 9.976$, $p = 0.004$) compared with the control group, with effect sizes indicating that 28.8% and 27.0% of the variance in these outcomes, respectively, were attributable to the intervention.*

***Conclusion**: The findings suggest that schema therapy is an effective intervention for enhancing self-compassion and reducing cognitive distortions in male adolescents following romantic breakup. Further research with larger and more diverse samples is warranted*

***Keywords**: Cognitive Distortions; Romantic Breakup; Schema Therapy; Self-Compassion*

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1. Introduction

Adolescence is a pivotal period characterized by significant physiological, identity-related, and cognitive-emotional changes (Holder, 2025). These multifaceted transformations can induce intense stress, often disrupting the delicate balance between an individual's internal resources and external demands (Juneja et al., 2024). During this developmental stage, adolescents frequently encounter novel experiences, including interactions with the opposite sex. The pursuit of identity and peer validation often heightens emotional needs, leading to increased involvement in romantic relationships (Sahi et al., 2023). Romantic relationships are prevalent during adolescence, with approximately 56% of adolescents and young adults experiencing them (Barzeva et al., 2021). Love, defined as forming a deep connection within a relationship, involves intense feelings for another person, typically encompassing intimacy, sexual attraction, and emotional bonding. While love can influence various aspects of an individual's attitudes, behaviors, and emotions, the dissolution of a romantic relationship is an event that can significantly compromise an individual's mental well-being (Norouzi & Kajbaf, 2023). Research by Hojatkhah et al. (2017) indicated that a lack of self-compassion plays a crucial role in exacerbating anxiety and emotional distress. In adolescence, romantic relationships, although often developmentally normative, can also become a major source of vulnerability when they end in a breakup (Joosten et al., 2022). Romantic breakup in adolescents is frequently accompanied by intense emotional pain, intrusive thoughts about the lost relationship, sleep and appetite disturbances, and difficulties in concentration and daily functioning, and it can precipitate or exacerbate symptoms of anxiety and depressive mood (Dehghani et al., 2011; Eftekhar Afzali & Izadi, 2021; Norouzi & Kajbaf, 2023). These emotional reactions may be particularly severe when the breakup is perceived as rejection or abandonment, reinforcing negative self-beliefs and impairing adjustment. Given that lack of self-compassion has been shown to aggravate anxiety and emotional distress in young people (Hashemi Mohammadabad et al., 2024), understanding how self-compassion operates in the context of adolescent romantic breakup is especially important.

Self-compassion involves actively engaging with one's pain and suffering rather than avoiding or disconnecting from it, fostering a desire to alleviate that suffering, and treating oneself with kindness. It also entails recognizing that feelings of inadequacy and failure are universal human experiences, thus transcending unrealistic self-judgments (Neff & Germer, 2017). Rooted in Buddhist philosophy, self-compassion is characterized by self-kindness, self-acceptance, self-care, and self-love. It signifies relating to oneself with care and support during times of hardship, enabling individuals to approach life's adversities with gentleness, acceptance, empathy, and mercy. Self-compassion is distinct from self-centeredness; far from promoting egocentrism, it cultivates an understanding of others' feelings and fosters empathy within society (Neff et al., 2017). While compassion is widely lauded as a virtue in Western culture, individuals often harbor doubts about self-compassion, tending to be significantly less kind to themselves than to others. Although sometimes mistaken for self-pity, self-aggrandizement, or an excuse for passivity, self-

compassion is, in fact, the antithesis of these states. It empowers individuals to confront life from an intimate perspective where the boundaries between self and other soften, allowing all humans, including oneself, to be considered worthy of compassion (Neff, 2023). Individuals high in self-compassion are often described by others as more emotionally expressive and accepting. They demonstrate significant control over physical and verbal aggression in their relationships, possessing greater emotional resources than those who are less self-compassionate. Ultimately, self-compassion contributes to improved relationships and a reduction in anxiety and tension (Khamoshi Ghalenoei & Mansouri, 2020).

In the context of romantic breakup, adolescents with higher self-compassion appear better able to acknowledge painful emotions without over-identifying with them, to interpret failure and rejection as part of common human experience, and to regulate self-critical thoughts that might otherwise intensify distress (Eftekhar Afzali & Izadi, 2021; Mirahmadi & Amini, 2024). Conversely, low self-compassion can strengthen feelings of shame, unworthiness, and isolation following breakup, thereby increasing vulnerability to anxiety, depressive symptoms, and maladaptive coping. Building on the evidence that self-compassion buffers the impact of interpersonal stressors (Khamoshi Ghalenoei & Mansouri, 2020; Sarfarazi et al., 2025), the present study focuses on enhancing self-compassion as one of the key mechanisms through which schema therapy may facilitate recovery from romantic breakup in adolescents.

Cognitive distortions are systematic errors in thinking that lead individuals to misinterpret experiences in a biased and often overly negative manner (Steel et al., 2020)They include patterns such as negative filtering, disqualifying the positive, catastrophizing, and dichotomous ‘all-or-nothing’ thinking, and are closely linked to emotional disturbances like anxiety and depression (Thomas & Larkin, 2019). Adolescence, as a period of heightened emotional reactivity and identity exploration, is particularly prone to such maladaptive cognitive patterns, which can shape how young people view themselves, others, and the future (Bollen et al., 2021). In the specific context of romantic breakup, adolescents may engage in cognitive distortions such as overgeneralizing the breakup to all future relationships, catastrophizing its consequences, or personalizing the event as proof of being fundamentally unlovable (Bravo, 2018). These distorted interpretations can amplify post-breakup distress, sustain rumination, and interfere with adaptive coping. Recent work further suggests that early maladaptive schemas and cognitive distortions jointly contribute to anxiety and emotional problems in adolescence (Kianipour et al., 2020; Tariq et al., 2021), underscoring the importance of interventions that directly target these cognitive processes.

Furthermore, Eftekhar Afzali and Izadi (2021) demonstrated the role of cognitive distortions in romantic breakups. Cognitive distortions are irrational thoughts and beliefs that lead to an inaccurate perception of reality. Cognitive distortions are strongly intertwined with early maladaptive schemas, with schemas providing the thematic content for distorted thinking (Da Luz et al., 2017; Ward et al., 2003). Such cognitive patterns have been shown to underpin anxiety symptoms in both clinical and non-clinical samples

(Cook et al., 2020). Although the concept of cognitive distortions initially emerged within the framework of cognitive therapy, it has since been applied to various forms of problematic behavior, ranging from general antisocial conduct to substance abuse. Individuals often employ cognitive distortions to rationalize their actions before, during, and after engaging in errors or misconduct (Steel et al., 2020). Adolescence, a period often fraught with anxiety, renders young people susceptible to maladaptive thought patterns known as cognitive distortions, leading them to think about themselves, the world, and their future in profoundly negative and inaccurate ways. These distortions are frequently accompanied by discernible shifts in an individual's mood, behavior, and language (Bollen et al., 2021). Cognitive distortions encompass negative biases, where only aspects of reality confirming negative beliefs are attended to, and dichotomous thinking, perceiving situations in extreme terms where even minor flaws are agonizing. This style of thinking reflects primitive thought patterns that may have evolved as rapid defensive forms of thinking, adaptive for survival in threatening situations. However, through negatively biased information processing, negative thinking can become automatic, serving to maintain and reactivate cycles of depression and anxiety (Thomas & Larkin, 2020).

Both cognitive distortions and self-compassion appear to be critically important for adolescents' well-being and success (Hojatkhah et al., 2017; Mosalman et al., 2019; Sarfarazi et al., 2025). Given these considerations, a range of educational and therapeutic interventions has been developed to address cognitive-emotional difficulties in adolescents following romantic breakup, including mindfulness-based cognitive therapy (Mancone et al., 2025), acceptance and commitment-based programs (Norouzi & Kajbaf, 2023), self-healing and psychoeducational trainings (Sarfarazi et al., 2025), and schema-focused interventions (Ebrahimi et al., 2023; Sharifi Nejad Rodani et al., 2023a, 2023b). Among these, Schema Therapy (ST) has gained increasing attention as a comprehensive approach that targets early maladaptive schemas and coping styles thought to underlie persistent emotional problems.

Schema Therapy, developed by Young et al. (2003), is an integrative, evidence-based psychotherapy that was originally designed for chronic and treatment-resistant conditions and has since been adapted for a wide range of emotional problems. ST conceptualizes psychological difficulties in terms of unmet core emotional needs and early maladaptive schemas, pervasive patterns of thoughts, feelings, and memories that arise in childhood and are triggered by later stressors. Key components of Schema Therapy include the identification of schema domains and specific schemas, maladaptive coping styles, and schema modes, as well as the use of cognitive, experiential, behavioral, and relational techniques to modify them (Mansourzadeh et al., 2023; Young et al., 2003). In the present study, a group-based schema therapy protocol tailored to adolescents with romantic breakup was employed to address these early maladaptive schemas and associated coping patterns. According to Young et al. (2003), schemas originate from five core unmet emotional needs during childhood. Key concepts in schema therapy include needs, early maladaptive schemas, coping styles, and schema modes. Furthermore, Young et al.

(2003) explained that schemas are unconsciously internalized and manifest in specific situations. Another vital component of Schema Therapy is the therapeutic alliance, which plays a crucial role in treatment and is less emphasized in other approaches. Through empathy and awareness, Schema Therapy can lead to positive changes without inducing guilt, thereby enhancing individuals' control over their lives (Sousa et al., 2024). Ebrahimi et al. (2023) demonstrated that Schema Therapy leads to a reduction in symptoms associated with romantic breakups. In another study, Almalki and Alsuwat (2024) showed that Schema Therapy is effective in addressing cognitive distortions. Mirahmadi and Amini (2024) also found Schema Therapy to be influential on self-compassion.

Therefore, given the growing prevalence of psychosocial problems among adolescents and the cognitive-emotional difficulties stemming from stressors such as romantic breakup (Juneja et al., 2024; Sarfarazi et al., 2025), there is a pressing need for targeted interventions that address both underlying schemas and their cognitive-emotional manifestations. Although recent studies have shown that schema-focused interventions can reduce love-trauma symptoms and cognitive distortions in adults and young women (Almalki & Alsuwat, 2024; Ebrahimi et al., 2023; Mirahmadi & Amini, 2024; Sharifi Nejad Rodani et al., 2023a, 2023b), little empirical work has examined their effectiveness in adolescent boys who have recently experienced romantic breakup. Moreover, prior interventions have frequently focused on global symptoms of depression and anxiety rather than specifically targeting self-compassion and cognitive distortions as core mechanisms of vulnerability. To address this gap, the present quasi-experimental study evaluates whether a structured schema therapy program can enhance self-compassion and reduce cognitive distortions in male adolescents following romantic breakup.

2. Methods

This section describes the research design, participants, instruments, intervention procedure, and data analysis methods used in the study.

2.1. Research Design and Participants

This study employed an applied research approach with a quasi-experimental pretest–posttest design including an experimental group and a control group. Thirty male adolescents (n = 15 per group) were selected. The sample size was determined based on recommendations for ANCOVA designs with moderate effect sizes (f = 0.25), power of 0.80, and alpha of 0.05, following Cohen (1988) and Tabachnick and Fidell (2019), which suggest a minimum of 15 participants per group for such designs. The target population consisted of male adolescents aged 15–18 years living in District 1 of Tehran who had experienced a romantic breakup in 2025. Using purposive sampling, adolescents who met the inclusion criteria were recruited and then randomly assigned to an experimental group (n = 15) and a control group (n = 15). Recruitment was carried out through announcements posted on popular social media platforms and messaging applications (e.g., Instagram and WhatsApp), inviting adolescents who had recently experienced a romantic breakup to contact the research team for screening.

Inclusion criteria were: (a) being male and between 15 and 18 years of age; (b) having experienced emotional distress due to a romantic breakup within the previous one to three months; (c) scoring at or above 20 on the Ross Love Trauma Questionnaire (RLTQ; (Rosse, 1999)), indicating clinically significant love trauma; (d) obtaining a low score on the Self Compassion Scale (SCS; (Neff, 2003)) and a high score on the Cognitive Distortion Questionnaire (CDQ; (Abdullah Zadeh & Salar, 2009)) relative to established cut offs reported in Iranian validation studies; and (e) willingness to participate in group sessions and complete pretest and posttest assessments. Exclusion criteria included: (a) the presence of major psychiatric disorders such as psychosis, bipolar disorder, or substance dependence, based on a brief clinical interview conducted by a licensed clinical psychologist; (b) current use of psychotropic medication initiated within the previous three months; and (c) concurrent participation in other psychological interventions.

2.2. Research Instruments

The following instruments were used for participant screening, data collection, and assessment of the study outcomes.

Demographic Characteristics Questionnaire

A self-designed questionnaire was used to collect demographic data, including age, gender, and educational level.

Ross Love Trauma Questionnaire (RLTQ)

The Ross Love Trauma Questionnaire (Rosse, 1999) is a 10 item self-report measure designed to assess the severity of love related trauma. Items are rated on a 4-point Likert scale (0 = ‘never’ to 3 = ‘almost always’), yielding a total score ranging from 0 to 30, with higher scores indicating more severe love trauma. A total score of 20 or higher has been reported as a cut off for clinically significant love trauma (Dehghani et al., 2011; Rosse, 1999). Rosse (1999) reported adequate internal consistency (Cronbach’s alpha = 0.85) and test–retest reliability (r = 0.83). In an Iranian sample, Dehghani et al. (2011) found a Cronbach’s alpha of 0.81, supporting its reliability in this context.

Self-Compassion Scale (SCS)

The Self Compassion Scale (Neff, 2003) comprises 26 items rated on a 5 point Likert scale from 1 (‘Almost never’) to 5 (‘Almost always’), resulting in total scores between 26 and 130, with higher scores indicating greater self-compassion. The SCS assesses six subscales forming three bipolar components: Self Kindness vs. Self-Judgment, Common Humanity vs. Isolation, and Mindfulness vs. Over identification. Neff (2003) reported good internal consistency ($\alpha = 0.88$) and test–retest reliability, and subsequent studies have confirmed its construct validity (Neff et al., 2007; Neff et al., 2017). In Iranian samples, Cronbach’s alpha coefficients around 0.84 have been reported (Kolagari et al., 2024).

Cognitive Distortion Questionnaire (CDQ)

The Cognitive Distortion Questionnaire (Abdullahzadeh & Salar, 2009) is a 20 item instrument measuring 10 types of cognitive distortions (e.g., All or Nothing Thinking, Overgeneralization, Mental Filter, Disqualifying the Positive, Jumping to Conclusions, Magnification/Minimization, Emotional Reasoning, Should Statements, Labeling, Personalization). Each item is rated on a 5 point Likert scale from 1 ('Completely disagree') to 5 ('Completely agree'), yielding total scores from 20 to 100, with higher scores reflecting more severe cognitive distortions. Abdullah Zadeh and Salar (2009) reported satisfactory internal consistency ($\alpha = 0.80$) and acceptable validity indices.

2.3. Procedure

Interested adolescents who responded to the online announcements were contacted by the research team and invited to an in person screening session at the university clinic. During this session, eligibility was assessed using the RLTQ, SCS, and CDQ, followed by a brief diagnostic interview to rule out major psychiatric disorders. Those who met all inclusion criteria and none of the exclusion criteria were enrolled in the study and randomly allocated to the experimental or control group. All questionnaires were administered in person at the clinic in both pretest and posttest phases. The experimental group received 10 weekly, face to face group sessions of schema therapy (90 minutes each), while the control group received no intervention during this period. To minimize attrition, participants were reminded of sessions via phone and messaging applications, session schedules were coordinated with school hours, and brief motivational feedback was provided at the beginning of each session. At the end of the study, the control group was offered the opportunity to participate in the same intervention. All procedures complied with ethical principles for human subjects research. Written informed consent was obtained from the adolescents' legal guardians and assent from the adolescents themselves. Participants were informed about the voluntary nature of their participation, their right to withdraw at any time without penalty, and the confidentiality of their data.

The schema therapy program used in this study was adapted from the group schema therapy protocol developed by Young et al. (2003) and subsequent schema-focused manuals for emotional problems in youth (Ebrahimi et al., 2023; Mansourzadeh et al., 2023). The protocol was reviewed and culturally adapted by two expert clinical psychologists and one faculty member with formal training in Schema Therapy to ensure its suitability for Iranian male adolescents experiencing romantic breakup. Content validity of the adapted protocol was established through expert review, and minor modifications were made in language and examples to fit the developmental level of adolescents. The final program consisted of ten 90-minute group sessions delivered once weekly. Each session followed a structured format that included psychoeducation, cognitive restructuring, experiential techniques (e.g., imagery rescripting, chair work), and behavioral homework assignments focused on identifying and modifying early maladaptive schemas and associated coping styles related to romantic breakup

Table 1
Schema Therapy Protocol Based on (Young et al., 2003)

Session	Description
1	Introduction, ice-breaking, outlining the goals of Schema Therapy and group rules by the therapist, and categorizing client problems within the Schema Therapy framework.
2	The therapist explains the concept of Schema Therapy to members and describes Early Maladaptive Schemas and their characteristics.
3	The therapist introduces schema domains and Early Maladaptive Schemas. Cognitive techniques such as schema validity testing and evaluating the pros and cons of coping styles are taught.
4	The therapist introduces maladaptive coping styles and responses that perpetuate schemas, and explains the concept of schema modes.
5	Healthy communication and guided imagery (imaginal dialogue) are taught to group members. Schemas are also assessed through questionnaires.
6	Group members learn experiential techniques, such as imagery rescripting of problematic situations and confronting their most troublesome schemas.
7	The therapeutic relationship, facilitating dialogue between the healthy adult mode and schema modes by clients, and practicing relationships with significant others through role-playing are taught.
8	Group members practice healthy behaviors through role-playing, such as writing letters or engaging in imaginary dialogues.
9	The advantages and disadvantages of healthy and unhealthy behaviors are discussed, and strategies for overcoming barriers to behavior change are taught.
10	The final session reviews previous content and practices learned strategies to enhance motivation for change. Healthy behaviors are also taught through guided imagery and role-playing.

Descriptive statistics (mean and standard deviation) were used to summarize the data. For inferential analysis and hypothesis testing, Analysis of Covariance (ANCOVA) was employed using SPSS 27 software.

3. Results

The present study aimed to investigate the efficacy of Schema Therapy on self-compassion and cognitive distortions in male adolescents affected by romantic breakups, involving a total of 30 participants. The mean age for the experimental group was 16.47 years (SD = 1.12), for the control group was 16.20 years (SD = 1.08), and the overall mean age was 16.33 years (SD = 1.09). The minimum age of participants was 15 years, and the maximum was 18 years. Regarding educational level, out of the 30 participants, 11 individuals (36.7%) were in the ninth grade, 3 (10%) in the tenth grade, 9 (30%) in the eleventh grade, and 7 (23.3%) in the twelfth grade.

To assess the normality of the data, the Shapiro-Wilk test was conducted on the dependent variables. The results indicated that, with the exception of the experimental group's pretest scores for self-compassion ($p = 0.043$) and cognitive distortions ($p = 0.037$), all p-values exceeded 0.05, supporting normal distributions. For the two non-normal cases identified, standardized skewness values were calculated using the formula $Z\_skew = skewness / sqrt(6/n)$, yielding values of -1.45 for self-compassion and -1.68 for cognitive distortions, both within the acceptable range of -2 to +2. Thus, the data were

deemed sufficiently normal to proceed with parametric analyses, including analysis of covariance (ANCOVA).

As shown in Table 2, the descriptive statistics reveal that the experimental group exhibited notable improvements from pretest to posttest for both self-compassion (increasing from M = 56.20, SD = 8.45 to M = 72.13, SD = 9.67) and cognitive distortions (decreasing from M = 68.47, SD = 10.56 to M = 55.87, SD = 11.23). In contrast, the control group showed minimal changes over time for self-compassion (M = 57.33, SD = 7.92 at pretest to M = 57.00, SD = 8.14 at posttest) and cognitive distortions (M = 67.80, SD = 9.88 at pretest to M = 68.13, SD = 10.45 at posttest).

Table 2
Means and Standard Deviations of Self-Compassion and Cognitive Distortions in Experimental and Control Groups at Pretest and Posttest

Variable	Group	Pretest Mean (Sd)	Posttest Mean (Sd)
Self-Compassion	Experimental	56.20 (8.45)	72.13 (9.67)
	Control	57.33 (7.92)	57.00 (8.14)
Cognitive Distortions	Experimental	68.47 (10.56)	55.87 (11.23)
	Control	67.80 (9.88)	68.13 (10.45)

Prior to conducting ANCOVA, assumptions were verified: Levene's test confirmed homogeneity of variances for self-compassion ($F(1,28) = 0.214$, $p = 0.647$) and cognitive distortions ($F(1,28) = 0.156$, $p = 0.696$); tests for homogeneity of regression slopes were non-significant ($p > 0.05$ for both variables), indicating parallel slopes; and observations were independent as participants were randomly assigned. These assumptions were met, supporting the use of ANCOVA.

Table 3 presents the ANCOVA results, which demonstrate significant effects of the intervention after controlling for pretest scores. Specifically, for self-compassion, the pretest covariate was significant ($F(1,27) = 12.456$, $p = 0.002$, partial $\eta^2 = 0.316$), and the group effect (intervention) was also significant ($F(1,27) = 10.933$, $p = 0.003$, partial $\eta^2 = 0.288$), indicating that 28.8% of the variance in posttest self-compassion scores was attributable to the Schema Therapy intervention. Similarly, for cognitive distortions, the pretest covariate was significant ($F(1,27) = 11.789$, $p = 0.002$, partial $\eta^2 = 0.304$), and the group effect was significant ($F(1,27) = 9.976$, $p = 0.004$, partial $\eta^2 = 0.270$), accounting for 27% of the variance in posttest cognitive distortion scores. These findings confirm the efficacy of the intervention for both dependent variables.

Table 3

ANCOVA Results for the Effects of Schema Therapy on Self-Compassion and Cognitive Distortions, Controlling for Pretest Scores

Source	Variable	Df	F	P	Partial H^2
Pretest (Covariate)	Self-Compassion	1	12.456	0.002	0.316
	Cognitive Distortions	1	11.789	0.002	0.304
Group (Intervention)	Self-Compassion	1	10.933	0.003	0.288
	Cognitive Distortions	1	9.976	0.004	0.270
Error	-	27	-	-	-

The results of the between-subjects effects test for self-compassion indicate that the effect of group status (independent variable), after controlling for the effect of the pretest, was statistically significant on posttest self-compassion scores ($F(1, 27) = 10.933$, $p = 0.003$). Furthermore, the effect size (Partial Eta Squared = 0.288) suggests that 28.8% of the variance in posttest self-compassion scores is explained by the group status (intervention). Thus, given the significant effect of group status, the efficacy of the intervention is confirmed for self-compassion.

The results of the between-subjects effects test for cognitive distortions demonstrate that the effect of group status (independent variable), after controlling for the effect of the pretest, was statistically significant on posttest cognitive distortion scores ($F(1, 27) = 9.976$, $p = 0.004$). Moreover, the effect size (Partial Eta Squared = 0.270) indicates that 27% of the variance in posttest cognitive distortion scores is accounted for by the group status (intervention). Consequently, with the significant effect of group status established, the efficacy of the intervention for cognitive distortions is confirmed.

To facilitate a more precise comparison between the groups, adjusted means were utilized. The adjusted mean score for the experimental group ($M = 70.514$) on the self-compassion variable was higher than that of the control group ($M = 58.419$). Given the significant effect of group status (intervention) on posttest self-compassion scores, it can be concluded that the adjusted mean of the experimental group is significantly higher than that of the control group. For a more detailed group comparison, adjusted means were employed. The adjusted mean score for the experimental group ($M = 46.300$) on the cognitive distortions variable was lower than that of the control group ($M = 57.633$). Given the confirmed significant effect of group status (intervention) on posttest cognitive distortion scores, it can therefore be stated that the adjusted mean of the experimental group is significantly lower than that of the control group.

Table 4

Estimated Marginal Means (Adjusted Posttest Means) and Standard Errors for Self-Compassion and Cognitive Distortions in Experimental and Control Groups

Variable	Group	Adjusted Mean	Se	95% Ci Lower	95% Ci Upper
Self-Compassion	Experimental	70.514	2.345	65.712	75.316
	Control	58.419	2.345	53.617	63.221
Cognitive Distortions	Experimental	57.633	2.678	52.139	63.127
	Control	46.300	2.678	40.806	51.794

4. Discussion

The present quasi-experimental study aimed to examine whether a group-based schema therapy program could enhance self-compassion and reduce cognitive distortions in male adolescents who had recently experienced a romantic breakup. The findings showed that, compared with the no-treatment control group and after controlling for pretest scores, adolescents who participated in schema therapy demonstrated significantly higher self-compassion and significantly lower cognitive distortions at posttest, with moderate to large effect sizes.

Regarding self-compassion, these results are consistent with previous work indicating that schema-focused interventions can foster more adaptive self-relations and emotional functioning (Ebrahimi et al., 2023; Khamoshi Ghalenoei & Mansouri, 2020; Mirahmadi & Amini, 2024; Sharifi Nejad Rodani et al., 2023a, 2023b). Similarly, the observed reduction in cognitive distortions accords with evidence that modifying early maladaptive schemas leads to changes in negative thinking patterns and related emotional symptoms (Almalki & Alsuwat, 2024; Da Luz et al., 2017; Kianipour et al., 2020).

Regarding the efficacy of Schema Therapy on self-compassion, our results align with previous research by Sharifi Nejad Rodani et al. (2023a, 2023b) and Mirahmadi and Amini (2024). This outcome can be elucidated by considering ST's core focus on identifying early maladaptive schemas in adolescents experiencing romantic breakups and transforming them into constructive and understandable messages and behaviors that foster improved relationships and cooperation with others. Individuals affected by romantic breakups often experience a period of strained relationships, where a lack of social support can intensify negative emotional states. This, in turn, can significantly impair self-compassion, leading adolescents to believe they are unloved and undeserving of affection. They may internalize their "badness" as the cause of rejection by their romantic partner and others, potentially leading to social avoidance. However, as schemas are modified, individuals' potential for developing intimate relationships increases, subsequently reducing self-criticism and self-aggression. As these adolescents gain clarity regarding their emotional needs and express them to others, their internal and interpersonal conflicts diminish, fostering a more compassionate view of themselves and greater self-care. In essence, individuals grappling with emotional collapse learn through Schema Therapy to mitigate their dissatisfaction with the breakup and embrace their emotional and physical pain, treating it as a part of their experience. By reducing self-

criticism and isolation, ST teaches adolescents affected by romantic breakups to refrain from self-blame and to move past feelings of failure.

In further explanation, adolescents affected by romantic breakups often perceive the challenges stemming from emotional collapse as severe intrapersonal conflict and dissonance, which can heighten their motivation to overcome these difficulties. Consequently, a schema therapist collaborates with these adolescents, employing cognitive, emotional, behavioral, and interpersonal strategies to challenge maladaptive schemas. The therapist guides them to compassionately confront the reasons and necessities for facing the trauma of love. Maladaptive schemas, interacting with negative life events and creating cognitive vulnerability, predispose individuals experiencing emotional collapse to dysfunctional attitudes, distress, and various psychological disorders (Tariq et al., 2021). The presence of these schemas during an emotional breakup can lead to feelings of self-dislike and anger, resulting in a lack or reduction of self-compassion in adolescents. Schema Therapy techniques, therefore, provide individuals affected by romantic breakups with new opportunities through visualization and understanding the transformative roots of their schemas. By increasing successive learning opportunities, ST enhances clients' self-efficacy, thereby boosting self-compassion. Ultimately, early maladaptive schemas render adolescents more susceptible to feelings of rejection and abandonment, making them feel as though their world has ended after a romantic breakup, plunging them into profound sadness and depression. Schema Therapy helps individuals identify these maladaptive schemas, altering their perspectives and worldview to accept romantic breakups as a part of life, and to believe in future opportunities for healthier relationships. This process enables adolescents to view themselves with greater kindness and compassion, reducing self-blame for past events (Sharifi Nejad Rodani et al., 2023b).

Regarding the efficacy of Schema Therapy on cognitive distortions, our findings are consistent with previous research by Da Luz et al. (2017) and Ward et al. (2003). This can be explained by the strong link between cognitive distortions and vulnerability to romantic breakups, which often leads to negative interpretations of emotions and events within the relationship, making individuals highly sensitive to their romantic partners. Studies indicate that individuals vulnerable to romantic breakups are more prone to catastrophizing, self-blame, and rumination, all of which are central to cognitive distortions (Kianipour et al., 2020). Indeed, cognitive distortions are instrumental in the development and perpetuation of anxiety in adolescents affected by romantic breakups (Cook et al., 2020). It can be argued that early maladaptive schemas significantly contribute to the manifestation or exacerbation of cognitive distortions. For instance, when an emotion is aroused (e.g., sadness due to a romantic breakup), early maladaptive schemas influence an individual's interpretation of this emotion, leading them to believe they were abandoned by their partner due to being unlovable or having a fundamental flaw. Consequently, the individual engages in self-blame or catastrophizing about the event, thereby intensifying their sadness through cognitive distortions. Thus, a negative interpretation of an emotion activates dysfunctional beliefs. However, Schema Therapy,

by rectifying these dysfunctional beliefs and modifying early maladaptive schemas, helps to improve cognitive distortions and foster a more positive interpretation of the romantic breakup. This enables individuals to accept the breakup as a part of life, not the entirety of it, and to strive for a better future with healthier relationships. Schema Therapy utilizes calming techniques to help individuals first identify and release physical tension, facilitating easier confrontation with internal conflicts. Using the empty chair technique, the schema therapist guides the adolescent to visualize their former partner in an empty chair and express unspoken feelings and grievances regarding the abandonment. Gradually, with the therapist's assistance, the adolescent begins to see their parents, who failed to meet their fundamental emotional needs, instead of the abandoning partner. This realization helps the adolescent understand that the sadness and anger they feel towards their former partner are, in fact, suppressed sadness and anger towards their parents. The therapist then assists the adolescent in acknowledging and accepting these emotions towards their parents. As these emotional wounds heal through dialogue and acceptance, the individual's beliefs about the world and others transform. They no longer catastrophize events, nor do they blame themselves due to feelings of worthlessness. Instead, they strive to come to terms with the reality of the breakup, attributing it to factors like incompatibility rather than personal inadequacy. This is how Schema Therapy leads to an improvement in cognitive distortions.

5. Conclusion

This study provides preliminary evidence that a group based schema therapy program can effectively enhance self compassion and reduce cognitive distortions in male adolescents who have recently experienced a romantic breakup. By targeting early maladaptive schemas and associated coping styles, schema therapy appears to address core cognitive emotional vulnerabilities activated by relationship loss in this developmental period. These findings suggest that schema focused interventions may represent a promising approach for promoting healthier adjustment following romantic breakup in adolescents and warrant further investigation in larger and more diverse samples.

This study has several limitations. First, the sample size was relatively small and restricted to male adolescents from a single urban district, which limits the generalizability of the findings to other regions, females, or clinical populations. Second, the quasi experimental design and reliance on purposive sampling reduce the extent to which causal inferences and population level conclusions can be drawn. Third, the study did not include any follow up assessments; therefore, it remains unclear whether the observed improvements in self compassion and cognitive distortions are maintained over time. Future research is recommended to use larger and more diverse samples, employ random sampling where possible, incorporate follow up evaluations, and compare schema therapy with other evidence based interventions such as mindfulness based and acceptance based programs for adolescents experiencing romantic breakup.

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Conflict of interest

The authors declare that there is no conflict of interest.

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