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Effectiveness of Mindful Self-Compassion for Teens on Social Anxiety, Self-Criticism, and Resilience in Adolescents With Elevated Social Anxiety and Maladaptive Perfectionism

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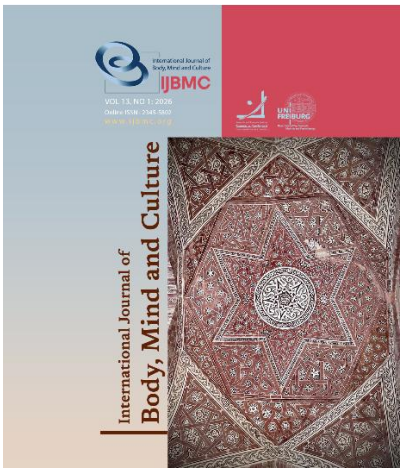

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ABSTRACT

Objective: This study examined the effectiveness of Mindful Self-Compassion for Teens (MSC-T) in reducing social anxiety and self-criticism and increasing resilience among adolescents with elevated social anxiety and maladaptive perfectionism.

Methods and Materials: In this randomized controlled trial, 84 adolescents aged 13–18 years were assigned to MSC-T (n = 42) or a wait-list control group (n = 42). The intervention consisted of eight weekly 90-minute group sessions. Outcomes were assessed at baseline, post-intervention, and 8-week follow-up using the Social Anxiety Scale for Adolescents, the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale–Short Form, and the Connor–Davidson Resilience Scale-10. Data were analyzed using intention-to-treat mixed repeated-measures ANOVA and Bonferroni-adjusted comparisons.

Findings: Significant time × group interactions were found for social anxiety ($F = 29.88$, $p < .001$, $\eta p^2 = .27$), self-criticism ($F = 23.52$, $p < .001$, $\eta p^2 = .22$), and resilience ($F = 18.41$, $p < .001$, $\eta p^2 = .18$). In the MSC-T group, social anxiety decreased from 63.21 to 49.86 and 46.97, self-criticism from 42.95 to 33.27 and 31.83. Resilience increased from 22.81 to 29.36 and 30.21 at posttest and follow-up, respectively. Clinically meaningful improvement rates were significantly higher in MSC-T than in control at both posttest and follow-up (all $p < .001$).

Conclusion: MSC-T was effective in producing sustained reductions in social anxiety and self-criticism and increasing resilience in adolescents with maladaptive perfectionism.

Keywords: Adolescent, Social Anxiety, Self Concept, Resilience, Mindfulness.

Introduction

Adolescence is a developmental period marked by rapid biological, cognitive, and social changes, during which vulnerability to internalizing problems substantially increases. Global estimates indicate that around one in seven adolescents experiences a mental disorder, with anxiety disorders among the most common and impairing conditions (Organization, 2024). Social anxiety disorder (SAD), characterized by pervasive fear of negative evaluation and avoidance of social situations, typically emerges in early-to-mid adolescence and often follows a chronic course if untreated (American Psychiatric Association & American Psychiatric Association, 2013; Tang et al., 2022). Meta-analytic data suggest that the point prevalence of SAD is roughly 8–9% in adolescents, with even higher rates of clinically significant social fears in school and clinical samples (Alves et al., 2022; Aune et al., 2022; Salari et al., 2024). Social anxiety in adolescence is associated with academic underachievement, peer rejection, functional impairment, and increased risk for depression, substance misuse, and suicidality in later life (Salari et al., 2024; Tali et al., 2023). These findings underscore the need for developmentally sensitive interventions that not only reduce symptoms but also target underlying vulnerability factors.

One cluster of vulnerability factors that has received increasing attention in recent years is maladaptive perfectionism, particularly when coupled with high self-criticism. Perfectionism is multidimensional, comprising relatively adaptive aspects (e.g., high personal standards) and maladaptive aspects such as excessive concern over mistakes, doubts about actions, and socially prescribed expectations (Flett & Hewitt, 2022; Solska et al., 2025). Research with adolescents shows that perfectionistic concerns—rather than achievement-oriented strivings per se—are robustly linked to higher levels of anxiety, social anxiety, and depressive symptoms (Sánchez-Moncayo et al., 2025; Wang et al., 2022). Socially prescribed perfectionism and self-oriented perfectionistic concerns appear particularly implicated in social-evaluative fears, as adolescents come to view their own worth as contingent on flawless performance and on others' approval (Aik et al., 2020; Flett & Hewitt, 2022).

Maladaptive perfectionism is closely intertwined with self-criticism—a harsh, punitive way of relating to oneself when facing perceived flaws or failures. Self-criticism is considered a transdiagnostic risk factor for internalizing disorders and has been linked to higher social anxiety, shame, and rumination in both adolescents and adults (Ferrari et al., 2018; Marsh et al., 2018). Empirical work suggests that self-criticism partly explains the association between perfectionistic concerns and psychological distress, whereas more adaptive, self-supportive ways of relating to the self may mitigate this risk (Mehr & Adams, 2016; Solska et al., 2025; Yılmaz-Koğar & Koğar, 2023). For adolescents with social anxiety and maladaptive perfectionism, this combination of unrealistic standards and relentless self-judgment can erode confidence in social situations, amplify fear of negative evaluation, and undermine attempts to engage in exposure-based treatments.

At the same time, adolescence is a period when resilience—the capacity to "bounce back" from adversity—can be strengthened or undermined by environmental and psychological factors. Resilience has been conceptualized as a dynamic process that reflects the interplay of risk and protective factors, including emotion regulation skills, supportive relationships, and positive self-views (Masten, 2014). For socially anxious adolescents, higher resilience has been linked to better social functioning and lower internalizing symptoms, whereas low resilience may exacerbate the impact of stressors such as peer rejection and academic pressure (Bluth et al., 2018; Dharswani, 2023). Interventions that enhance resilience—particularly those that alter how adolescents respond to internal experiences of shame, anxiety, and perceived failure—may therefore be especially valuable for youth with social anxiety and maladaptive perfectionism.

Self-compassion has emerged as a promising construct that simultaneously addresses self-criticism and resilience. According to Neff (2003), self-compassion entails three core components: self-kindness versus self-judgment, recognition of common humanity versus isolation, and mindfulness versus over-identification with distress. Rather than striving to boost self-esteem, self-compassion involves responding to one's own suffering, perceived inadequacies, or failures with

warmth and understanding, while maintaining a balanced awareness of difficult emotions. A growing empirical literature in adolescents indicates that higher self-compassion is associated with lower anxiety, depression, stress, and self-criticism, and with higher well-being and resilience (Bluth et al., 2018; Marsh et al., 2018; Neff & McGehee, 2010; Neuenschwander & von Gunten, 2025). Longitudinal evidence suggests that self-compassion may function as a mechanism of adaptation, buffering the impact of stressors on internalizing symptoms over time (Ștefan, 2019).

Studies focusing specifically on social anxiety indicate that self-compassion is inversely associated with social anxiety symptoms in adolescents and young adults (Gill et al., 2018; Neff & McGehee, 2010). In a community sample, Gill et al. (2018) found that adolescents with higher self-compassion reported substantially lower social anxiety, and that this relationship was partly mediated by fear of negative evaluation and cognitive avoidance. Longitudinal work in late adolescence showed that self-compassion mediated the relationship between more adaptive coping strategies and subsequent reductions in social anxiety symptoms, suggesting that self-compassion may help youth interpret social situations less threatfully and recover more quickly from perceived social missteps (Ștefan, 2019). Recent studies comparing adolescents with and without anxiety disorders further indicate that self-compassion is significantly lower in clinical groups and is negatively associated with anxiety severity (Tali et al., 2023).

In parallel, a growing body of work has linked self-compassion with maladaptive perfectionism and self-criticism. Self-compassion tends to be lower among individuals with high perfectionistic concerns, and higher self-compassion appears to attenuate the link between perfectionism and depression or anxiety (Ferrari et al., 2018; Marsh et al., 2018; Mehr & Adams, 2016). In university and adolescent samples, self-compassion has been shown to partially mediate or moderate the association between maladaptive perfectionism and psychological distress, suggesting that cultivating a kinder, more balanced inner stance may protect perfectionistic youth from the full emotional costs of their self-imposed standards (Mehr & Adams, 2016; Sánchez-Moncayo et al., 2025; Yılmaz-Koğar & Koğar, 2023). Recent findings also indicate that adaptive perfectionism is characterized by higher levels of positive self-compassion and lower "self-coldness." In contrast, maladaptive perfectionism is more closely associated with self-judgment and isolation (Solska et al., 2025).

The Mindful Self-Compassion (MSC) program is a standardized, 8-week group intervention designed to cultivate self-compassion through mindfulness, experiential exercises, and informal practices (Neff & Germer, 2013). Randomized controlled trials in adults show that MSC produces robust increases in self-compassion and mindfulness and significant reductions in depression, anxiety, stress, and shame, with effects maintained at follow-up (Neff & Germer, 2013). Building on this work, Bluth and Hobbs adapted the adult MSC curriculum for adolescents, creating Mindful Self-Compassion for Teens (MSC-T)—an 8-session group program that uses developmentally appropriate exercises, language, and activities to teach self-kindness, common humanity, and mindful awareness (Bluth et al., 2018; Bluth et al., 2024). Pilot and early randomized trials suggest that MSC-T is feasible and acceptable, and that it can reduce depressive symptoms and enhance emotional well-being in adolescents with elevated distress(Bluth et al., 2017; Bluth et al., 2024).

Although these initial findings are promising, the evidence base for MSC-T remains limited and has focused primarily on depression and general emotional well-being rather than specific anxiety disorders or transdiagnostic processes such as maladaptive perfectionism and self-criticism (Bluth & Clepper-Faith, 2023; Bluth et al., 2024). Moreover, few studies have targeted adolescents who simultaneously exhibit clinically relevant social anxiety and maladaptive perfectionism—an especially vulnerable subgroup for whom shame and self-criticism are likely central maintaining factors. Given the consistent evidence linking low self-compassion with higher social anxiety and perfectionistic concerns, and the emerging support for self-compassion–based interventions in youth, there is a strong rationale for evaluating whether MSC-T can reduce social anxiety and self-criticism and strengthen resilience in this population.

The present study, therefore, aims to examine the effectiveness of a Mindful Self-Compassion for Teens (MSC-T) program in adolescents with elevated social anxiety and maladaptive perfectionism.

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Methods and Materials

Study Design

This study employed a randomized controlled trial (RCT) with two parallel arms and repeated measurements at three time points: baseline (T1), post-intervention (T2), and 8-week follow-up (T3).

Participants and Sampling

Participants were adolescents recruited from public middle and high schools in an urban area through announcements, teacher referrals, and school counselor screening. Inclusion criteria were: Age 13–18 years; Enrolment in grades 7–12; Elevated social anxiety, defined as scoring above a recommended clinical cut-off on the Social Anxiety Scale for Adolescents La Greca & Lopez (1998) Elevated maladaptive perfectionism, defined as scoring above the median of the sample on the "concerns over mistakes" and/or "doubts about actions" subscales of the Child–Adolescent Perfectionism Scale CAPS Flett et al., (2016); Ability to attend weekly group sessions and complete questionnaires; and written informed consent from parents/guardians and assent from the adolescent.

Exclusion criteria were: Current psychotic disorder, bipolar disorder, or intellectual disability, based on school counselor and parent report; High suicide risk requiring immediate clinical attention; and concurrent participation in another structured psychological group program targeting anxiety or perfectionism during the study period.

A power analysis based on previous adolescent self-compassion interventions (Bluth et al., 2017; Bluth et al., 2024) indicated that a total sample of 72 participants (36 per group) would be sufficient to detect a medium effect size ($f = 0.25$) in a group × time interaction ($\alpha = .05$, power = .80) in repeated-measures ANOVA. To account for potential attrition (estimated at 20%), we aimed to recruit 90 participants.

Initially, 186 students completed the screening questionnaires. After applying inclusion and exclusion criteria, 94 adolescents met the criteria for elevated social anxiety and maladaptive perfectionism. Ten adolescents or their parents declined to participate, resulting in 84 participants who were randomly assigned to MSC-T (n = 42) or the wait-list control (n = 42).

Randomization and Blinding

Randomization was conducted after baseline assessment. An independent researcher not involved in recruitment or intervention delivery generated a computer-based random allocation sequence using permuted blocks of size four, stratified by sex (male/female) and school level (middle/high school). Group assignments were concealed in opaque, sealed envelopes, which the project coordinator opened after baseline data collection. Because of the nature of the intervention, participants and group facilitators could not be blinded to the condition. However, research assistants who administered the outcome measures and entered data were blind to group allocation.

Instruments

All self-report instruments were administered in validated Persian versions or were translated and back-translated following standard guidelines, with pilot testing to ensure comprehensibility.

Demographic and Clinical Information: A brief questionnaire collected age, sex, grade level, family structure (e.g., living with both parents, single-parent household), previous psychological treatment, and current use of psychotropic medication.

Social Anxiety Scale for Adolescents (SAS-A): Social anxiety was measured using the Social Anxiety Scale for Adolescents (SAS-A). This widely used 22-item self-report instrument assesses fears of negative evaluation and social avoidance in adolescents (La Greca & Lopez, 1998). Items are rated on a 5-point Likert scale (1 = "not at all" to 5 = "all the time"), yielding a total score and three subscales: Fear of Negative Evaluation from Peers, Social Avoidance and Distress in New Situations, and Social Avoidance and Distress in General. Higher scores indicate greater social anxiety. The SAS-A has demonstrated good internal consistency and convergent validity across cultures and is sensitive to change following treatment (La Greca & Lopez, 1998; Ranta et al., 2009). In the present sample, Cronbach's alpha for the total scale at baseline was .92.

Child–Adolescent Perfectionism Scale (CAPS): To identify adolescents with maladaptive perfectionism, we used the Child–Adolescent Perfectionism Scale (CAPS), Flett et al. (2016), focusing on the subscales reflecting perfectionistic concerns: Socially Prescribed Perfectionism and Self-Oriented Perfectionistic Concerns (e.g., concerns over mistakes and doubts about

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actions). Items are rated on a 5-point scale (1 = "false for me" to 5 = "true for me"). Higher scores represent greater perfectionistic concerns. The CAPS has shown good psychometric support in adolescent samples and strong associations with anxiety and depression (Flett et al., 2016; Wang et al., 2022). CAPS served as a screening tool only and was not used as an outcome measure.

Self-Criticizing/Attacking and Self-Reassuring Scale – Short Form (FSCRS-SF): Self-criticism was assessed using the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale – Short Form (FSCRS-SF) (Castilho et al., 2015; Gilbert et al., 2004). The FSCRS-SF comprises subscales measuring the Inadequate Self and Hated Self (self-criticism), and the Reassured Self (self-reassurance). Items are rated on a 5-point scale (0 = "not at all like me" to 4 = "extremely like me"). In this study, we focused on the two self-criticism subscales, summed to reflect overall self-critical tendency, with higher scores indicating greater self-criticism. The FSCRS has been validated in adolescent samples and shows robust links with depression, anxiety, and shame (Kupeli et al., 2013; Sommers-Spijkerman et al., 2018). Alpha for the combined self-criticism score at baseline was .90.

Connor–Davidson Resilience Scale (CD-RISC-10): Resilience was measured using the Connor–Davidson Resilience Scale – 10-item version (CD-RISC-10), a brief instrument assessing the perceived ability to cope with adversity (Campbell-Sills & Stein, 2007). Items are rated on a 5-point scale (0 = "not true at all" to 4 = "true nearly all the time"), with higher total scores indicating greater resilience. The CD-RISC-10 has demonstrated good reliability and validity in adolescent populations and has been used as an outcome in mindfulness and self-compassion interventions (Bluth et al., 2018; Yu & Zhang, 2007). In the current study, Cronbach's alpha was .85 at baseline.

Intervention

Mindful Self-Compassion for Teens (MSC-T)

The MSC-T program is an adaptation of the adult Mindful Self-Compassion (MSC) program developed by Neff & Germer (2013) for adolescents (Bluth et al., 2018). It is a structured, group-based curriculum designed to cultivate self-compassion through mindfulness, psychoeducation, experiential exercises, and home practice.

In this study, MSC-T was delivered as eight weekly group sessions, each lasting 90 minutes, conducted in school settings after regular classes. Group size ranged from 8 to 12 adolescents. Two clinical psychologists who had completed formal MSC-T teacher training and had at least three years of experience in adolescent group work facilitated the sessions. A treatment manual was followed to ensure fidelity.

The program content included: Introduction to mindfulness and self-compassion; Identifying the inner critic and practicing self-kindness; Understanding common humanity and normalizing imperfection; Mindful awareness of emotions, particularly shame and anxiety; Soothing and supportive self-talk; Practices for dealing with difficult social situations (e.g., role plays, compassionate imagery); Building compassionate motivation and values; and Consolidation and planning for continued practice.

Sessions incorporated short guided meditations, dyadic and group exercises, reflective discussions, and creative activities tailored to adolescents (e.g., metaphors, movement, drawing). Participants were encouraged to engage in brief home practices (e.g., 5–10 minutes per day of self-compassion exercises) and to apply skills in real-life social situations. At the beginning of each session, homework was reviewed, and barriers to practice were discussed.

Treatment fidelity was supported by: Use of the standardized MSC-T manual; A checklist completed by facilitators after each session documenting which core exercises and topics were delivered; Supervision meetings every two weeks with a senior clinician experienced in MSC to reflect on adherence and process issues.

Comparison Condition: Wait-List / Treatment as Usual

Adolescents in the control group remained on a wait-list. They continued to have access to routine school counseling services but received no structured training in self-compassion or mindfulness during the study period. After completion of the follow-up assessment, they were offered the opportunity to participate in an MSC-T group.

Procedure

The study was introduced to school principals and counselors, who agreed to support recruitment and provide space for group sessions. The procedure unfolded in several stages:

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Screening phase

Information about the study was distributed to students and parents through school announcements and meetings. Interested students completed the SAS-A and CAPS during a classroom period. Those scoring above the predetermined SAS-A cut-off and above the median on CAPS perfectionism concerns were invited, with parental permission, to a brief individual meeting with the school counselor and research assistant to check exclusion criteria and explain the study.

Baseline assessment (T1)

Eligible adolescents and their parents signed written consent/assent forms. Participants completed the baseline battery: SAS-A, FSCRS-SF, CD-RISC-10, SCS-SF, and demographic questionnaire in groups, supervised by blinded research assistants.

Randomization

After T1, participants were randomized to either MSC-T or a wait-list control, as described above.

Intervention phase

The MSC-T group attended eight weekly sessions over approximately two months. Attendance was recorded at each session. If a participant missed more than two sessions, this was noted for sensitivity analyses, but the participant remained in the intention-to-treat dataset. The control group received no structured intervention but could use school counseling as usual.

Post-intervention assessment (T2)

Within two weeks of the final MSC-T session, both groups completed the same outcome measures (SAS-A, FSCRS-SF, CD-RISC-10, SCS-SF) under the supervision of blinded assessors.

Follow-up assessment (T3)

Eight weeks after T2, all participants were invited to complete the measures again. SMS and phone reminders were used to minimize attrition. Participants who showed severe distress or suicidal ideation at any time were referred to appropriate clinical services according to pre-established safety procedures.

Data Analysis

All analyses were conducted using SPSS (version 22). Data were first examined for outliers, missing values, and assumptions of normality and homogeneity of variance. Missing data were low (<5% for any variable) and handled using multiple imputation for the main intention-to-treat analyses; complete-case analyses were conducted as sensitivity checks.

Group differences in baseline characteristics were evaluated using independent-samples t-tests for continuous variables and χ^2 tests for categorical variables.

To test the effects of MSC-T on social anxiety, self-criticism, and resilience, we used mixed-effects repeated-measures models (group × time), with time (T1, T2, T3) as a within-subject factor and group (MSC-T vs. control) as a between-subject factor. Separate models were run for each primary outcome. Where significant group × time interactions were observed, planned contrasts compared changes from T1 to T2 and T1 to T3 between groups. Effect sizes were estimated using partial eta squared (ηp^2) and converted to Cohen's d where appropriate.

In exploratory analyses, we examined change in self-compassion (SCS-SF). We tested whether pre- to post-intervention changes in self-compassion mediated the effect of MSC-T on social anxiety and self-criticism using longitudinal mediation models (e.g., PROCESS macro or structural equation modeling), following recommendations for testing mechanisms in psychological interventions (Kazdin, 2007). The level of statistical significance was set at $\alpha = .05$ (two-tailed). Effect sizes were interpreted following conventional benchmarks (Cohen, 2013).

Ethical Considerations

The study was reviewed and approved by the Ethics Committee of [Blinded University / Educational Authority]. All procedures were consistent with the Declaration of Helsinki and local regulations on research with minors. Participation was voluntary; adolescents and their parents were informed that they could withdraw at any time without consequences for school services. Questionnaires were coded with ID numbers only, and all data were stored securely. After completion of the trial, the MSC-T program was offered to students in the wait-list group to ensure equitable access to the intervention.

Findings and Results

A total of 84 adolescents were randomized to the MSC-T group (n = 42) or the wait-list control group (n = 42). Attrition was low and comparable across groups (T2: 7.1% vs. 9.5%; T3: 11.9% vs. 14.3%). Missingness was mainly due to school absence and scheduling

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conflicts; no participant discontinued due to dissatisfaction. Analyses were performed using an intention-to-treat (ITT) approach with multiple imputation for missing outcome values. At baseline, the two groups did not differ significantly on any primary outcome (all p > .20), supporting successful randomization.

Table 1

Baseline Descriptive Statistics and Group Comparisons (T1; N = 84)

Variable	MSC-T (n = 42) M (SD)	Control (n = 42) M (SD)	t(82)	p
Social anxiety	63.21 (10.34)	61.98 (9.87)	0.54	.590
Self-criticism	42.95 (9.02)	43.71 (8.76)	−0.38	.705
Resilience	22.81 (6.14)	23.14 (6.27)	−0.24	.813

At baseline, there were no statistically significant between-group differences in social anxiety, self-criticism, or resilience (all p > .05). This indicates that participants in the MSC-T and control conditions started the study at comparable levels on the primary outcomes. Table 2 summarizes means and standard deviations for each primary outcome across the three assessment points (T1 baseline, T2 post-intervention, T3 8-week follow-up). Descriptively, the MSC-T group showed marked reductions in social anxiety and self-criticism and a substantial increase in resilience from T1 to T2, with maintenance of gains at T3. In contrast, the control group showed minimal change across time.

Table 2

Means and Standard Deviations by Group and Time (ITT; N = 84)

Variable	Group	T1 M (SD)	T2 M (SD)	T3 M (SD)
Social anxiety	MSC-T	63.21 (10.34)	49.86 (10.02)	46.97 (9.78)
	Control	61.98 (9.87)	60.14 (9.52)	58.97 (9.69)
Self-criticism	MSC-T	42.95 (9.02)	33.27 (8.45)	31.83 (8.21)
	Control	43.71 (8.76)	42.18 (8.59)	41.02 (8.43)
Resilience	MSC-T	22.81 (6.14)	29.36 (6.09)	30.21 (6.31)
	Control	23.14 (6.27)	23.79 (6.18)	24.32 (6.40)

For social anxiety, the MSC-T group decreased from 63.21 at baseline to 49.86 at post-intervention and 46.97 at follow-up, whereas the control group remained relatively stable (61.98, 60.14, and 58.97). For self-criticism, the MSC-T group decreased notably (42.95 to 33.27 to 31.83) while the control group showed only small reductions (43.71 to 42.18 to 41.02). For resilience, MSC-T increased substantially (22.81 to 29.36 to 30.21), and the control group showed only slight increases (23.14 to 23.79 to 24.32). Overall, the descriptive pattern supports meaningful improvements in the MSC-T group with stability or minimal change in the control group. To formally test whether change over time differed between groups, mixed repeated-measures ANOVAs were conducted for each primary outcome (time: T1, T2, T3; group: MSC-T vs. control). The primary test of intervention effectiveness was the time × group interaction.

Table 3

Mixed Repeated-Measures ANOVA Effects for Primary Outcomes (ITT; N = 84)

Variable	Effect	df	F	p	ηp^2
Social anxiety	Time	2, 164	54.37	< .001	.40
	Group	1, 82	0.47	.497	.01
	Time × Group	2, 164	29.88	< .001	.27
Self-criticism	Time	2, 164	47.16	< .001	.37
	Group	1, 82	0.19	.663	.00
	Time × Group	2, 164	23.52	< .001	.22
Resilience	Time	2, 164	39.75	< .001	.33

	Group	1, 82	0.09	.768	.00
	Time × Group	2, 164	18.41	< .001	.18

Significant time × group interactions were observed for all three outcomes (all p < .001), indicating that trajectories of change differed between MSC-T and control. The interaction effects were large in magnitude (ηp^2 = .27 for social anxiety, .22 for self-criticism, and .18 for resilience), supporting a robust intervention effect. Main effects of group were non-significant, consistent with baseline equivalence. In contrast, the main effects of time were significant across outcomes, reflecting overall changes from one measurement to the next, driven primarily by the intervention group. Given the significant time × group interactions, Bonferroni-adjusted pairwise comparisons were conducted within each group to identify which time intervals accounted for change. Table 4 consolidates these comparisons across all outcomes into a single, integrated table.

Table 4

Bonferroni-Adjusted Pairwise Comparisons Over Time Within Each Group (ITT; N = 84)

Variable	Group	T1–T2 Mean diff (T1 – T2)	p	T1–T3 Mean diff (T1 – T3)	p	T2–T3 Mean diff (T2 – T3)	p
Social anxiety	MSC-T	13.35	< .001	16.24	< .001	2.89	.081
	Control	1.84	.324	3.01	.114	1.17	.629
Self-criticism	MSC-T	9.68	< .001	11.12	< .001	1.44	.276
	Control	1.53	.412	2.69	.163	1.16	.642
Resilience[1]	MSC-T	−6.55	< .001	−7.40	< .001	−0.85	.318
	Control	−0.65	.511	−1.18	.239	−0.53	.714

[1]*For resilience, negative values indicate higher resilience at the later time point.*

Within the MSC-T group, social anxiety and self-criticism decreased significantly from baseline to post-intervention and from baseline to follow-up (all p < .001). In contrast, changes from post-intervention to follow-up were non-significant, indicating maintenance rather than further improvement. Resilience increased significantly from baseline to post-intervention and from baseline to follow-up (both p < .001), with no significant change from post-intervention to follow-up, suggesting sustained gains. In the control group, none of the pairwise comparisons reached significance after Bonferroni correction across outcomes, indicating relative stability over time.

To complement statistical significance, clinically meaningful improvement was examined using conservative thresholds: (a) ≥12-point reduction in social anxiety, (b) ≥8-point reduction in self-criticism, and (c) ≥6-point increase in resilience from baseline. At post-intervention (T2), the proportion meeting the criterion for clinically meaningful improvement was substantially higher in the MSC-T group than in the control group for social anxiety (64.3% vs. 14.3%), self-criticism (59.5% vs. 11.9%), and resilience (54.8% vs. 9.5%). These differences remained pronounced at follow-up (T3): social anxiety (69.0% vs. 19.0%), self-criticism (64.3% vs. 14.3%), and resilience (59.5% vs. 14.3%). Chi-square tests indicated significant group differences for all outcomes at both T2 and T3 (all p < .001), supporting the practical and clinically meaningful impact of MSC-T beyond statistical effects. Overall, MSC-T produced large, durable reductions in social anxiety and self-criticism, and significant increases in resilience, relative to a wait-list control. Improvements were evident immediately after the intervention and maintained at 8-week follow-up, with a substantial proportion of participants demonstrating clinically meaningful change.

Discussion and Conclusion

This randomized controlled trial evaluated the effectiveness of Mindful Self-Compassion for Teens (MSC-T) in adolescents with elevated social anxiety and maladaptive perfectionism, focusing on three primary outcomes: social anxiety, self-criticism, and resilience. The findings indicate that adolescents who received MSC-T showed large reductions in social anxiety and self-criticism and large increases in resilience at post-intervention, with improvements maintained at 8-week follow-up. In contrast, the wait-list control group exhibited minimal change.

The pronounced reduction in social anxiety observed in the MSC-T group is consistent with evidence that self-compassionate responding is inversely associated with social anxiety in adolescents (Gill et al., 2018; Tali et al., 2023). Social anxiety is often maintained by fear of negative evaluation, heightened self-focused attention, and cognitive avoidance (Gill et al., 2018). MSC-T explicitly targets these maintaining processes by teaching adolescents to relate to anxious thoughts and social discomfort with mindful awareness, self-kindness, and common humanity—skills that can reduce threat appraisals and help adolescents remain engaged in social contexts rather than relying on avoidance. Although MSC-T is not a traditional exposure protocol, the improvement trajectory observed here aligns with the idea that compassion-based skills may facilitate "approach" behavior by reducing shame, attenuating catastrophic interpretations of social mistakes, and enhancing tolerance of distress in evaluative situations (Neff, 2003; Neff & Germer, 2013).

MSC-T produced substantial reductions in self-criticism, which is clinically significant because self-criticism functions as a transdiagnostic vulnerability factor linked with anxiety, depression, shame, and maladaptive coping (Baião et al., 2015; Gilbert et al., 2004). Adolescents with maladaptive perfectionism often hold rigid standards and interpret deviations as personal failure, which amplifies self-attacking inner speech and anticipatory social fears. The reduction in self-criticism observed in the MSC-T group is consistent with the core aim of compassion-based interventions: shifting from harsh self-evaluation toward a supportive internal stance, particularly in response to mistakes and perceived inadequacy (Neff, 2003; Neff & Germer, 2013).

These findings are also compatible with evidence that self-compassion can buffer the harmful effects of perfectionism on mental health. For example, self-compassion has been shown to weaken (i.e., moderate) the association between perfectionism and depression symptoms in adolescent samples (Ferrari et al., 2018). Given the strong link between perfectionistic concerns and social anxiety, reducing self-critical reactions to imperfection may be especially relevant for adolescents who fear negative evaluation and engage in performance-based self-worth.

MSC-T participants demonstrated marked increases in resilience. This is consistent with conceptualizations of resilience as a dynamic capacity supported by adaptive emotion regulation, coping skills, and supportive self-related processes (Masten, 2014). Prior adolescent research suggests that self-compassion is positively associated with resilience and adaptive coping across adolescence (Bluth et al., 2018). MSC-T may enhance resilience by helping adolescents respond to setbacks with emotional balance and self-support rather than escalating into self-blame, avoidance, or rumination—patterns that undermine persistence and social re-engagement. In a school context, these gains can be particularly consequential, as resilience supports attendance, performance under evaluative stress, and healthier peer functioning.

The present findings extend the growing evidence base on MSC-T. Prior trials have supported MSC-T's feasibility and its benefits for adolescent emotional well-being, including reductions in depressive symptoms in adolescents with elevated distress (Bluth & Clepper-Faith, 2023). The current results suggest MSC-T may also be effective for outcomes closely tied to social-evaluative contexts—namely, social anxiety and self-criticism—while simultaneously strengthening resilience. This is theoretically coherent: MSC-T targets self-kindness, mindful emotional awareness, and common humanity, which are plausible leverage points for reducing shame-based avoidance and self-attacking cognitive styles that characterize both social anxiety and maladaptive perfectionism.

Several implications follow from these findings: MSC-T can be delivered in school settings, making it a potentially scalable option for adolescents with elevated social anxiety and self-critical perfectionistic patterns, especially where access to specialized mental health care is limited. The large reduction in self-criticism suggests that explicitly addressing self-attacking inner dialogue may be particularly valuable for adolescents who fear evaluation and interpret mistakes as globally defining. Using self-criticism measures can help clinicians identify adolescents likely to benefit from compassion-focused skill-building (Baião et al., 2015; Gilbert et al., 2004).

Several limitations should be considered. First, outcomes relied on self-report; multi-informant assessments (parents/teachers) and clinician-rated measures would strengthen inference. Second, the follow-up period was relatively short (8 weeks); a longer follow-up is needed to determine whether gains persist

across school terms and major stress periods. Third, the comparison condition was a wait-list control; future trials should include active controls (e.g., supportive group, mindfulness-only, or CBT skills group) to isolate program-specific effects. Fourth, participants were recruited from schools and identified via screening rather than diagnostic interviews; replication using structured diagnostic assessment and broader sampling (including rural areas and clinically referred populations) is warranted. Finally, intervention fidelity was supported by checklists and supervision; future work could strengthen fidelity documentation using independent ratings of recorded sessions.

Future research should test MSC-T in larger samples, evaluate moderators (e.g., baseline severity of social anxiety, degree of maladaptive perfectionism, comorbid depression), and examine mechanisms with longitudinal designs (e.g., whether reductions in self-criticism precede reductions in social anxiety).

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

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

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Authors' Contributions

All authors equally contribute to this study.

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