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The Effectiveness of Compassion-Focused Therapy on Self-criticism and Social Adjustment in Students with Substance -Dependent Parents

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ABSTRACT

Objective: The present study aimed to determine the effectiveness of compassion-based therapy on self-criticism and social adjustment among students with a substance-dependent parent.

Methods: This study employed a quasi-experimental design with a pretest-posttest control group and a follow-up phase. The statistical population consisted of all male high school students in upper secondary schools in Zahedan County who had at least one parent with substance dependence. Among them, 30 participants were selected through convenience sampling and were randomly assigned to either the experimental group or the control group, with 15 students in each group. The data collection instruments included the Levels of Self-Criticism Scale developed by Thompson and Zuroff (LOCS) and the Adjustment Inventory for School Students developed by Sinha and Singh (AISS). The compassion-based therapeutic intervention was administered to the experimental group in eight weekly sessions, each lasting 90 minutes. Data were collected at the pretest, posttest, and eight-week follow-up stages and were analyzed using appropriate statistical methods.

Results: The findings indicated that compassion-based therapy significantly reduced self-criticism among students with a substance-dependent parent ($P<0.05$); however, no significant effect was observed on their social adjustment ($P>0.05$).

Conclusions: Based on these findings, it can be concluded that compassion-based therapy may be used as an effective intervention for improving the psychological indicators of vulnerable students.

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Introduction

The quality of family relationships plays a key role in adolescents' emotional and behavioral development. A positive family environment (e.g., open communication, low conflict, high support, and moderate affective involvement) can support youths' healthy adjustment (Lyu et al., 2025). A child's upbringing in a safe, supportive and normal environment is a precondition for balanced emotional and cognitive development, whereas dysfunctional family functioning may predispose children to psychological and social problems (Turemuratova et al., 2025). One of the most important factors undermining the functioning of families is substance dependence among parents, a chronic and recurrent phenomenon that affects not only the individual affected but also the whole family system with wide-ranging psychological, social and emotional consequences (Hilliard et al., 2025). Research evidence shows that children of substance abusers are more likely to suffer from problems such as depression, anxiety, social isolation, behavioral problems and academic failure compared to their peers (Nematzadeh soteh et al., 2023). Parental ineffectiveness, attachment disorder, economic and emotional pressures, and sometimes violence are all factors that undermine these children's development and increase the risk of psychological problems developing (Abate et al., 2021). One common psychological problem that children of parents with substance abuse disorders face is self-criticism. Self-criticism is a type of response to failure, manifested through self-judgment and self-evaluation (Wong et al., 2025). Self-criticism involves a pattern of self-recriminations, perceived deviations from one's own or others' standards, and excessive focus on success. Due to the irrational and perfectionistic goals, they set themselves, self-critical individuals consider their efforts insufficient and worthless, and are caught in a vicious circle of self-doubt and frustration, leading to depression and anxiety. Self-criticism, in turn, leads individuals to view themselves and their performance as imperfect, and to set unattainable standards (Qian et al., 2024). On the other hand, one of the important consequences of parental substance abuse is the disruption of social adjustment. The quality of parent-child interaction is crucial for the development of social skills, feelings of security and the ability to form effective relationships, and a deterioration of this relationship can seriously undermine children's social adjustment (Varaona et al., 2024). Given these problems, the need to use effective psychological interventions to improve the situation of children from families affected by substance use is clear. Compassionate therapy, focusing on reducing self-pity, increasing self-love and regulating

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emotions, is considered one of the most modern and promising approaches to treating emotional and psychological problems(Pullmer et al., 2019). However, research evidence on the effectiveness of this approach in terms of self-criticism and social adjustment of substance-dependent students is limited. This study was therefore carried out to investigate the effectiveness of compassion-based therapy on self-criticism and social adjustment in substance-impaired students. In recent years, a number of national studies have examined the effectiveness of compassion-based interventions and the psychological consequences for adolescents and young people with substance abuse parents. Safikhani Gholizadeh et al. (2024) showed that compassion-based therapy can be effective in reducing some of the behavioral consequences of substance-dependency (e.g. oppositional defiance and self-indulgence) in students(Safikhani Gholizadeh et al., 2024). Ghorbani and Asadi (2023) compared adolescents with substance dependence parents with normal adolescents in terms of individual characteristics and mental health, and found differences in personality, mental health and sensory-related behaviors, confirming a higher vulnerability of this group(Gorbani & Asadi, 2023).

On the other hand, studies specifically addressing the components of this study show that compassion-oriented approaches can improve emotional and self-reported indicators. Varmarzyari and Golpour (2022) investigated the effectiveness of self-compassion training on self-criticism and social self-efficacy of female students with test anxiety. The findings showed that self-compassion is effective on self-criticism and social self-efficacy of female students with test anxiety, meaning that self-compassion leads to improved self-criticism and social self-efficacy of female students with test anxiety. Their study also confirmed the reduction in self-criticism and the improvement in social self-efficacy in the context of self-compassion (Varmarzyari & Golpour, 2022). Considering the effect of emotional regulation, self-criticism and anger reduction in improving students' interpersonal and academic relationships, Tabesh Mofrad and Mansouriyeh (2023) reported that compassionate therapy reduces maladaptive strategies and enhances adaptive strategies for emotional regulation, reduces self-criticism, and improves the emotional and psychological well-being of adolescents(Tabesh Mofrad & Mansouriyeh, 2023).

There is also increasing evidence at international level on the effectiveness and acceptance of compassion-based therapies. Garrett et al. (2025) indicated a high level of acceptability of group CFT and commonality of experiences across participants despite different clinical

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presentations(Garrett et al., 2025). Similarly, Thomason and Moghaddam (2020) showed that compassion-focused therapy or compassion-based interventions may be effective in improving self-esteem. However, there is large clinical and methodological heterogeneity amongst studies making further conclusions difficult (Thomason & Moghaddam, 2021). Moreover, Krieger et al. (2018) tested the efficacy of an online version of a compassion-focused intervention, mindfulness-based compassionate living (MBCL), with guidance on request. The results showed that online compassion-based interventions can significantly reduce self-criticism, which supports the feasibility of implementing this approach in different support formats (Krieger et al., 2019).

While existing Iranian studies suggest that compassion-based interventions can improve some psychosocial outcomes, the critical work of adapting and implementing such interventions in Iranian cultural contexts-especially in interlocking systems of schooling, family, and community-is still insufficient. Most of the domestic research focused on clinical or at-risk populations, while there were relatively few studies examining the implementation and evaluation of compassion-based interventions in Iranian school and family environments. This gap prevents the development of culturally sensitive school policies for mental health, since effective interventions need to be in harmony with Iranian cultural values, family dynamics and social structures to be practically feasible. Moreover, Iranian studies largely examined outcome variables in isolation and rarely used multilevel models that could capture the complex interaction between these factors and the role of self-control and emotional regulation within the academic-family context. As a result, the mechanisms underlying therapeutic change are poorly understood, which limits the design of high impact interventions and contributes to discrepancies between research findings and policy implementation. Given these problems, there is a clear need for effective psychological interventions to support children in families affected by substance abuse. Compassionate therapy, which emphasizes the reduction of self-criticism, the promotion of self-love and the improvement of emotional regulation, has proven to be a promising treatment for emotional and psychological problems. However, its effectiveness in reducing self-doubt and improving social adjustment in substance- dependent students has received little empirical attention. The present study therefore aimed to evaluate the effectiveness of Compassion-Focused Therapy on self-criticism and social adjustment in this vulnerable population.

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Material and Methods

This study was applied in purpose and employed a quasi-experimental pretest–posttest control group design with an eight-week follow-up. The independent variable was Compassion-Focused Therapy (CFT), while the dependent variables were self-criticism and social adjustment. All assessments were performed at three time points: pretest, posttest, and eight-week follow-up. The primary objective was to investigate the effectiveness of Compassion-Focused Therapy on self-criticism and social adjustment in male adolescents with substance-dependent parents. The target population included all male secondary school students in Zahedan who had at least one parent with a history of substance abuse. Participants were recruited through randomized, affirmative sampling. Using G*Power software with an expected magnitude of effect of 0.30, a power of 0.80 and an alpha of 0.05, the minimum sample size was calculated to be 30. Eligible patients were randomly assigned to either the experimental or control groups (n = 15 per group). Ethical approval was obtained from the Research Ethics Committee of the University of Sistan and Baluchestan. After coordinating with secondary schools in Zahedan, invitation letters were distributed to students with substance-dependent parents. Interested students were interviewed in advance to confirm their eligibility. Those who fulfilled the criteria were asked to provide written informed consent. Inclusion criteria were: having at least one substance-dependent parent, voluntary informed consent, age range of 15–18 years, not receiving other concurrent psychological treatments, and absence of severe cognitive or psychiatric disorders. Exclusion criteria included missing more than two intervention sessions, student substance use, or failure to complete study measures. Prior to the intervention, all participants completed the Levels of Self-Criticism Scale (LOCS; Thompson & Zuroff) and the Social Adjustment Inventory for School Students (AISS; Sinha & Singh). The experimental group subsequently attended eight weekly 90-minute sessions of Compassion-Focused Therapy. Post-intervention assessments were conducted immediately after treatment termination, and a follow-up assessment was administered eight weeks later to evaluate the maintenance of treatment gains.

Measures

The following instruments were utilized to collect data:

Levels of Self-Criticism Scale (LOCS; Thompson & Zuroff, 2004)

The Levels of Self-Criticism Scale (LOCS) was used to measure students' self-criticism. This

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instrument assesses two dimensions: internalized self-criticism and comparative self-criticism. It consists of 22 items rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*), yielding total scores ranging from 22 to 154, with higher scores reflecting greater self-criticism. Items 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19 measure internalized self-criticism, while items 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 21, and 22 assess comparative self-criticism. Seven items (6, 8, 11, 12, 16, 20, and 21) are reverse-scored.

Thompson and Zuroff (2004) reported acceptable internal consistency, with Cronbach's alpha coefficients of 0.78 for comparative self-criticism and 0.84 for internalized self-criticism. Yamaguchi and Kim (2013) reported alpha coefficients of 0.70, 0.82, and 0.90 for comparative self-criticism, internalized self-criticism, and the total score, respectively (Thompson & Zuroff, 2004). In an Iranian sample, Mousavi and Ghorbani (2006) obtained Cronbach's alpha values of 0.87, 0.55, and 0.83 for internalized self-criticism, comparative self-criticism, and the overall scale. The subscales also showed significant correlations with measures of interpersonal problems(Mousavi & Ghorbani, 2006).

Adjustment Inventory for School Students (AISS; Sinha & Singh, 1971)

The AISS was developed by Sinha and Singh (1995) to evaluate students' social, emotional, and educational adjustment(Sinha & Singh, 1971). The Persian version of this 55-item inventory was validated by Ghodsi-Ahghar on a sample of 3,000 students. The questionnaire uses a dichotomous (0–1) scoring system and includes three subscales: social adjustment, emotional adjustment, and educational adjustment. The test developers reported high reliability coefficients using split-half (0.95), test-retest (0.93), and Kuder-Richardson (0.94) methods. Content validity was established by 20 psychology specialists. In an Iranian study, KhanKhani Zadeh and Bagheri (2012) reported a Cronbach's alpha of 0.75 for the social adjustment subscale(Khan Khanizadeh & Bagheri, 2012).

Procedure

Following receipt of ethical approval, eligible students were identified and, after obtaining informed consent, assigned to either the experimental or control group. At the pretest stage, both groups completed the research questionnaires. The experimental group then received compassion-based therapy across eight weekly 90-minute sessions, while the control group received no intervention. Posttests and follow-up assessments were conducted immediately upon completion of the intervention and again at eight weeks post-intervention.

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Table 1. Structure of Therapy Sessions

Session	Objective and Activities
First	Introduction and establishment of compassionate connection
	Introduction to the concept of compassion and its importance in daily life
	Presentation of the concept of compassion, treatment objectives, and session procedures. Establishing a safe and non-judgmental environment for participants
	Initial self-compassion exercises (relaxation breathing practice and compassion visualization)
Second	Recognition of self-criticism and its effects
	Introduction to self-criticism and its impact on self-esteem and mental health
	Analysis of self-criticism patterns and their influence on the individual. Encouraging the identification of negative internal patterns
	Exercises for discovering and coping with self-critical thoughts
Third	Enhancement of self-esteem and self-worth
	Strengthening self-esteem through self-acceptance and self-respect
	Discussion of the importance of self-esteem and its relationship to self-compassion
	Exercises related to identifying personal strengths and achievements
Fourth	Emotion regulation skills and stress reduction
	Teaching techniques for managing negative emotions through compassion
	Teaching stress and tension reduction exercises through compassion
	Breathing exercises, meditation, and stress reduction practices using self-compassion
Fifth	Strengthening empathy and social adaptation
	Enhancing empathic ability and improving social relationships
	Discussion of the importance of empathy and positive social interactions
	Empathy exercises, active listening, and compassionate communication skills
Sixth	Working with negative memories and positive affect
	Assisting students in managing and processing negative memories
	Identifying negative memories and practicing their reappraisal from a compassionate perspective
	Positive reframing of negative memories and cultivating a positive outlook
Seventh	Strengthening compassionate behaviors in daily life
	Reinforcing self-compassion and compassion toward others in various life situations
	Teaching methods for demonstrating compassion in daily interactions
	Practical exercises for compassionate behaviors in daily life
Eighth	Summarization and progress evaluation
	Review of learned material and assessment of progress
	Discussion and evaluation of the intervention effects on self-esteem, self-criticism, and social adaptation
	Final exercises and goal-setting for continuing the compassion process in daily life

Results

Data Analysis

Data were analyzed using SPSS software, version 26. Descriptive statistics, including means and standard deviations, were computed. For inferential analysis, repeated measures analysis of variance (ANOVA) was employed to examine the intervention effect across the three measurement timepoints. Statistical assumptions, including normality of data distribution and sphericity, were assessed. The significance level for all tests was set at $\alpha = 0.05$.

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Table 2. Means and Standard Deviations for the Experimental and Control Groups

Variable	Group	Pretest		Posttest		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Self-criticism	Experimental	90.41	12.73	79.03	11.25	75.71	10.33
	Control	91.89	12.92	89.76	12.11	89.14	11.98
Social adaptation	Experimental	20.18	4.52	21.61	4.92	20.88	5.23
	Control	22.09	5.11	23.21	5.83	22.81	5.45

In order to more precisely examine the existing differences and to determine whether these differences were statistically significant, repeated measures ANOVA was employed. Prior to conducting repeated measures ANOVA, the normality of data distribution was assessed using the Shapiro-Wilk test, the results of which are presented in Table 3.

Table 3. Shapiro-Wilk Test for Assessing Normality of Distribution

Variable		Group	Statistic	Significance	Result
Self-criticism	Pretest	Experimental group	0.89	0.64	Distribution is normal
		Control group	0.98	0.97	Distribution is normal
	Posttest	Experimental group	0.96	0.68	Distribution is normal
		Control group	0.94	0.41	Distribution is normal
	Follow-up	Experimental group	0.93	0.29	Distribution is normal
		Control group	0.91	0.39	Distribution is normal
Social adjustment	Pretest	Experimental group	0.88	0.41	Distribution is normal
		Control group	0.95	0.57	Distribution is normal
	Posttest	Experimental group	0.91	0.73	Distribution is normal
		Control group	0.93	0.47	Distribution is normal
	Follow-up	Experimental group	0.90	0.70	Distribution is normal
		Control group	0.96	0.68	Distribution is normal

As shown in Table 3, the Shapiro-Wilk test was not significant for the research variables ($p > .05$); therefore, the variables exhibited normal distributions. Furthermore, since one of the assumptions for conducting repeated measure ANOVA is the homogeneity of variances across groups, Levene's test was employed to assess this assumption, with results reported in Table 3.

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Table 4. Levene's Test for Assessing Homogeneity of Variances

Variable	*F*	df_1	df_2	Significance
Self-criticism	1.78	1	28	.38
Social adjustment	3.20	1	28	.08

The results presented in Table 4 indicate that Levene's test was not significant for either variable ($p > .05$); thus, the assumption of homogeneity of variances was satisfied, and parametric analyses could be appropriately applied in this research.

Table 5. Mauchly's Test for Assessing the Homogeneity of Covariance Matrices for Self-Criticism and Social Adjustment Scores

Variable	Mauchly's W	*F*	Significance
Self-criticism	15.017	1.901	.078
Social adjustment	21.01	0.91	.09

The results of Mauchly's test for the assumption of homogeneity of covariance matrices for self-criticism scores yielded the following: M = 15.017, $F = 1.901$, $p > .05$, confirming this assumption. Similarly, the results of Mauchly's test for the assumption of homogeneity of covariance matrices for social adaptation scores were: M = 21.01, $F = 0.91$, $p > .05$, also confirming this assumption.

Table 6. Mauchly's Test for Repeated Measures of Self-Criticism at Pretest, Posttest, and Follow-up

Within-subjects effects	Mauchly's W	Chi-square	df	Significance	ε
					Greenhous-Geisser
Measurement phase	0.223	55.544	2	.001	0.563

Given that the significance level of Mauchly's test was less than .05, the sphericity assumption was not met, and therefore Greenhouse-Geisser corrections were applied.

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Table 7. Repeated Measures ANOVA Results for Within- and Between-Group Effects

Effects	Source	df	*F*	Significance	Effect size	Statistical power
Within-subjects	Measurement phase	1.125	103.169	.001	0.731	0.999
	Group × Measurement phase	2	120.559	.001	0.760	0.999
	Error	76	—	—	—	—
Between-subjects	Group	1	4.198	.047	0.099	0.515
	Error	38	—	—	—	—

The results of the repeated measures ANOVA indicated a significant difference between the study groups ($p < .05$). To examine this difference more precisely, pairwise comparisons of the groups across different phases were computed, with results reported in Table 8.

Table 8. Pairwise Comparison Results Across Phases for Self-Criticism

Groups	Pretest			Posttest		Follow-up
	Mean difference	SE	Significance	Mean difference	SE	Significance
Experimental × Control	−1.48	10.780	.825	−10.73	11.490	.004

Based on the obtained information, at the pretest phase, there was no significant difference between the study groups ($p > .05$). However, at the posttest and follow-up phases, the experimental group demonstrated significantly greater performance compared to the control group ($p < .01$).

Table 9. Comparison of Three Phases (Pretest, Posttest, and Follow-up) Across Experimental and Control Groups

Group	Pretest–Posttest		Pretest–Follow-up		Posttest–Follow-up	
	Mean difference	Significance	Mean difference	Significance	Mean difference	Significance
Experimental	11.38	.001	14.70	.001	3.32	.090
Control	2.13	.081	2.75	.150	3.32	.508

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As shown in Table 9, there was a significant difference between pretest and posttest phases and also between pretest and follow-up phases in the experimental group ($p < .001$), whereas in the control group, these differences were not significant ($p > .05$). Furthermore, the difference between posttest and follow-up was not significant in either group ($p > .05$).

Table 10. Mauchly's Test for Repeated Measures of Social Adjustment at Pretest, Posttest, and Follow-up

Within-subjects effects	Mauchly's W	Chi-square	df	Significance	ε
					Greenhous-Geisser
Measurement phase	0.456	62.894	2	.001	0.578

Given that the significance level of Mauchly's test was less than .05, the sphericity assumption was not met, and therefore Greenhouse-Geisser corrections were applied.

Table 11. Repeated Measures ANOVA Results for Within- and Between-Group Effects

Effects	Source	df	*F*	Significance	Effect size	Statistical power
Within-subjects	Measurement phase	1.115	2.25	.45	0.11	0.05
	Group × Measurement phase	2	2.36	.55	0.09	0.03
	Error	76	—	—	—	—
Between-subjects	Group	1	1.54	.62	0.09	0.01
	Error	38	—	—	—	—

The results of the repeated measures ANOVA indicated no significant difference between the study groups ($p > .05$).

Discussion

This study aimed to determine the effectiveness of compassion-based therapy on self-criticism and social adjustment among students with a substance-dependent parent. The findings indicated that compassion-based therapy significantly reduced self-criticism among students with a substance-dependent parent (P<0.05); however, no significant effect was observed on their social adjustment (P>0.05). The findings of this study showed that compassion-focused therapy (CFT) resulted in a

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statistically significant reduction in self-reported self-criticism in substance- dependent adolescents, and the magnitude of the effect size was of significant clinical relevance. Specifically, the experimental group showed a significant decrease in self-criticism scores from baseline to post-test and through the 8-week follow-up period, while the control group showed a negligible change in all measurement occasions. These results provide empirical support for the effectiveness of CFT as a psychological intervention aimed at the self-evaluating and self-condemning beliefs that characterize this vulnerable population. In contrast, social adaptation scores did not differ significantly between groups or across measurement phases, suggesting that the current intervention protocol, despite its effectiveness in reducing self-criticism, was insufficient to produce meaningful changes in social adjustment within the study timeframe.

These findings are consistent with previous research showing beneficial effects of compassion interventions on self-critical thinking. Varmarzyari and Golpour (2022) reported that self-esteem training significantly reduced self-criticism and increased social self-worth in female students who experienced test anxiety, a population sharing some of the psychological vulnerability of the current sample (Varmarzyari & Golpour, 2022). Similarly, Tabesh Mofrad and Mansouriyeh (2023) found that in Iranian adolescents, compassionate therapy effectively reduced maladaptive self-criticism while promoting adaptive coping strategies, a finding that is directly correlated to the reduction in self-criticism observed in this study(Tabesh Mofrad & Mansouriyeh, 2023). These convergent results suggest that the mechanisms targeted by CFT, especially the development of compassionate self-identity and the restructuring of punitive self-evaluation patterns, work in a consistent manner across different age groups and psychological presentations. Krieger et al. (2019) further confirmed these findings by demonstrating that online compassion-based interventions significantly reduce self-criticism, suggesting that the therapeutic effects of compassion-based interventions are robust across delivery formats and can be successfully implemented outside the traditional clinical setting.

Despite the overall consistency with prior literature, some studies reported different findings, especially with respect to the wider transfer effects of compassion interventions. Thomason and Moghaddam (2021) in their systematic review noted significant variability in the results of compassion intervention studies, and some studies did not show significant improvements in secondary outcomes such as interpersonal functioning or social adjustment. This discrepancy can

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be attributed to the variation in the dose of the intervention, the characteristics of the participants or the specific outcome measures used. In addition, Safihani Gholizadeh et al. (2024) found that, although compassion-based therapy effectively reduced oppositional defiant behavior in substance-

dependent students, the transfer of therapeutic gains to wider social domains was limited, which is consistent with the pattern seen in this study, where self-criticism improved but social adjustment did not.

The difference between a marked reduction in self-criticism and no change in social adjustment can be explained by several theoretical and methodological factors. First, self-criticism is primarily an intra-psychic phenomenon rooted in cognitive and affective processes, which can be addressed directly by imagery, cognitive restructuring, and the compassionate mind-training techniques that are central to the cognitive therapy paradigm (Gilbert, 2010). Social adjustment, however, is a multidimensional construct, dependent not only on individual psychological resources, but also on the interpersonal opportunities, environmental resources, and repertoire of behaviors needed to participate effectively in society. he eight-week duration of the intervention was sufficient to induce internal cognitive changes, but not to produce the behavioral changes and environmental changes needed to bring about meaningful improvements in social functioning. This interpretation is in line with the suggestion that social skills develop over time through repetition of practice in naturalistic environments (Vygotsky, 1978).

Second, the lack of family involvement in the intervention protocol may have limited the opportunities for social adjustment gains. Adolescents with substance-dependent parents often experience impaired attachment, communication problems between parents and children, and limited social-behavior modeling in the home environment (Abate et al., 2021). Without direct interventions addressing family dynamics and providing resources to support the social development of the carers, improvements in individual psychological status may not translate into improved social adjustment. This restriction is particularly important in the Iranian cultural context, where family unity and parental involvement play a central role in the socialization of adolescents. Third, measuring social adjustment through self-reported instruments may have introduced response biases that obscure subtle changes in social functioning. Adolescents who develop habitual patterns of self-criticism may also develop negative self-image patterns which

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affect their responses to social-adaptation assessments, potentially creating a disconnect between objective social behavior and subjective social self-evaluation. Future studies should consider including behavioral observations, peer review or environmental time-based assessment methods to generate more robust and comprehensive indices of social adjustment.

The findings of this study have important implications for researchers, clinicians and policy makers working with adolescents affected by parental substance use. The proven effectiveness of CFT in reducing self-criticism supports the integration of compassionate approaches in school-based mental health services targeted at this underprivileged population. As self-criticism is implicated in the development and persistence of depression, anxiety and suicidal ideation in vulnerable young people (Wong et al., 2025), interventions that effectively reduce self-criticism can be an important prevention strategy. However, the lack of findings on social adjustment highlights the need for multidisciplinary interventions combining individual psychotherapy with structural support such as peer mentoring, social skills training and family counselling. The inclusion of these additional components may be necessary to address the full spectrum of psycho-social needs of substance-dependent adolescents.

Several limitations of this study have to be recognized. A quasi-experimental design without randomization limits the causal inference, although the pretest group equivalence provides some confidence in the intrinsic validity of the observed effect. The relatively small sample size of 30 participants may limit the statistical power to detect small effects, especially with respect to the outcome of social adjustment. The exclusive focus on male adolescents in the Zahedan region limits the generalizability of the findings to female adolescents or to populations in other geographical areas with potentially different cultural norms and social structures. In addition, the lack of follow-up beyond 8 weeks prevents conclusions on the long-term sustainability of the treatment benefit. Future research should address these limitations by using randomized controlled trials, recruiting larger and more diverse samples, extending the duration of follow-up to 12 months or more, and including female participants to investigate possible gender differences in response to treatment.

In conclusion, this study provides encouraging evidence that compassion-based therapy can effectively reduce self-criticism in male adolescents with substance- dependent parents and offers a promising avenue to address the psychological consequences of growing up in a family affected

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by parental substance abuse. However, the lack of evidence of improvement in social adjustment highlights the complexity of this outcome variable and indicates that targeted, multidisciplinary interventions may be needed to support comprehensive psychosocial functioning in this population. Continued research into compassion-based approaches, complemented by family and social components, has the potential to advance the evidence base for treating adolescents who face a complex set of adversities in their development.

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Data availability statement

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

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of University of Sistan and Baluchestan. The patients/participants provided their written informed consent to participate in this study.

Author contributions

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

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Conflict of interest

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

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