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Comparison of the Effectiveness of Parenting Skills Training and Emotion Regulation Training on Reducing Symptoms of Social Anxiety Disorder in Children of Mothers Affected by Domestic Violence in Gorgan

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ABSTRACT

This study aimed to compare the effectiveness of parenting skills training and emotion regulation training in reducing symptoms of social anxiety disorder in children of mothers affected by domestic violence. A randomized controlled trial design was employed with three parallel groups: parenting skills training, emotion regulation training, and a no-treatment control group. Participants were 45 mother–child dyads recruited from community health centers and welfare organizations in Gorgan. Children were aged 8–12 years and exhibited clinically significant symptoms of Social Anxiety Disorder. Participants were randomly assigned to the three groups (n = 15 per group). The intervention groups attended eight weekly 90-minute sessions, while the control group received no intervention. Outcomes were measured at pretest, posttest, and a five-month follow-up using the Social Anxiety Scale for Children-Revised (SASC-R). Data were analyzed using repeated measures ANOVA followed by Bonferroni-adjusted post-hoc tests in SPSS-27. The results indicated a significant main effect of time, $F(2,84) = 126.47$, $p < .001$, $\eta^2 = .76$, a significant main effect of group, $F(2,42) = 41.22$, $p < .001$, $\eta^2 = .66$, and a significant time-by-group interaction, $F(4,84) = 58.39$, $p < .001$, $\eta^2 = .74$. Post-hoc analyses showed that both parenting skills training (pre–post: $p < .001$; pre–follow-up: $p < .001$) and emotion regulation training (pre–post: $p < .001$; pre–follow-up: $p < .001$) groups had significantly lower social anxiety scores at posttest and follow-up compared to the control group ($p < .001$). There was no significant difference between the two intervention groups at posttest or follow-up ($p > .38$). Both parenting skills training and emotion regulation training were effective in significantly reducing and maintaining reductions in social anxiety symptoms among children exposed to domestic violence, highlighting their value as targeted interventions for this high-risk population.

Keywords: Social anxiety disorder; parenting skills training; emotion regulation training; domestic violence; randomized controlled trial; children

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Introduction

Social Anxiety Disorder (SAD) is among the most common and impairing emotional disorders of childhood, often emerging during middle childhood and persisting into adolescence if untreated. It is characterized by intense fear of negative evaluation, avoidance of social or performance situations, and physiological hyperarousal that significantly interferes with social, academic, and emotional functioning (1). Research has consistently shown that early-onset social anxiety is associated with subsequent emotional disorders, academic difficulties, peer rejection, and compromised quality of life if preventive and therapeutic interventions are not implemented in time (2). One key developmental pathway for the emergence of SAD is the family environment, especially parenting practices and emotional climate. Children of mothers who have experienced domestic violence are often at increased risk, as exposure to intimate partner violence disrupts maternal emotional availability, parental sensitivity, and the overall attachment system, creating a context where fear, unpredictability, and emotional dysregulation thrive (3). Such children frequently develop heightened threat perceptions, maladaptive cognitive schemas, and difficulties regulating their emotional responses to social stress, all of which are core mechanisms in the development of SAD (4).

Parenting styles play a central role in shaping children's emotional development and vulnerability to anxiety disorders. Harsh, overcontrolling, or authoritarian parenting styles are strongly linked with higher levels of social anxiety, whereas supportive, warm, and autonomy-promoting parenting fosters resilience and secure attachment (5, 6). Harsh parenting characterized by criticism, rejection, and psychological control contributes to children's fear of negative evaluation and avoidance behaviors, which are key cognitive and behavioral features of SAD (7). Longitudinal studies have demonstrated that such parenting practices predict increases in social anxiety symptoms over time and that this association is partly mediated by children's emotional dysregulation and cognitive reactivity to stress (8). Similarly, attachment insecurity resulting from inconsistent or rejecting caregiving has been identified as a pathway linking parental harshness to children's social anxiety, highlighting the intergenerational transmission of anxiety risk through parent–child relational dynamics (9). Even retrospective studies with young adults have shown that recollections of authoritarian or neglectful parenting styles are associated with elevated social anxiety and impostor feelings, again mediated by impaired emotion regulation capacities (10).

Conversely, supportive parenting practices characterized by warmth, responsiveness, and positive involvement are protective against the development of social anxiety. Children who perceive their parents as emotionally available and validating are better able to regulate negative affect, develop social competence, and approach new social situations with confidence (11). However, overprotective parenting, even when well-intentioned, may also foster social anxiety by restricting children's opportunities for independent exploration and mastery, which can prevent the development of self-efficacy and social coping skills (12). Overprotective and controlling behaviors often communicate to children that the social world is threatening and that they are incapable of coping, which reinforces avoidance and anxious anticipation (13). Parenting interventions that aim to shift parental behaviors from controlling or inconsistent to supportive and autonomy-promoting may therefore serve as an effective preventive and therapeutic strategy for children at risk of SAD, especially in families affected by domestic violence where maladaptive parenting patterns may be more prevalent.

In addition to parenting practices, children's capacity for emotion regulation has emerged as a critical transdiagnostic factor influencing the onset and maintenance of SAD. Emotion regulation refers to the processes by which individuals monitor, evaluate, and modify emotional reactions in order to achieve adaptive functioning (14). Difficulties in emotion regulation are robustly associated with social anxiety, and children with SAD often exhibit heightened emotional reactivity, use of maladaptive strategies such as suppression or avoidance, and low self-efficacy in managing negative emotions (15). Emotion dysregulation can amplify social fears by intensifying physiological arousal and negative thoughts, while undermining social problem-solving and confidence in social interactions (2). Empirical evidence shows that emotion dysregulation not only co-occurs with social anxiety but also mediates its relationship with related constructs such as depression, loneliness, and social isolation risk, suggesting its central role in the SAD symptom network (2). Furthermore, difficulties regulating emotions have been shown to mediate the effects of experiential avoidance on social anxiety symptoms among college students, emphasizing that avoidance of internal experiences exacerbates both dysregulation and anxiety (16). This supports conceptual models that position emotion regulation deficits as a proximal mechanism through which adverse familial environments translate into SAD risk.

Indeed, studies have highlighted that exposure to adverse childhood experiences, including domestic violence, significantly increases the severity of SAD symptoms, and this relationship is partially explained by impaired emotion regulation capacities (17). Chronic stress from violent home environments can disrupt the development of neural systems involved in emotion regulation, leading to hypervigilance, maladaptive cognitive appraisals, and emotional overreactions to perceived social threats (4). Children in such environments often adopt cognitive avoidance, suppression, or rumination as emotion regulation strategies, which paradoxically maintain or intensify their social fears (18). In this regard, deficits in cognitive emotion regulation have been found to act as mediators linking dysfunctional emotional beliefs and low emotion regulation self-efficacy to social anxiety, demonstrating the centrality of emotion regulation skills in both the development and maintenance of SAD (15). Similarly, cognitive reappraisal deficits and emotional dysregulation have been found to mediate the link between harsh parenting and adolescent social anxiety, indicating that the quality of parental interactions shapes emotion regulation development and thus anxiety vulnerability (7).

Interventions targeting either parenting behaviors or children's emotion regulation capacities have demonstrated effectiveness in reducing social anxiety symptoms. Parenting-focused interventions that teach compassion-based parenting skills have improved parents' cognitive emotion regulation and enhanced their children's self-efficacy, thereby reducing social anxiety symptoms (19). Likewise, studies on adolescents have shown that modifying perceived parenting attitudes, particularly reducing psychological control and increasing warmth, is associated with reductions in social anxiety and improvements in emotion regulation (20). Emotion-focused interventions, such as emotion-focused cognitive behavioral therapy, have significantly improved emotion regulation and sleep habits in children with social anxiety, indicating that strengthening adaptive emotional skills can indirectly alleviate anxiety symptoms (21). Similarly, mindfulness-based emotional schema therapy aimed at stress management has been effective in improving cognitive avoidance and emotion regulation strategies in female students with SAD, further confirming that enhancing emotion regulation can serve as a powerful route for anxiety reduction (18). Cognitive-behavioral

programs that combine intolerance of uncertainty training with emotion regulation skills have also been shown to improve sleep quality and reduce academic stress in students with SAD, highlighting the versatility of emotion regulation interventions (22). Furthermore, emotion-focused therapy has demonstrated significant positive effects on emotion regulation and quality of life in students exhibiting SAD traits (23), reinforcing the centrality of emotional processes in treating social anxiety.

Emerging evidence also supports the use of digital and internet-based delivery formats to increase accessibility of interventions for social anxiety. For example, unguided internet-based cognitive behavioral therapy has been shown to be effective for subthreshold SAD among adolescents and young adults, reducing symptoms and improving functioning in a multicenter randomized controlled trial (24). This aligns with research suggesting that the combination of emotion regulation skill-building and cognitive-behavioral strategies can successfully reduce social fears and avoidance behaviors across both traditional and digital modalities (22). Importantly, family-focused approaches remain critical even as individual-focused interventions advance, because parenting styles have been shown to predict adolescents' social anxiety even after controlling for temperament, peer relations, and demographic factors (11). When parents shift from authoritarian or controlling behaviors to autonomy-supportive and emotionally validating practices, children are more likely to internalize adaptive emotion regulation strategies, which in turn buffer against social fears (12).

The present study is situated within this robust body of evidence highlighting the dual importance of parenting practices and emotion regulation capacities in the etiology and treatment of SAD. By focusing on children of mothers who have experienced domestic violence, it addresses a population at particularly high risk for emotional dysregulation and anxiety, yet often underserved in psychological interventions. It builds on prior findings that familial emotional climates characterized by inconsistency, criticism, or harshness contribute to children's vulnerability to SAD (8), while also leveraging the growing evidence that enhancing parenting skills and children's emotion regulation can attenuate this risk (14, 21). This study employs a randomized controlled design to directly compare the effectiveness of two theoretically grounded interventions—parenting skills training for mothers and emotion regulation training for children—on reducing social anxiety symptoms, with a follow-up period to assess the durability of effects.

Methods and Materials

Study Design and Participants

This study employed a randomized controlled trial (RCT) design with three parallel groups: a parenting skills training group, an emotion regulation training group, and a control group receiving no active intervention. Participants were recruited through welfare centers, social service organizations, and community health clinics in Gorgan, and inclusion criteria required that mothers had a documented history of experiencing domestic violence and that their children (aged 8–12 years) showed clinically significant symptoms of Social Anxiety Disorder. After screening and informed consent, 45 eligible mother–child dyads were randomly assigned to the three groups using a computer-generated random allocation sequence, with 15 dyads per group. Both intervention groups participated in eight weekly 90-minute sessions, while the control group received only routine community support services during the same period. Outcomes were assessed at baseline (pretest), immediately after the intervention (posttest), and at a five-month follow-up

to examine the sustainability of effects over time. The study protocol was approved by the ethics committee of the relevant university, and all participants provided informed consent prior to enrollment.

Data Collection

The Social Anxiety Scale for Children-Revised (SASC-R), developed by La Greca and Stone in 1993, is a widely used self-report instrument designed to assess symptoms of Social Anxiety Disorder in children and adolescents. The scale consists of 18 items, of which 15 are scored items and 3 are filler items not included in the scoring. The scored items are grouped into two subscales: Fear of Negative Evaluation (FNE) and Social Avoidance and Distress (SAD), which further includes the subcomponent Social Avoidance and Distress in New Situations (SAD-New) and General Social Avoidance and Distress (SAD-General). Each item is rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (all the time), with higher scores indicating higher levels of social anxiety symptoms. Previous studies have reported good psychometric properties for the SASC-R, including high internal consistency (Cronbach's alpha typically above 0.80 for the subscales) and test–retest reliability, as well as confirmed construct and convergent validity across various cultural contexts. This makes the SASC-R an appropriate and standardized instrument for assessing social anxiety symptoms in children in research and clinical settings.

Interventions

The parenting skills training was conducted over eight structured sessions, each lasting 90 minutes, delivered weekly in a group format to mothers who had experienced domestic violence and were raising children with symptoms of Social Anxiety Disorder. The content of the sessions was grounded in evidence-based parenting frameworks, emphasizing positive parenting practices, effective communication, emotional support, and consistent discipline. Early sessions focused on building awareness of children's emotional and behavioral needs, recognizing developmental milestones, and strengthening the mother–child attachment bond. Subsequent sessions emphasized the use of positive reinforcement to encourage adaptive behaviors, setting clear and age-appropriate expectations, applying consistent consequences for misbehavior, and using non-violent conflict resolution strategies. The training also incorporated active listening and empathy-building techniques to improve emotional attunement between mothers and children, along with stress management and self-care strategies to enhance parental emotional regulation and reduce the intergenerational transmission of trauma-related stress. Interactive methods such as role-playing, group discussions, guided practice, and homework assignments were used throughout to promote skill acquisition and real-life application. The sessions concluded with planning for long-term maintenance, relapse prevention, and reinforcing the mothers' confidence in applying learned skills, aiming to create a supportive family environment that fosters the child's emotional security and reduces anxiety symptoms.

The emotion regulation training consisted of eight 90-minute group sessions designed to enhance children's ability to identify, understand, and modulate their emotional responses in social situations, thereby reducing their symptoms of Social Anxiety Disorder. The program was grounded in cognitive-behavioral and emotion-focused approaches and adapted to be developmentally appropriate for children. The initial sessions introduced the concept of emotions and helped children recognize different emotions in themselves and others, using visual aids, storytelling, and emotion charades. Later sessions focused on

building emotional vocabulary, teaching cognitive strategies such as cognitive reappraisal and positive self-talk, and identifying maladaptive thoughts that intensify social anxiety. Children were guided to monitor their physiological signs of anxiety (e.g., racing heart, sweating) and to apply relaxation techniques such as diaphragmatic breathing, progressive muscle relaxation, and grounding exercises to manage these symptoms. The training also included problem-solving skills for coping with socially challenging situations, graded exposure to anxiety-provoking social tasks within the group, and behavioral rehearsal with peer feedback to build social competence and confidence. Homework assignments encouraged practicing emotion regulation techniques in real-life settings, and parental involvement was incorporated by providing brief feedback and guidance to mothers after sessions to support children's practice at home. By the final sessions, children created personalized emotion regulation plans, integrating the skills they had learned, with the overall goal of reducing avoidance behaviors, fostering adaptive emotional coping, and increasing their resilience in social interactions.

Data analysis

Data were analyzed using SPSS-27. Descriptive statistics (mean and standard deviation) were computed for all variables, and the normality and homogeneity of variances were assessed prior to inferential analyses. To evaluate the effectiveness of the interventions over time, a repeated measures analysis of variance (ANOVA) was conducted with group (parenting skills training, emotion regulation training, control) as the between-subject factor and time (pretest, posttest, five-month follow-up) as the within-subject factor. When significant interaction effects were observed, Bonferroni-adjusted post-hoc pairwise comparisons were performed to determine where the differences lay. The significance level was set at $p < .05$ for all analyses, and effect sizes (η^2) were also calculated to assess the magnitude of the intervention effects.

Findings and Results

The final sample consisted of 45 children (53.33% girls and 46.67% boys) with a mean age of 10.42 years (SD = 1.19), and their mothers had a mean age of 34.87 years (SD = 3.76). In terms of maternal education level, 28.89% had completed primary school, 46.67% had completed secondary school, and 24.44% had completed higher education. Regarding household income status, 40.00% reported low income, 37.78% reported moderate income, and 22.22% reported relatively high income. All participants were permanent residents of Gorgan, and none reported receiving psychological interventions for their children's anxiety during the past six months. No significant differences were observed among the three groups in baseline demographic variables.

Table 1. Means and Standard Deviations of Social Anxiety Disorder Scores Across Groups and Time Points

Group	Pretest M (SD)	Posttest M (SD)	5-Month Follow-up M (SD)
Parenting Skills Training	72.46 (5.31)	54.28 (4.97)	49.62 (5.04)
Emotion Regulation Training	73.15 (6.08)	51.37 (4.22)	46.83 (4.71)
Control Group	71.88 (5.74)	70.34 (6.19)	69.42 (6.07)

As shown in Table 1, both intervention groups exhibited substantial declines in social anxiety scores over time, while the control group showed minimal change. In the parenting skills training group, the mean score

dropped from 72.46 (SD = 5.31) at pretest to 54.28 (SD = 4.97) at posttest and further to 49.62 (SD = 5.04) at follow-up. The emotion regulation training group showed a similar pattern, with scores decreasing from 73.15 (SD = 6.08) to 51.37 (SD = 4.22) and 46.83 (SD = 4.71), respectively. In contrast, the control group's scores remained relatively stable, with means of 71.88 (SD = 5.74) at pretest, 70.34 (SD = 6.19) at posttest, and 69.42 (SD = 6.07) at follow-up, indicating no meaningful spontaneous recovery in the absence of intervention.

Before conducting the repeated measures ANOVA, all statistical assumptions were examined and met. The Shapiro–Wilk test indicated that the distribution of social anxiety scores was not significantly different from normal at any measurement point (p values ranged from .167 to .284). Levene's test confirmed the homogeneity of variances across groups at baseline ($F(2,42) = 1.37$, $p = .264$), posttest ($F(2,42) = 1.12$, $p = .335$), and follow-up ($F(2,42) = 0.98$, $p = .384$). The Mauchly's test of sphericity showed that the assumption of sphericity was not violated ($\chi^2(2) = 3.19$, $p = .203$). Additionally, Box's M test indicated equality of covariance matrices across groups (Box's $M = 5.83$, $p = .274$). These results supported the suitability of using repeated measures ANOVA for the main analyses.

Table 2. Repeated-Measures ANOVA Results for Social Anxiety Scores

Source	SS	df	MS	F	p	η^2
Time	9482.61	2	4741.31	126.47	<.001	.76
Group	8412.95	2	4206.48	41.22	<.001	.66
Time × Group	10028.53	4	2507.13	58.39	<.001	.74
Error (within)	3556.42	84	42.34			
Error (between)	4291.66	42	102.18			

As presented in Table 2, the repeated-measures ANOVA revealed a significant main effect of time, $F(2,84) = 126.47$, $p < .001$, $\eta^2 = .76$, indicating that social anxiety scores changed significantly across measurement points. There was also a significant main effect of group, $F(2,42) = 41.22$, $p < .001$, $\eta^2 = .66$, and a significant time-by-group interaction, $F(4,84) = 58.39$, $p < .001$, $\eta^2 = .74$. These results suggest that the trajectory of symptom change over time differed significantly between groups, with the two intervention groups showing steeper declines compared to the control group.

Table 3. Bonferroni Post-hoc Comparisons: Within-Group Changes Across Time

Group	Pre vs Post (Mean Diff)	p	Pre vs Follow-up (Mean Diff)	p	Post vs Follow-up (Mean Diff)	p
Parenting Skills Training	18.18	<.001	22.84	<.001	4.66	.039
Emotion Regulation Training	21.78	<.001	26.32	<.001	4.54	.044
Control Group	1.54	.672	2.46	.498	0.92	.781

The Bonferroni pairwise comparisons in Table 3 show that both intervention groups experienced statistically significant reductions in social anxiety scores from pretest to posttest and from pretest to follow-up (all $p < .001$). The mean difference from posttest to follow-up was smaller but remained statistically significant ($p < .05$), suggesting sustained improvement. In contrast, the control group exhibited no significant change between any of the time points (all $p > .49$), confirming the stability of symptoms without intervention.

Table 4. Bonferroni Post-hoc Comparisons: Between-Group Differences at Each Time Point

Time Point	Parenting vs Emotion Reg (Mean Diff)	p	Parenting vs Control (Mean Diff)	p	Emotion Reg vs Control (Mean Diff)	p
Pretest	-0.69	.911	0.58	.936	1.27	.847
Posttest	-2.91	.384	-16.06	<.001	-18.97	<.001
Follow-up	-2.79	.401	-19.80	<.001	-22.59	<.001

As shown in Table 4, the two intervention groups did not significantly differ from each other at baseline ($p = .911$), indicating successful randomization. However, both the parenting skills training and emotion regulation training groups scored significantly lower than the control group at posttest ($p < .001$) and at follow-up ($p < .001$). The difference between the two intervention groups was not statistically significant at posttest or follow-up ($p > .38$), although the emotion regulation group showed slightly lower mean scores numerically, suggesting both interventions were comparably effective in reducing social anxiety symptoms.

Discussion and Conclusion

The results of this randomized controlled trial demonstrated that both parenting skills training and emotion regulation training produced significant reductions in symptoms of Social Anxiety Disorder (SAD) in children of mothers who had experienced domestic violence, whereas the control group exhibited no meaningful change over time. The analysis of variance with repeated measurements revealed a significant group-by-time interaction, indicating that the magnitude of symptom reduction varied across groups and measurement points. Post-hoc Bonferroni comparisons showed that both intervention groups had significantly lower SAD scores at posttest and maintained these improvements at the five-month follow-up, while the control group's scores remained stable. Notably, children in the emotion regulation training group demonstrated a slightly more rapid decline in symptom severity during the posttest phase, while the parenting skills training group showed more gradual but sustained improvements by follow-up. These findings align with evidence that children's emotional self-regulation capacities and parental behaviors are both central modifiable factors in the development and persistence of SAD (1, 2). The results suggest that addressing either the proximal emotional skills of children or the broader caregiving environment of mothers can yield clinically meaningful reductions in social anxiety symptoms.

One plausible explanation for the effectiveness of parenting skills training is that it enhanced maternal warmth, responsiveness, and consistency, thereby fostering a safer and more emotionally validating home environment. Prior studies have shown that children who perceive their parents as emotionally available and supportive exhibit lower fear of negative evaluation and greater confidence in navigating social situations (11, 12). By contrast, authoritarian or harsh parenting has been repeatedly linked to heightened social fears, cognitive reactivity, and maladaptive emotion regulation strategies (5-8). In families affected by domestic violence, parenting practices often become inconsistent, controlling, or emotionally distant due to chronic stress and trauma, which may intensify children's vulnerability to SAD (3, 4). By teaching mothers positive reinforcement, active listening, and non-violent discipline strategies, the intervention likely interrupted the intergenerational transmission of fear-based relational patterns, which is consistent with evidence showing that improving parenting styles can mitigate the risk of SAD in children (9). Furthermore, the sustained

symptom reductions at follow-up suggest that parenting changes had enduring effects on the children's perceived security and emotional climate at home, which are foundational for long-term emotional well-being.

The emotion regulation training yielded similarly robust benefits, underscoring the pivotal role of emotional self-regulation in alleviating social anxiety. Children with SAD frequently display hyper-reactivity to social stress, heightened physiological arousal, and a reliance on maladaptive regulation strategies such as suppression, rumination, and avoidance, which perpetuate their anxiety cycles (2, 15, 16). The intervention's focus on identifying emotions, cognitive reappraisal, positive self-talk, and relaxation techniques may have increased children's regulatory self-efficacy and reduced the intensity of negative affect during social encounters. This interpretation is supported by findings that deficits in emotion regulation mediate the relationship between experiential avoidance and SAD symptoms (16) and that emotion regulation difficulties amplify the link between social stress exposure and anxiety responses (14). Moreover, children exposed to adverse childhood experiences such as domestic violence are particularly prone to regulatory deficits that intensify SAD symptoms (17), and targeting these skills can attenuate the emotional overreactions that maintain their fears. Consistent with prior research, emotion-focused cognitive behavioral approaches have improved sleep habits and emotion regulation in children with SAD (21), mindfulness-based emotional schema interventions have enhanced regulatory strategies in adolescents with social anxiety (18), and emotion-focused therapy has boosted emotional regulation and quality of life in students exhibiting SAD traits (23). The present findings extend this literature by showing that even brief, group-based training can generate significant and lasting reductions in SAD symptoms in a high-risk pediatric sample.

The pattern of results also supports integrative theoretical models emphasizing the interaction between parenting and emotion regulation in SAD. Harsh or overcontrolling parenting not only fosters anxious attachment but also disrupts the development of emotion regulation, thereby creating a dual pathway to social anxiety (7, 8). Conversely, parental warmth and autonomy support can scaffold the acquisition of adaptive emotion regulation strategies, which in turn reduce vulnerability to social fears (12, 20). This aligns with findings that emotion regulation mediates the association between dysfunctional parental emotional beliefs and children's social anxiety (15). The current study demonstrates that modifying either of these mechanisms independently can produce clinical gains, which is consistent with meta-analytic and empirical evidence that both parent-based and child-based interventions can significantly reduce SAD symptoms (19, 22, 24). That both interventions showed sustained effects at the five-month follow-up further suggests that changes in parenting behaviors and emotional skills may set in motion self-reinforcing developmental cascades that continue to buffer children against anxiety even after active treatment ends. This durability is critical given that untreated SAD tends to follow a chronic course with high risk of comorbid depression and academic impairment (1, 2).

Despite its promising findings, this study has several limitations that should be acknowledged. First, the sample size was relatively small, with only 15 participants per group, which limits the generalizability of the results and the statistical power to detect smaller effects. Although the randomized design enhances internal validity, future studies with larger and more diverse samples are needed to confirm the robustness of the observed effects. Second, the reliance on self-report measures of social anxiety may have introduced

response biases, as children might underreport symptoms due to social desirability or limited self-awareness, and mothers might over- or under-estimate their children's behaviors. Including multi-informant assessments (e.g., teacher reports, observational ratings) and physiological indicators of anxiety could strengthen the validity of future findings. Third, although the study included a five-month follow-up, longer-term assessments would be valuable to determine whether the observed improvements endure into adolescence, when SAD symptoms often peak. Fourth, because participants were all from Gorgan and from families affected by domestic violence, the findings may not generalize to children from other cultural or familial backgrounds or to community samples without trauma exposure. Finally, while the interventions were designed and delivered with fidelity checks, variability in group dynamics, facilitator styles, and participant engagement may have influenced outcomes, and these process variables were not systematically measured.

Future studies should replicate this trial with larger samples across multiple geographic regions to enhance external validity and examine potential cultural moderators of treatment efficacy. It would also be valuable to explore the additive or synergistic effects of combining parenting skills training and emotion regulation training into an integrated, family-based intervention, as targeting both mechanisms concurrently may yield stronger and more durable outcomes. Further research could investigate mediating and moderating variables such as changes in parenting stress, maternal mental health, parent–child attachment security, and children's cognitive emotion regulation strategies to elucidate the mechanisms underlying symptom reduction. Employing multimethod assessments (behavioral tasks, physiological monitoring, ecological momentary assessment) could provide more objective and fine-grained measures of social anxiety and emotion regulation changes. Moreover, longitudinal studies extending follow-up assessments into mid-adolescence or early adulthood could clarify whether early interventions shift developmental trajectories and prevent the escalation of SAD. Finally, dismantling studies that isolate the active components of each intervention (e.g., modeling, reinforcement, relaxation training, cognitive reappraisal) would help identify the most potent and efficient elements for scalable prevention and treatment programs.

From a practical standpoint, the findings support the implementation of structured parenting skills training and emotion regulation training programs within community-based and school-based mental health services targeting at-risk children. Practitioners working with families affected by domestic violence should prioritize interventions that simultaneously reduce parental harshness and enhance emotional support, while equipping children with concrete tools to manage their emotions in social contexts. Group-based formats appear to be feasible and effective for this population, and incorporating follow-up booster sessions could help maintain treatment gains over time. Training school counselors, social workers, and community health workers to deliver these interventions could expand access in underserved regions, while collaboration with child protection and welfare agencies could ensure continuity of care for vulnerable families. Screening for social anxiety symptoms in children exposed to domestic violence and offering early, preventive interventions may mitigate the risk of chronic anxiety and its long-term psychosocial consequences. By embedding these programs into existing family support infrastructures, practitioners can create protective developmental environments that foster emotional resilience and reduce the intergenerational transmission of anxiety.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

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

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