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Enhancing Assertiveness in Childhood Anxiety: A Randomized Controlled Comparison of Solution-Focused Skills Training,Acceptance and Commitment Therapy-Based Play Therapy

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ABSTRACT

Background: Anxiety disorders represent one of the most prevalent mental health concerns in childhood and can substantially impair social and emotional functioning. The present study compared the effectiveness of two child-centered interventions—Solution-Focused Child Skills Training (SF-CST) and Acceptance and Commitment Therapy-based Play Therapy (ACT-based PT)—in promoting assertiveness among children with anxiety.

Methods: This randomized controlled trial employed a pretest–posttest–follow-up design. Sixty female students aged 9–12 with a psychiatrist-confirmed diagnosis of social anxiety disorder or generalized anxiety disorder were recruited via convenience sampling from schools in District 5, Tehran, during the 2024–2025 academic year. Participants were randomly assigned to three groups (n = 20 per group): SF-CST, ACT-based PT, and a wait-list control group. Each intervention consisted of eight weekly 60-minute sessions. Moreover, assertiveness was measured using the Gambrill and Richey Assertion Inventory at pretest, posttest, and three-month follow-up. Data were then analyzed using repeated-measures ANOVA followed by Bonferroni post-hoc tests in SPSS version 26.

Results: Both intervention groups exhibited significant improvements in assertiveness scores relative to the control group ($p<0.001$). The ACT-based PT group showed significantly greater gains in assertiveness than the SF-CST group at both posttest and follow-up ($p<0.01$). Treatment gains were sustained at the three-month follow-up in both intervention groups, with no significant deterioration observed.

Conclusion: ACT-based PT proved more effective than SF-CST in enhancing assertiveness among children with anxiety. The greater efficacy of ACT-based PT may stem from its focus on psychological flexibility, emotional acceptance, and values-based action—core mechanisms that directly address experiential avoidance and fear-related responses characteristic of anxiety.

Keywords: Assertiveness, Anxiety disorders, Child, Psychotherapy, Acceptance and commitment therapy

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Introduction

Anxiety disorders are highly prevalent childhood psychopathologies, affecting 6.5% to 32.9% of youth globally depending on age, assessment, and culture (Micco et al., 2019; Predescu et al., 2018). Characterized by excessive worry and behavioral avoidance, these disorders cause significant social, academic, and familial disruptions. Consequently, childhood anxiety is linked to severe long-term sequelae, including academic underachievement, peer difficulties, diminished self-esteem, and increased risk for subsequent depression and substance use (Aghaei & Kian, 2021; Kajastus et al., 2024). Given this pervasive impairment, early and effective intervention remains a critical public health priority to optimize developmental trajectories (Pella et al., 2017).

Assertiveness—the capacity to express thoughts and needs honestly while respecting others' rights—functions as a crucial protective factor against the detrimental effects of anxiety. In children, assertiveness correlates with enhanced self-confidence, emotional resilience, and positive peer relationships (Taghizadeh Hir et al., 2023; Tajik Khaveh et al., 2026). Conversely, anxious children often employ submissive or avoidant interpersonal strategies that perpetuate fears of negative evaluation and exacerbate internal distress (Rajabi Jourshari et al., 2022). Empirical evidence demonstrates that targeted assertiveness training significantly mitigates social anxiety and improves socio-emotional functioning (Abdolghaderi et al., 2021; Eslami et al., 2016; Mohagheghi et al., 2022). Therefore, fostering assertiveness is essential in therapeutic approaches for childhood anxiety.

While traditional cognitive-behavioral therapies (CBT) demonstrate established efficacy (Fisak et al., 2023), standard protocols often rely on abstract, verbal demands that challenge younger children. This necessitates developmentally attuned interventions utilizing structured skill-building and play (Li et al., 2025). Solution-Focused Child Skills Training (SF-CST) offers a strengths-based, future-oriented alternative that reframes psychological difficulties as learnable skills (Khavari Khorasani et al., 2024). This collaborative process guides children and their support networks through identifying, practicing, and positively reinforcing desired skills (Aghabaki et al., 2026). Trials indicate that SF-CST mitigates anxiety symptoms and enhances social competence through behavioral rehearsal and the cultivation of self-efficacy (Chen et al., 2023; Keshavarz Afshar et al., 2022).

Alternatively, third-wave approaches like Acceptance and Commitment Therapy (ACT) target psychological flexibility—the ability to pursue value-aligned behaviors while sustaining contact with aversive internal experiences (Ghomian & Shairi, 2016). Its Hexaflex model encompasses acceptance, cognitive defusion, present-moment awareness, self-as-context, values clarification, and committed action ((Arch et al., 2023). Adapted for children via play therapy (ACT-based Play Therapy; ACT-based PT), these processes are conveyed through metaphors, experiential games, and creative activities suitable for young ages (Tayyebi et al., 2024). Emerging evidence shows ACT-based PT significantly reduces anxiety, emotional dysregulation, and behavioral avoidance by altering children's functional relationships with anxious cognitions rather than attempting symptom elimination (Hosseini et al., 2024; Mortazavi et al., 2018; Swain et al., 2015).

Although SF-CST and ACT-based PT are individually effective, no published study has compared their impact on assertiveness in anxious children. SF-CST prioritizes rapid skill acquisition via reinforcement, potentially yielding prompt benefits. In contrast, ACT-based PT addresses experiential avoidance and cognitive fusion, potentially yielding more enduring gains by targeting the emotional mechanisms underlying submissive behaviors.

To address this gap, the present randomized controlled trial evaluates the comparative

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effectiveness of eight-session protocols of SF-CST versus ACT-based PT on assertiveness among 9–12-year-old girls with diagnosed anxiety disorders. It was hypothesized that both active interventions would significantly outperform a wait-list control condition, and that ACT-based PT would demonstrate superior, sustained outcomes at follow-up due to its emphasis on psychological flexibility and emotional acceptance.

Methods

Design

This study utilized a randomized controlled trial (RCT) design with a pretest–posttest–follow-up structure, incorporating a wait-list control group to evaluate both immediate and sustained intervention effects over three months.

Participants

The study population comprised female students aged 9–12 in District 5, Tehran, during the 2024–2025 academic year. Three public schools were selected via convenience sampling, yielding 60 purposively recruited participants. An a priori power analysis using G*Power 3.1 for a repeated-measures ANOVA (medium effect size f=0.25, α=0.05, power=0.80) indicated a minimum sample of 54. To account for anticipated 10% attrition, 60 eligible students were randomly assigned to three equal groups (n=20): Solution-Focused Child Skills Training (SF-CST), ACT-based Play Therapy (ACT-based PT), and a wait-list control. Although groups were larger than typical for play therapy, therapeutic integrity was maintained through highly structured protocols and expert facilitation.

Inclusion and Exclusion Criteria

Inclusion criteria required female sex, age 9–12, and a psychiatrist-confirmed diagnosis of generalized or social anxiety disorder following clinically elevated scores on the Spence Children's Anxiety Scale. These disorders were specifically targeted because their hallmark interpersonal and avoidance behaviors directly impair assertiveness and are responsive to the proposed interventions. Exclusion criteria included a lack of participant assent or absence from more than two therapeutic sessions.

Procedure

Following ethical approval, students from three schools were screened using the parent-reported Spence Children's Anxiety Scale. Children exceeding the clinical cutoff (T-score ≥ 60) underwent psychiatric evaluation to confirm social or generalized anxiety disorder (Ahlen et al., 2018) prior to randomization. The primary outcome, the parent-reported Gambrill and Richey Assertiveness Inventory, was administered at baseline, post-intervention, and three-month follow-up. Following brief parent orientations, a clinical psychologist delivered eight weekly 60-minute intervention sessions to the active groups, while the control group received no treatment. Posttest and follow-up evaluations were conducted uniformly across all groups.

Research Instruments

Gambrill and Richey Assertiveness Inventory (GRAI): The GRAI (Aliyar Najafabadi et al., 2020) assessed assertiveness via parent report. The original 40-item self-report measure was adapted for this study to a shortened 22-item Persian version suitable for parent proxy assessment of assertiveness in school-aged children (9–12). This adaptation involved selecting and translating 22 representative items from the original scale that describe everyday situations requiring assertive responses (e.g., expressing negative feelings, claiming personal rights), retaining the 6-point Likert scale (1–6), with higher total scores reflecting greater assertiveness. The adapted version comprises four subscales: (1) Assertiveness in Social Situations, (2) Expressing Feelings, (3) Demanding Personal Rights, and (4) Assertiveness in Specific Situations. Content validity was established by five child clinical psychologists (item-level Content Validity Index [CVI] > 0.80; scale-level S-CVI/Ave=0.92). Furthermore, face validity was confirmed with feedback from 10 parents of similarly aged children. Prior Persian adaptations and uses of the GRAI (primarily the full 40-item version for adolescents or adults) have reported acceptable internal consistency (α=0.81) (Aliyar Najafabadi et al., 2020). In the present

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study, using the 22-item parent-report adaptation, Cronbach's α was 0.89 (pretest), 0.91 (posttest), and 0.93 (follow-up).

Intervention Programs

Both interventions were manualized, and eight-session protocols were delivered by the same trained psychologist.

Solution-Focused Child Skills Training (SF-CST) Protocol*:* This strengths-based, future-oriented approach (the "Kids' Skills" method; Furman) reframes problems as learnable skills, involving collaborative identification, naming, rehearsal, and reinforcement with the child, parents, and teachers. Session summaries appear in (Table 1).

Table 1. Summary of solution-focused child skills training (SF-CST) sessions

Session	Goal	Content	Inter-session Task
1	Converting the problem into a skill; agreeing on the skill to be learned with the family and child	Discussing with parents and trainers the necessity of focusing on skills rather than problems. Introduction of the workbook.	Parents/trainers study the introductory part of the workbook. Students color some worksheets.
2	Choosing a name for the skill and reviewing the benefits of the intended skill	Selecting a positive and appealing name for the skill by the child and discussing the benefits of learning this skill.	The child writes or draws the reasons for choosing the name and the benefits of learning the skill with parental assistance.
3	Choosing an imaginary powerful being, an animal as a helper, and supportive people	Agreeing on choosing an imaginary supporter, an animal, and people to help in skill acquisition.	The child writes or draws who their supporters are and what help they need, completing the relevant workbook section.
4	Promoting the child's self-esteem	Discussion with parents to acquire exercises and maintain non-problematic conversation, focusing on small positive situations.	The child writes and draws about their abilities and provides photos of any relevant artwork done at home.
5	Celebrating the change and public announcement	Discussion with the child about how to hold the celebration and agreeing on announcing the skill acquisition publicly.	The child creates a guest list and makes invitations with parental assistance.
6	Showcasing the skill, role-playing, and practicing; creating a code for remembrance	Agreement on how to role-play and practice the skill; choosing a code by the child for recalling the skill when facing challenges.	The child performs the role-play at home and films it; parents complete the relevant section of the guide.
7	Celebrating and thanking the helpers	Holding the celebration according to the child's wishes and thanking the individuals who helped in the process.	The child makes thank-you cards for the helpers with the parents' assistance.
8	Teaching the acquired skill to another person; selecting the next necessary skill	Agreement with the child on selecting the person to be taught by the child; agreeing on the next necessary skill.	The child draws a picture for the student who will be taught, writes the reason for choosing the next skill, and completes the relevant workbook section.

ACT-based PT Protocol: This play-adapted ACT protocol targets psychological flexibility through metaphors, games, and experiential activities addressing acceptance, defusion, mindfulness, values, and committed action. Session summaries appear in (Table 2).

Table 2. Summary of acceptance and commitment therapy-based play therapy (ACT-based PT) sessions

Session	Goal	Description
1	Mindfulness and familiarity with	Discussing positive and negative emotions, memories, and desires;

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	the inner world	teaching and playing the "Good and Bad Memory" game.
2	Values clarification	Playing the "Ship and Captain" game (saving paper ships from sinking); discussing the participants' important life goals and the importance of pursuing them.
3	Introducing ineffective control strategies; committed action	The "Balloon Tiger" game: discussing fears, anxieties, and distresses (comparing them to a balloon tiger); discussing how to deal with anxieties and fears.
4	Acceptance, defusion, committed action	Playing the "Bus Game": discussing the noises of the inner world as bus passengers and how to deal with them.
5	Mindfulness and Contact with the present moment	Teaching meditation techniques and training the children on how to use the five senses in different situations ("Calm Kids" technique).
6	Contact with the present moment	Playing the "Living in the Present Moment" game: mindful eating of pistachios or raisins; discussing enjoying one's surroundings and five-sense mindfulness.
7	Self-as-context (the transcendent self)	Playing "The Invincible Me" and "The Mirror Me" to teach that the core self is not affected or "colored" by temporary emotions or thoughts.
8	Review and organization of the six ACT processes for psychological flexibility	Playing "Who Can Tell a Better Story from the Games?" (children perform a play connecting all the games); concluding with the message that difficult feelings should not prevent them from pursuing their goals.

Data analysis

Analyses were conducted in SPSS version 26. Normality (Shapiro–Wilk) and homogeneity of variances (Levene's) assumptions were also verified. Primary analyses employed mixed repeated-measures ANOVA (Group × Time) to examine assertiveness changes across pretest, posttest, and follow-up. Finally, significant effects were followed by Bonferroni-corrected post-hoc tests (or Tukey where appropriate) to locate group and time differences.

Results

The final sample comprised 60 female children aged 9–12 (M=10.58, SD=1.02) with a confirmed diagnosis of an anxiety disorder (social anxiety disorder or generalized anxiety disorder). All participants attended public elementary schools in District 5, Tehran. No significant baseline differences emerged across the three groups in age, anxiety disorder type, or pretest assertiveness scores ($p>0.05$). Moreover, descriptive statistics for the total assertiveness score and its four subscales are presented in Table 3. At pretest, mean scores on all measures were comparable across groups, indicating equivalent baseline assertiveness levels. At posttest, both intervention groups exhibited marked increases in assertiveness relative to the wait-list control group, with the Acceptance and Commitment Therapy-based Play Therapy (ACT-based PT) group consistently obtaining higher means than the Solution-Focused Child Skills Training (SF-CST) group. These improvements were largely sustained at the three-month follow-up, with only negligible changes from posttest to follow-up in the two experimental groups (Table3).

Table 3. Descriptive statistics for assertiveness subscales and total score across groups and measurement points

Variable	Groups	Pretest	Posttest	Follow-up
		Mean ± SD	Mean ± SD	Mean ± SD
Assertiveness in social situations	SF-CST group	14.21±1.46	17.25±2.50	17.43±2.03
	ACT-based PT group	14.49±1.28	20.52±2.40	20.68±2.45
	Control group	14.19±1.57	14.25±1.64	14.36±1.55
Expressing feelings	SF-CST group	11.58±1.29	14.33±4.95	14.43±4.99
	ACT-based PT group	11.49±1.48	17.46±3.76	17.66±3.53
	Control group	11.06±1.19	11.17±1.32	11.28±1.48

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Demanding personal rights	SF-CST group	13.03±1.42	16.14±1.94	16.24±1.83
	ACT-based PT group	13.11±1.45	18.66±1.80	18.82±1.94
	Control group	13.21±0.88	13.30±1.08	13.36±1.06
Assertiveness in specific situations	SF-CST group	10.40±1.93	17.87±5.55	14.91±5.43
	ACT-based PT group	10.76±1.79	19.22±3.90	19.38±3.81
	Control group	10.09±1.69	10.23±1.79	10.27±1.74
Assertiveness (total)	SF-CST group	49.23±5.39	62.60±13.19	63.01±12.14
	ACT-based PT group	49.85±4.98	75.86±8.83	76.55±9.21
	Control group	48.55±4.55	48.95±4.94	49.27±4.75

Prior to primary analyses, assumptions for repeated-measures ANOVA were verified. Shapiro–Wilk tests confirmed normality at all time points ($p>0.05$). Moreover, Levene's tests supported homogeneity of variances across groups ($p>0.05$), and Mauchly's tests of sphericity were nonsignificant for all dependent variables ($p>0.05$); thus, no ε correction was required. A series of 3 (Group) × 3 (Time) mixed ANOVAs (see Table 4) yielded significant main effects of Group and Time, along with significant Group × Time interactions, for the total assertiveness score and all four subscales ($p<0.001$). Effect sizes were large for the Group factor (partial $\eta^2=0.49–0.63$) and the Group × Time interaction (partial $\eta^2=0.28–0.57$), underscoring substantial between-group differences in change trajectories and the interventions' substantial contribution to variance in assertiveness outcomes(Table4).

Table 4. Results of mixed ANOVA for assertiveness subscales

Variable	Source	SS	df	MS	F	P	η^2
Assertiveness in social situations	Group	555.66	2	277.83	43.04	0.001	0.60
	Time	306.08	1	306.08	116.80	0.001	0.67
	Group × Time	181.66	2	90.83	34.66	0.001	0.55
Expressing feelings	Group	573.01	2	286.51	16.29	0.001	0.6
	Time	284.44	1	284.44	35.94	0.001	0.39
	Group × Time	177.88	2	88.94	11.24	0.001	0.28
Demanding personal rights	Group	382.84	2	191.42	49.38	0.001	0.63
	Time	274.10	1	274.11	135.70	0.001	0.70
	Group × Time	155.02	2	77.51	38.37	0.001	0.57
Assertiveness in specific situations	Group	1174.68	2	587.34	27.74	0.001	0.49
	Time	589.87	1	586.87	57.61	0.001	0.50
	Group × Time	356.75	2	178.37	17.42	0.001	0.38

Bonferroni-adjusted pairwise comparisons (Table 5) confirmed highly significant increases from pretest to posttest and from pretest to follow-up across all assertiveness measures ($p<0.001$). Critically, no significant differences emerged between posttest and follow-up means ($p>0.999$), indicating durable treatment gains over the three-month interval (Table5).

Table 5. Bonferroni-adjusted pairwise comparisons across time points

Variable	Time	Mean Difference	SE	P
Assertiveness in social situations	Pretest and posttest	3.05	0.28	0.001
	Pretest and follow-up	3.19	0.30	0.001
	Posttest and follow-up	0.15	0.14	0.999
Expressing feelings	Pretest and posttest	2.95	0.52	0.001
	Pretest and follow-up	3.08	0.51	0.001
	Posttest and follow-up	0.13	0.13	0.999
Demanding personal rights	Pretest and posttest	2.91	0.25	0.001

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	Pretest and follow-up	3.02	0.26	0.001
	Posttest and follow-up	0.11	0.11	0.999
Assertiveness in specific situations	Pretest and posttest	4.36	0.58	0.001
	Pretest and follow-up	4.42	0.58	0.001
	Posttest and follow-up	0.08	0.06	0.999

Bonferroni-corrected post-hoc tests (Table 6) demonstrated that the ACT-based PT group significantly outperformed the SF-CST group on the total score and all four subscales at posttest ($p<0.001$). Mean differences ranged from 1.73 to 3.06 points, with the largest differential advantage in assertiveness in specific situations. These findings suggest that, although both active interventions yielded meaningful improvements over the control condition, ACT-based PT produced more pronounced enhancements in children's assertive behavior across varied interpersonal domains(Table6).

Table 6. Bonferroni post-hoc comparisons between SF-CST and ACT-based PT groups at posttest

Variable	Groups	Mean Difference	SE	P
Assertiveness in social situations	SF-CST - ACT-based PT	2.27	0.46	0.001
Expressing feelings	SF-CST - ACT-based PT	2.10	0.77	0.001
Demanding personal rights	SF-CST - ACT-based PT	1.73	0.36	0.001
Assertiveness in specific situations	SF-CST - ACT-based PT	3.06	0.84	0.001

Discussion

This randomized controlled trial offers the first direct head-to-head comparison of SF-CST and ACT-based PT in promoting assertiveness among children with anxiety disorders. Both active interventions significantly surpassed the wait-list control condition, yielding large effect sizes and durable improvements maintained at three-month follow-up. These results underscore the efficacy of brief, developmentally attuned, child-centered psychological approaches for mitigating social-emotional deficits prevalent in childhood anxiety.

The most salient clinical finding was the consistent superiority of ACT-based PT over SF-CST across all assertiveness domains—at both post-intervention and follow-up assessments. Participants in the ACT-based PT group displayed substantially greater gains in expressing feelings, asserting personal rights, and responding assertively in social and context-specific situations. This differential advantage aligns with accumulating evidence that third-wave cognitive-behavioral therapies, which prioritize psychological flexibility over mere symptom alleviation, may engender broader and more persistent functional gains in pediatric anxiety populations (Burley & McAloon, 2024).

The enhanced efficacy of ACT-based PT can be attributed to its core mechanisms. Children with anxiety often engage in suppression or avoidance of aversive internal experiences—such as fear of negative evaluation, physiological arousal, or anticipatory worry—which directly impedes assertive responding (Reisi Dastgerdi & Arefi, 2020). Through playful metaphors, experiential exercises, and mindfulness activities, ACT-based PT fosters the ability to observe these private events nonjudgmentally while pursuing value-congruent behavior (Malek Mohammadi et al., 2025). In the context of assertiveness, this enables children to tolerate anxiety-related thoughts and sensations yet still express needs, establish boundaries, or initiate interactions when such actions align with meaningful goals (e.g., building friendships, upholding fairness, or preserving self-respect). The robust between-group differences observed here suggest that targeting experiential avoidance—the putative functional maintainer of many anxiety-related interpersonal deficits—produces larger improvements than skill-

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acquisition strategies alone. These findings converge with prior trials showing that ACT-based interventions effectively diminish emotional avoidance, bolster emotion regulation, and promote prosocial behavior in children with anxiety or emotional dysregulation (Swain et al., 2015).

SF-CST likewise demonstrated the efficacy relative to the control group, affirming its value as a pragmatic, strengths-based intervention. By reframing assertiveness challenges as learnable skills, fostering collaboration among child, parents, and teachers, and leveraging positive reinforcement and celebration of progress, SF-CST rapidly enhances behavioral competence and self-efficacy (Furman, 2004). The significant pretest-to-posttest advancements in the SF-CST arm corroborate existing support for the Kids' Skills model in school and community contexts. Nevertheless, the comparatively modest magnitude of effects may stem from the approach's exclusive focus on overt skill building when underlying emotional barriers remain unaddressed.

Notably, treatment gains remained stable at three-month follow-up in both intervention conditions. For SF-CST, this durability likely reflects successful generalization of rehearsed skills to naturalistic settings, bolstered by caregiver and educator involvement. For ACT-based PT, persistence more plausibly derives from a transformed relationship with anxiety-eliciting cognitions and sensations, rendering assertive behavior less dependent on distress abatement. Although both methods supported enduring change, the greater magnitude and scope of benefits in the ACT-based PT group imply superior clinical utility—particularly for children whose assertiveness is predominantly constrained by experiential avoidance.

Several limitations warrant consideration. First, the sample was restricted to female students aged 9–12 from a single urban district in Tehran, limiting generalizability to boys, younger or older children, rural populations, or diverse cultural settings. Second, assertiveness was evaluated exclusively via parent report; incorporating multi-informant perspectives (e.g., teachers, peers) and direct behavioral observations would enhance ecological validity in future research. Third, although diagnostic confirmation occurred, anxiety severity and specific subtypes were not examined as potential moderators. Finally, the three-month follow-up, while sufficient for preliminary evaluation of stability, precludes inferences about longer-term outcomes; extensions to 12–24 months are recommended.

Conclusion

The present study establishes that both SF-CST and ACT-based PT are efficacious in substantially enhancing assertiveness among children with anxiety disorders, with gains well sustained three months post-intervention. Critically, ACT-based PT exhibited superior effectiveness across all assessed domains relative to SF-CST. These results suggest that interventions emphasizing psychological flexibility, emotional acceptance, and values-guided action—the foundational processes of ACT—offer a more potent means of surmounting the avoidance and passivity characteristic of childhood anxiety, conferring robust and lasting therapeutic benefits.

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Conflict of interest

The authors declared no conflicts of interest.

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Ethical considerations

The present study was approved by the Research Ethics Committee of Islamic Azad University, Sari Branch, Iran (Ethics Code: IR.IAU.SARI.REC.1403.428).

Code of Ethics

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Authors' contributions

B.H.: conceptualized the study, conducted the interventions, collected the data, and drafted the initial manuscript. H.A.G.: supervised the research, contributed to the study design, performed the statistical analyses, and critically revised the manuscript for important intellectual content. B.M.: provided methodological expertise, assisted in interpretation of the results, and reviewed the manuscript. All authors read and approved the final version of the manuscript.

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