



Comparing the Effectiveness of the Schema-based Parenting Training Program Integrated with Transactional Analysis (ST-TA) with Parenting Based on Acceptance and Commitment Therapy (ACT) on the Preschool Children's Behavioral Problems and Assertiveness

Leyla Jokar¹ , Felor Khayatan^{2*} , Mohsen Golparvar² 

1- Student in Psychology, Department of Psychology, Isf.C., Islamic Azad University, Isfahan, Iran

2- Department of Psychology, Isf.C., Islamic Azad University, Isfahan, Iran

*Corresponding author:

Felor Khayatan, Department of Psychology, Isf.C., Islamic Azad University, Isfahan, Iran
Tel: +989014790095
Email: f.khayatan@iau.ac.ir

Received: 29 November 2025

Accepted: 03 February 2026

ePublished: 15 May 2026



Abstract

Background and Objective: Parenting is one of the most critical and complex responsibilities in human life. The current research was conducted to investigate the effectiveness of schema-based parenting training program integrated with transactional analysis (ST-TA) with parenting based on acceptance and commitment therapy (ACT) on the preschool children's behavioral problems and assertiveness.

Materials and Methods: This experimental research was designed with a pre-test-post-test, two-month follow-up, and a control group. The statistical population included all the mothers of preschool children in Isfahan city in the winter of 2024, who have visited primary schools and counseling centers in Isfahan, Iran. In order to sample 54 mothers of children aged 3-6 years based on the entry and exit criteria, three groups were purposefully selected for the implementation of the semi-experimental design. The participants were randomly assigned into two experimental groups and one control group (18 people in each group). Questionnaires assessing behavioral problems and self-expression in preschool children were administered at the pre-test, post-test, and follow-up stages. The collected data were analyzed using repeated measures analysis of variance and Bonferroni's post-hoc test in SPSS software (version 22).

Results: The research findings indicated a significant effectiveness of the ST-TA intervention for mothers of preschool children in reducing their children's behavioral problems and increasing their assertiveness ($p=0.001$). Additionally, a significant difference was observed between the measurement steps in the two experimental and control groups ($p=0.001$). Regarding the comparison of two approaches, the ST-TA has increased children's assertiveness with stronger effects. However, regarding the reduction of behavioral problems, no significant difference was found between the two experimental groups ($p=0.01$).

Conclusions: These results have remained stable over time. Therefore, the use of these two parenting methods at treatment and educational centers for families and preschool children can be considered to improve behavior outcomes and assertiveness.

Keywords: Acceptance and Commitment Therapy, Assertiveness, Parenting, Problem Behavior, Schema Therapy, Transactional Analysis

Background

Parenting is among the most critical and complex responsibilities in human life. The quality of parenting profoundly influences children's emotional, cognitive, and social development, serving as both a protective and risk factor for mental health outcomes [1]. In today's rapidly changing social contexts, parents face increasing challenges ranging from economic pressures to psychological distress, that may compromise their ability to provide consistent emotional support and effective behavioral guidance [2]. When parenting

difficulties persist, children are at heightened risk for developing maladaptive behavioral and emotional patterns that disrupt their adjustment at home, school, and in peer relationships [3].

Among the most prevalent manifestations of disrupted parent-child relationships are behavioral problems in children. These difficulties encompass a spectrum of maladaptive behaviors that deviate from developmental and social norms, often categorized as externalizing behaviors (e.g., aggression, defiance, rule-breaking) and internalizing

behaviors (e.g., anxiety, withdrawal, depression) [4]. Both forms can emerge as expressions of unmet emotional needs, insecure attachment, and ineffective parental communication. In particular, studies suggest that maternal psychological distress, punitive discipline, and inconsistent emotional responsiveness are significant predictors of children's behavioral dysregulation [5].

Closely related to these behavioral difficulties is the concept of assertiveness, which constitutes an essential component of emotional and social competence. Assertiveness enables children to express needs, opinions, and emotions confidently while respecting others' rights [6]. Deficits in assertiveness may lead to internalizing behaviors such as social withdrawal, submissiveness, and anxiety, whereas excessive or poorly regulated assertiveness may manifest as aggression or defiance—forms of externalizing behavior [7]. Therefore, assertiveness and behavioral problems are not independent phenomena; rather, they reflect two ends of a shared continuum of self-expression and emotion regulation, both deeply rooted in early relational experiences and parenting practices [8]. From a family-systems perspective, children's difficulties often mirror the unprocessed emotional patterns of parents. Research consistently highlights that maternal cognitive schemas, emotional regulation capacities, and communication styles profoundly shape children's behavioral and emotional adjustment [9]. Accordingly, interventions targeting mothers' cognitive and emotional processes have emerged as effective strategies for indirectly improving children's functioning.

In this regard, Schema Therapy (ST) offers a comprehensive framework for addressing the deep-rooted cognitive-emotional structures that influence parenting behaviors. By modifying early maladaptive schemas, ST promotes greater emotional awareness, self-regulation, and empathy in parents [10]. Empirical studies demonstrate its positive effects on parental resilience [11], self-esteem [12], and children's social competence and assertiveness [13]. However, few studies have examined its direct or mediated impact on children's behavioral problems, highlighting a significant research gap.

Similarly, Transactional Analysis (TA) provides an accessible and relationally focused approach that helps parents recognize and modify dysfunctional interactional patterns through the lens of ego states (Parent, Adult, Child) [14]. Transactional Analysis-based parenting training fosters adult-centered communication, reduces critical or submissive exchanges, and enhances positive emotional

attunement between parent and child [15]. Despite its practicality, TA alone may not sufficiently address the deeper cognitive area where ST offers complementary depth.

On the other hand, Acceptance and Commitment Therapy (ACT) as a third-wave behavioral approach, focuses on enhancing psychological flexibility through mindfulness and values-based action [16]. Acceptance and Commitment Therapy-based parenting programs have been shown to improve parent-child relationships and promote children's self-esteem [17]. Nonetheless, the literature still lacks comparative evidence regarding the relative efficacy of ACT versus integrated cognitive-relational models, such as ST combined with TA, particularly in addressing children's behavioral problems and assertiveness deficits simultaneously.

Given the interrelated nature of children's behavioral and assertiveness difficulties and their strong linkage to maternal emotional and cognitive processes, there is a clear need for integrative parenting interventions that address both the deep cognitive structures (schemas) and observable relational dynamics (transactions) of parenting [18]. The integration of ST and TA offers such a dual-level framework: while ST helps mothers identify and modify maladaptive internal schemas, TA provides concrete tools for transforming daily interactions with their children. Treatment integrity was carefully considered to ensure the internal validity and credibility of the intervention protocols. Both parenting programs were delivered according to manualized and structured session plans, developed based on established theoretical frameworks and prior empirical studies. The integrated ST-TA program followed a predefined sequence of sessions targeting maladaptive schemas, emotional regulation, and parent-child transactional patterns, while the ACT-based parenting program adhered to core ACT processes, including acceptance, cognitive defusion, mindfulness, values clarification, and committed action. Strict adherence to session contents and objectives was monitored throughout the intervention period, thereby minimizing therapist drift and ensuring consistency across participants.

The interventions were conducted by a licensed clinical psychologist with formal academic training and supervised clinical experience in ST, TA, and ACT. The therapist had completed certified workshops in ST and ACT and had prior experience implementing parenting-based psychological interventions. To further support treatment fidelity, regular supervision sessions were held, during which session content, therapeutic

techniques, and participant engagement were reviewed. The validity of the intervention sessions was assessed through expert review and fidelity checklists. A panel of experienced clinical psychologists with expertise in parenting interventions and cognitive-behavioral therapies evaluated the session protocols for theoretical coherence, clinical relevance, and alignment with intervention goals. In addition, random session checklists were completed to confirm adherence to core components of each treatment model, supporting the methodological rigor of the study.

Therefore, the present study aims to compare the effectiveness of an integrated ST-TA and an ACT-based parenting program in reducing behavioral problems and enhancing assertiveness in preschool children. Based on the reviewed literature, children's behavioral problems and low assertiveness both reflect underlying difficulties in emotion regulation and maladaptive parental interaction patterns, particularly those of mothers [19]. These two constructs can be viewed as distinct manifestations of a shared deficit in emotional self-regulation and self-expression. Although numerous studies have examined the effectiveness of cognitive or behavioral parenting interventions, there is still limited evidence on integrative approaches that simultaneously target both cognitive restructuring and parent-child relational dynamics. The necessity of the present research lies in addressing a critical gap in the parenting intervention literature. Although numerous studies have examined the effectiveness of single-approach parenting programs—particularly behavioral or mindfulness-based models—there is limited empirical evidence comparing integrative cognitive-relational interventions with third-wave behavioral approaches, especially in relation to children's behavioral problems and assertiveness as interrelated outcomes. Preschool children represent a particularly sensitive developmental period in which early interventions may prevent the consolidation of maladaptive emotional and behavioral patterns. The innovative aspect of this study is twofold. First, it introduces and empirically evaluates an integrated ST-TA parenting intervention, which simultaneously targets deep cognitive-emotional structures (early maladaptive schemas) and observable interpersonal communication patterns (parent-child transactions). Second, the study provides a direct comparative analysis between this integrative model and an ACT-based parenting program, thereby contributing to evidence-based decision-making regarding the relative effectiveness of different theoretical approaches in parenting interventions.

Importantly, the integration of ST and TA was explicitly conceptualized and systematically implemented, rather than implicitly assumed. Schema Therapy was employed to help mothers identify and modify maladaptive schemas and emotional regulation difficulties, while TA offered concrete, practical tools for recognizing dysfunctional ego-state interactions and promoting Adult-to-Adult communication in daily parenting situations. This dual-level integration represents a novel contribution by bridging intrapsychic change with interpersonal behavioral modification—an aspect that is frequently underrepresented in parenting research. Therefore, the present study aims to compare the effectiveness of ST-TA and ACT-based parenting training in reducing children's behavioral problems and enhancing their assertiveness. The research questions are as follows: (1) Does the ST-TA intervention more effectively reduce children's behavioral problems compared with ACT-based training? (2) Does it more effectively increase children's assertiveness? (3) Is there a significant relationship between reductions in behavioral problems and improvements in assertiveness? and (4) Do changes in mothers' cognitive-emotional patterns and communication styles mediate these effects?

Materials and Methods

Research Design

The present study employed a quasi-experimental three-group design with a pre-test, post-test, and two-month follow-up. The groups included: (1) schema-based parenting training integrated with transactional analysis (ST-TA), (2) parenting training based on Acceptance and Commitment Therapy (ACT), and (3) a control group. The study population comprised all mothers of preschool-aged children in Isfahan, Iran, who had referred to elementary schools and counseling centers in the city during the winter of 2024. Using purposive sampling based on inclusion criteria, 54 participants were initially selected. Then, they were randomly assigned to the mentioned three groups based on standard sampling recommendations.

Inclusion criteria for participation included having a child between the ages of 3 and 6 years, absence of concurrent medical or psychological treatment for the child or the mother, and a minimum educational level of a high school diploma. Exclusion criteria were defined as failure to meet participation requirements, including missing more than two parenting intervention sessions or failure to complete essential intervention-related tasks and assessments, which could compromise the validity of the intervention exposure and data integrity.

Ethical considerations were fully observed throughout the study, including obtaining an official ethics approval code, ensuring participant confidentiality, using collected data solely for research purposes, safeguarding participants' right to withdraw from the study at any stage without penalty, and providing full debriefing upon request. In addition, to meet ethical standards of fairness, the control group received the parenting training after completion of the intervention phase for the two experimental groups. Ethical approval for the study was obtained from the Institutional Review Board for Biomedical Research Ethics of Islamic Azad University [IR.IAU.KHUISF.REC.1400.332].

Measures

Behavior Problems Scale (BPS): To assess behavioral problems, the Rutter Children's Behavior Questionnaire (1981) was employed using both the parent and teacher forms. This 30-item scale uses a three-point Likert format: "Does not apply," "Applies somewhat," and "Certainly applies," scored 0, 1, and 2, respectively. The total possible score ranges from 0 to 60. Rutter, Skuse, and Smith (2011) reported high reliability coefficients, including test-retest and Cronbach's alpha values. In Iran, this questionnaire was adapted and standardized by Yousefi (1998) based on a sample of 1,600 schoolchildren (ages 6–11) in Shiraz, Iran. It showed strong correlations with the Goodenough Draw-a-Person Test, Bender Gestalt Test, school grades, and teacher evaluations. In the present study, the Cronbach's alpha coefficient was calculated at 0.94.

Assertiveness Scale (AS): To evaluate assertiveness in preschool-aged children, the 32-item Children's Action Tendency Scale (CATS) developed by Deluty (1979) was used. This scale measures three domains: submissiveness (8 items, items 1–8), assertiveness (9 items, items 9–17), and aggressive assertiveness (15 items, items 18–32). Items are rated by parents (typically mothers) based on their observations of the child using a five-point Likert scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, and 5 = Always. Scores for each subscale are obtained by summing the relevant items: scores range from 8 to 40 for submissiveness, 9 to 45 for assertiveness, and 15 to 75 for aggressive assertiveness. Higher scores indicate greater presence of the respective trait. Deluty (1979) reported acceptable construct validity through exploratory factor analysis using varimax rotation, confirming the three-factor structure of the scale. Gender differences also supported discriminant validity, with boys scoring significantly higher in

aggressive assertiveness. The scale has demonstrated developmental sensitivity, with both assertiveness and aggressive assertiveness increasing with age. Cronbach's alpha values ranged from 0.39 to 0.88 (Deluty, 1989). For the present study, a two-stage process of translation and content adaptation was followed, including review by field experts. The final version of the scale showed excellent internal consistency, with a Cronbach's alpha of 0.97.

Procedure

After random allocation, participants in all three groups completed the pre-test assessments using the relevant questionnaires. The two intervention groups then participated in parenting training sessions at a psychological clinic. Upon completion of the training, all three groups completed the post-test assessments. The ST-TA was delivered over ten sessions, each lasting 90–120 min. The ACT-based parenting intervention consisted of ten 60-minute sessions. Both interventions were conducted over a period of four consecutive weeks by licensed therapists with several years of experience in their respective approaches. The control group received no intervention until after the completion of the experimental programs.

Interventions

The Schema-based parenting training program integrated with Transactional Analysis was developed for the first time in this study and was used after undergoing initial content, scientific, and expert validations. Development of the program involved in-depth interviews and thematic analysis of relevant literature using Attride-Stirling's thematic network approach. Basic and organizing themes were extracted to construct the framework. The Content Validity Ratio calculated by three independent coders was measured at 1.0. Parenting strategies for each theme were extracted through conventional content analysis and integrated within a ST framework using input from a panel of six psychologists with over a decade of clinical experience.

After preliminary development, the intervention package was reviewed by six child psychology experts. Following their suggestions, a final inter-rater agreement coefficient of 0.95 was achieved. The validated intervention was then pilot-tested on a sample of six mothers, confirming preliminary efficacy. The ACT-based parenting group received an already validated training package, previously standardized in Iranian populations. Summaries of the session content for both interventions are presented in tables 1 and 2.

Table 1. Summary of the Schema-based Parenting Training Program Integrated with Transactional Analysis (ST-TA)

Session	Summary Description
1st	Introduction of participants to one another and establishment of group rules; administration of pretest measures related to the study's dependent variables; assessment of the child's most critical unmet needs during early childhood; training parents on how to teach thinking skills to children; instruction on recognizing life scripts and schema traps in children; assignment of home practice.
2nd	Review of previous session's home practice; instruction on fostering creative thinking in children; training in critical thinking; guidance on understanding the child's personality and related contaminations; assignment of home practice.
3rd	Review of home practice; instruction on creating a sense of safety in children; teaching self-regulation skills; training children to identify and express emotions effectively; assignment of home practice.
4th	Review of home practice; training in building self-esteem; fostering independence; promoting cognitive and emotional flexibility in children; assignment of home practice.
5th	Review of home practice; instruction on teaching empathy to children; promoting a sense of responsibility; cultivating affectionate behavior in the mother-child relationship; assignment of home practice.
6th	Review of home practice; teaching respectful behavior; developing assertiveness in children; breaking maladaptive interaction patterns between mother and child; assignment of home practice.
7th	Review of home practice; instruction in choice-making skills; training in decision-making; developing children's problem-solving abilities; assignment of home practice.
8th	Review of home practice; training on personal boundaries; fostering appreciation of individual differences; developing effective communication skills; assignment of home practice.
9th	Review of home practice; addressing child's boredom and inattentiveness; teaching patience and tolerance; assignment of home practice.
10th	Review of home practice; guidance on improving sleep hygiene; encouraging physical activity and exercise; summarizing and concluding the training sessions.

Table 2. Summary of the Acceptance and Commitment Therapy (ACT)-Based Parenting Program [20]

Session	Summary Description
1st	Introduction and acquaintance among group members and educational content; establishing a participatory and trust-based atmosphere in the group. Explanation of group rules and objectives focused on parenting skill training and strengthening the parent-child relationship. Pretest administration. Conceptualization of parenting from the ACT perspective; highlighting the role of parents' thoughts and emotions in applying parenting skills; discussing the importance of mindful parenting; brief discussion of developmental challenges and common behavioral problems in children; emphasis on the parental role in managing such behaviors.
2nd	Recap of the previous session. Introduction to parenting values: impulsive parenting vs. value-based parenting. Differentiating values from goals; values as actions. Learning to live according to values.
3rd	Recap of the previous session. Identifying behavioral antecedents and consequences; discussing the role of parenting strategies in altering child behavior or parental experience. Differentiating emotion regulation from effective behavior management. Introduction to the concepts of control and experiential avoidance in parenting.
4th	Recap of the previous session. Introduction to mindfulness and mindful parenting; understanding the child through mindful awareness. Learning mindfulness skills to enhance the parent-child relationship.
5th	Recap of the previous session. Practical application of child support skills. Commitment to parenting values and engaged action in relation to the child. Introduction to components of committed action. Understanding coordinated parenting. Cultivating unconditional commitment to supporting the child.
6th	Recap of the previous session. Conceptualization of a healthy relationship with the child and its characteristics. Teaching strategies to prepare children for success. Teaching antecedent control strategies to set the stage for positive behavior. Instruction in effective command-giving techniques.
7th	Recap of the previous session. Teaching reinforcement strategies. Effective parent-child communication techniques. Reframing unrealistic expectations. Aligning parental expectations with the child's abilities. Using conditional statements and highlighting the importance of consistency and flexibility in parenting.
8th	Recap of the previous session. Teaching ACT-based parenting strategies for common behavioral problems. Managing temper tantrums and defiance. Identifying behavioral triggers (environmental conditions) and consequences. Teaching strategies for gaining child compliance.
9th	Recap of the previous session. Continuation of ACT-based parenting strategies for behavioral challenges. Managing aggression. Introducing token economy and time-out strategies.
10th	Recap of discussed content. Review of parenting skills and parental feedback. Clarification of ambiguities and overall program summary. Posttest administration.

Statistical Analysis

For the statistical analysis of data, descriptive statistics (mean and standard deviation) were applied. For inferential statistics, the normality of data distribution was examined using the Shapiro-Wilk test, homogeneity of error variances was checked using Levene's test, and the assumption of equality of variance-covariance matrices was assessed via Box's M test. Subsequently, Repeated Measures ANOVA and Bonferroni post-hoc test were employed. Data were analyzed using SPSS software (version 22).

Results

At the preliminary stage of data analysis, the three study groups were compared with respect to demographic (biographical) variables, including the

mothers' and their children's ages, the mothers' educational level, and number of children. Chi-square tests of independence were conducted to examine group differences across these categorical variables. The results showed that none of the Chi-square tests were statistically significant ($p > 0.05$), indicating that there were no significant differences among the groups on any demographic characteristic and confirming baseline homogeneity. Descriptive analyses indicated that most mothers in the experimental groups were within the 28-35 years of age, while the majority of children across all groups were 5 or 6 years old. With regard to the mothers' educational level, most participants held postsecondary or university degrees, and in terms of family size, the majority of mothers had one or two children. Taken together, both the inferential (Chi-

square) and descriptive findings demonstrated that the three groups were demographically comparable prior to the intervention, thereby supporting the internal validity of subsequent analyses examining intervention effects.

The results of this analysis showed no statistically significant differences among the groups regarding

these demographic characteristics. Table 4 presents the means and standard deviations of behavioral problems and assertiveness across the three study groups (ST-TA, ACT-Based Parenting, and Control Group) in three-time phases: pretest, posttest, and follow-up.

Table 3. Mean and Standard Deviation of Behavioral Problems and Assertiveness Scores in the Three Research Groups at Pretest, Posttest, and Follow-up Stages

Scale	Time	Experimental Group (ST + TA)		Experimental Group (ACT)		Control Group	
		Mean	SD	Mean	SD	Mean	SD
Behavioral Problems	Pretest	24.26	2.63	24.26	2.65	24.60	1.95
	Posttest	17.66	2.71	20.73	2.86	25.26	1.83
	Follow-up	19.20	2.90	22.26	3.12	25.40	1.88
Assertiveness	Pretest	89.60	6.63	87.80	6.44	87.86	4.59
	Posttest	95.33	6.41	92.26	6.54	87.13	5.75
	Follow-up	93.53	7.22	90.93	6.43	86.00	4.84

Table 4. Results of Repeated Measures ANOVA for Children’s Behavioral Problems and Assertiveness

Variable	Source of Effect		Sum of Squares	df	Mean Square	F	p-value	Partial Eta Squared	Power
Behavioral Problems	Within-Subjects	Time	231.881	1.365	169.865	258.101	.001	.867	1.000
		Time × Group	225.719	1.365	82.675	125.621	.001	.854	1.000
	Between-Subjects	Group	502.281	2	251.141	13.491	.001	.391	.997
		Error	781.867	42	106.665	-	-	-	-
Assertiveness	Within-Subjects	Time	224.770	1.552	144.796	32.498	.001	.436	1.000
		Time × Group	217.407	3.105	70.026	15.717	.001	.428	1.000
	Between-Subjects	Group	768.059	2	384.030	3.600	.036	.146	.635
		Error	4479.911	42	106.665	-	-	-	-

The analysis of the means for behavioral problems and assertiveness indicated that both experimental groups exhibited greater changes in posttest and follow-up scores compared to the control group (Table 4). Prior to conducting the repeated measures ANOVA, the statistical assumptions of this test were assessed. The Shapiro–Wilk test results confirmed the normal distribution of the behavioral problems and assertiveness variables ($p \geq 0.05$). The Levene’s test results also indicated equality of variances across the study groups for both dependent variables ($p \geq 0.05$). In addition, Mauchly’s test results for both variables indicated the equality of the variance–covariance matrices, and the test of the interaction between group membership and pretest scores confirmed the homogeneity of regression slopes ($p \geq 0.05$).

Based on the assumption tests presented previously, the results of the repeated measures ANOVA revealed that: The main effect of time and the interaction effect between time and group membership were statistically significant ($p < 0.001$). The partial eta squared values indicate that 86% of the variance in behavioral problems was attributable

to the effect of time, and 85% to the interaction of time and group. Both effects demonstrated maximum statistical power (1.000).

Similarly, the main effect of time and the interaction effect between time and group membership were significant ($p < 0.001$). The effect sizes show that 43% of the variance in assertiveness was explained by time and 42% by the interaction of time and group, with statistical power again at 1.000, indicating a very strong ability to detect true effects. The between-group main effect was also significant for behavioral problems ($p = 0.001$, $\eta^2 = 0.391$), showing a large effect size. For assertiveness, the between-group effect was significant as well ($p = 0.036$), although with a more modest effect size ($\eta^2 = 0.146$) and a statistical power of .635, suggesting a medium-strength effect.

These findings suggest that the experimental interventions (ST-TA and ACT-based parenting) had significant and lasting impacts on reducing behavioral problems and enhancing assertiveness in children, and these effects differed across time and between the groups.

Table 5. Bonferroni Post-Hoc Test Results for Comparison of the Research Groups

Variable	Source	Reference Group	Comparison Group	Mean Difference	p-value
Behavioral Problems	Time	Pre-test	Post-test	*3.156	.001
		Pre-test	Follow-up	*2.089	.001
		Post-test	Follow-up	*-1.067	.001
	Group	ST+TA	ACT-based Parenting	-2.044	.090
		ST+TA	Control	*-4.711	.001
		ST+TA	Control	*-4.711	.001

	ACT-based Parenting	Control	*-2.667	.016
	Pre-test	Post-test	*-2.578	.001
	Time	Follow-up	*-0.578	.012
	Post-test	Follow-up	*2.000	.001
Assertiveness	ST+TA	ACT-based Parenting	2.489	.058
	Group	Control	*5.822	.032
	ACT-based Parenting	Control	*3.333	.040

The results of the Bonferroni post-hoc test indicated that there are significant differences in behavioral problems between both experimental groups (ST-TA and ACT-based Parenting), and the control group ($p < 0.01$). This suggests that both parenting interventions effectively reduced behavioral problems among preschool children. However, the difference in mean scores between the two experimental groups was not statistically significant ($p = 0.090$), implying that both parenting programs were equally effective in reducing behavioral problems.

In terms of assertiveness, the results revealed significant differences between both experimental groups and the control group ($p < 0.05$). Notably, the newly developed ST-TA demonstrated a significantly stronger effectiveness compared to the ACT-based parenting intervention ($p < 0.05$), as indicated by the larger mean difference between this group and the control group. These findings underscore the superior impact of the ST-TA, particularly in enhancing children's assertiveness, while also affirming the general effectiveness of both experimental approaches in reducing behavioral problems.

Discussion

The present study aimed to compare the effectiveness of ST-TA and ACT-based Parenting Training in reducing children's behavioral problems and enhancing their assertiveness. The findings indicated that while both interventions effectively reduced behavioral problems, the ST-TA approach was more effective in improving children's assertiveness. These findings are discussed in relation to the study's research questions, with reference to both consistent and inconsistent findings in the existing literature. These findings are interpreted based on the study's research questions and are grounded in relevant theoretical frameworks and empirical evidence.

First, regarding the reduction of children's behavioral problems, the results obtained showed that both ST-TA and ACT-based parenting interventions led to significant improvements, with no statistically significant difference between the two approaches. This finding is consistent with previous studies demonstrating that both schema-oriented and third-wave behavioral parenting interventions effectively reduce child externalizing

and internalizing behaviors through improvements in parental emotional regulation and responsiveness [20-22]. From a theoretical perspective, ACT enhances parents' ability to tolerate distress and disengage from reactive thoughts, thereby reducing coercive or inconsistent discipline. Similarly, ST and TA target maladaptive cognitive-emotional patterns and dysfunctional interactional styles, enabling parents to respond more thoughtfully rather than automatically. Although some studies have reported stronger effects for schema-based interventions, particularly in clinical or high-risk populations, the absence of differential effects in the present study may be attributed to the nonclinical preschool sample and the shared emphasis of both interventions on emotional attunement and supportive parenting, which are core mechanisms underlying behavioral regulation in early childhood. Second, regarding children's assertiveness, the results indicated that ST-TA was significantly more effective than ACT-based parenting training. This finding is theoretically consistent with developmental and interpersonal models that emphasize the role of explicit communication modeling, boundary setting, and reciprocal interaction in the development of assertiveness. Schema Therapy and TA directly address emotional expression, interpersonal roles, and Adult-to-Adult communication, which are foundational components of assertive behavior. In contrast, although ACT-based parenting has been shown to enhance children's emotional well-being indirectly through increased parental psychological flexibility, existing research suggests that ACT may exert more generalized effects on emotional acceptance rather than specifically targeting assertive communication skills unless these are explicitly incorporated into the intervention [22]. While some studies report comparable outcomes for ACT when assertiveness is directly trained, the ST-TA program in the present study included structured, developmentally appropriate interpersonal exercises, such as role-play, storytelling, and guided dialogue, which directly facilitated children's assertive self-expression. This theoretically grounded focus on relational learning likely accounts for the superior outcomes observed in the ST-TA group.

Thirdly, the significant association between reductions in behavioral problems and improvements in assertiveness supports integrative

developmental models proposing that these constructs reflect shared underlying capacities, particularly emotion regulation, self-efficacy, and interpersonal security. Consistent with prior research, children who are better able to express their needs and emotions assertively tend to exhibit fewer oppositional, aggressive, or avoidant behaviors. Conversely, deficits in assertiveness have been linked to both internalizing and externalizing difficulties. Although some studies suggest that assertiveness and behavioral regulation can develop independently under certain contextual conditions, the present findings are consistent with relational and attachment-based theories, which posit that emotionally responsive parenting fosters both behavioral regulation and confident self-expression. As mothers adopted more consistent, autonomy-supportive, and emotionally attuned communication styles, children experienced greater psychological safety, enabling improvements in both domains.

Collectively, these findings underscore the value of parenting interventions that integrate cognitive restructuring and relational awareness, as exemplified by the ST-TA model. By simultaneously addressing maternal schemas, interactional patterns, and emotion-focused parenting skills, ST-TA strengthens the mother-child relationship, supports behavioral adjustment, and promotes adaptive self-expression in early childhood. From a broader clinical perspective, the comparable effectiveness of ST-TA and ACT in reducing behavioral problems highlights their shared therapeutic mechanisms, including mindfulness, present-moment awareness, and empathic responsiveness. However, the superior impact of ST-TA on assertiveness suggests that interventions explicitly targeting interpersonal communication and relational dynamics may be particularly beneficial for fostering children's social competence.

In conclusion, the present findings provide theory-driven and empirically supported evidence for the effectiveness of ST-TA as a comprehensive intervention that not only reduces children's behavioral problems but also enhances assertiveness. These results highlight the importance of empowering parents through interventions that combine cognitive insight, emotional awareness, and relational competence, thereby promoting healthier developmental trajectories during early childhood.

Despite the observed significant improvements, this study has several limitations that suggest directions for future research. First, the sample included only mothers of preschool-aged children, which limits the generalizability of the findings;

future studies should examine whether similar effects are observed among fathers, other caregivers, or older children. Second, the outcomes were assessed solely via maternal self-report, which may have introduced reporting bias. Multi-informant assessments and observational measures are recommended to verify whether improvements in children's behavioral problems and assertiveness are consistently observed across contexts. Third, while the study demonstrated short-term gains, it did not assess whether these benefits were maintained over time. Longitudinal research is needed to determine the durability of improvements, particularly the superior gains in assertiveness observed in the ST-TA group. Finally, the observed association between reductions in behavioral problems and increases in assertiveness suggests that underlying capacities such as emotion regulation and self-efficacy may mediate intervention effects. Future studies could expand outcome measures to include social self-efficacy, emotional intelligence, and regulatory skills to clarify these mechanisms. Addressing these points will strengthen the evidence base and provide a clearer understanding of the effectiveness and mechanisms of ST-TA and ACT-based parenting interventions.

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.

Ethical Considerations

The studies involving human participants were reviewed and approved by Ethics Committee of the Islamic Azad University of Isfahan. The participants provided their written informed consent to participate in this study IR.IAU.KHUISF.REC.1400.332.

Author Contributions

L. J., F. Kh., & M. G. contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

Funding

The authors received no support from any organization for the submitted work.

Conflicts 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.

References

- Ghiasi M, Yadollahi S, Izadi S, Sadri M, Mohammadi F, Jafarzade JZ, et al. The effect of parenting styles on early maladaptive schemas with the mediating role of overcompensation and avoidance coping styles. *Shenakht J Psychol Psychiatry*. 2024;11(2):63-77. [Link]
- Torbati S, Tajik Esmaeeli S, Khosravi N. Qualitative study of adolescent sexual education and its underlying factors with emphasis on interpersonal relationships with parents (case study: parents in Tehran). *Med J Mashhad Univ Med Sci*. 2020;63. [DOI: 10.22038/mjms.2020.18375]
- Gustavsen GW, Nayga Jr RM, Wu X. Effects of parental divorce on teenage children's risk behaviors: incidence and persistence. *J Family Economic Issues*. 2016;37(3):474-87. [DOI: 10.1007/s10834-015-9460-5]
- Chen Y, Xie R, Wang X, Zhang R, Li W, Ding W. The relationship between parental conflict and internalizing and externalizing problem behavior among primary school children: the mediating role of harsh discipline and peer attachment. *Current Psychol*. 2025;44(20):16820-30. [DOI: 10.1007/s12144-025-08256-2]
- Zhang X, Zhou Z. When parental care fails: the cascading effects of child neglect on adolescent maladjustment. *Child Fam Social Work*. 2025. [DOI: 10.1111/cfs.70057]
- Ito D, Okabe Y, Nobushige A, Saito S, Takahashi Y. Functional assertiveness with acceptance and commitment therapy for employees returning to work: a preliminary investigation. *Front Psychol*. 2025;16:1415212. [DOI: 10.3389/fpsyg.2025.1415212.] [PMID] [PMCID]
- Kumari A, Tiwari M. The role of assertiveness, family dynamics and cohesion in women-led dairy farm performance. *J Fam Business Manage*. 2025;15(5):1336-55. [DOI: 10.1108/JFBM-01-2025-0022]
- Guo Z, Sameen DE, Al-Khaz'aly H, Jin L. The linear and curvilinear relationships between assertiveness and mental health: a cross-cultural perspective. *Counsell Psychol Quarterly*. 2025;38(4):88-108. [DOI: 10.1080/09515070.2024.2354271]
- Hajbabay Ravandi A, Tajali P, Ghanarippanah A, Shahriari Ahmadi M. The effectiveness of a positive parenting program on general health and marital adjustment of mothers of children with ADHD. *Counsel psychother culture*. 2022;13(51):207-30. [DOI: 10.22054/qccpc.2022.65898.2881]
- Mohammadian Amir A, Hassanzadeh R, Heydari S. Comparing the effectiveness of treatment based on acceptance and commitment and schema therapy on quality of life and general compliance in bese women. *Avicenna J Neuropsychophysiol*. 2024;11(2):44-9. [DOI: 10.32592/ajnpp.2024.11.2.101]
- Abbasi E, Khayatan F, Farhadi H. THE effectiveness of schema therapy on resilience and its components in nulliparous pregnant women with tokophobia in Isfahan City. a new approach to children's education quarterly. 2024;6(2):122-32. [DOI: 10.22034/naes.2024.461724.1443]
- Kenari E, Hamzehpoor Haghighi T. Prediction of sexual assertiveness based on childhood trauma with the mediation of sexual self-esteem in married woman in Anzali City. *JHPM*. 2025;14(1):1-3. [DOI: 10.22034/JHPM.14.1.1]
- Hadian S, Khayatan F, Gol Parvar M. Investigating the effectiveness of emotional therapy schema on hidden anger and self-expression of women victims of domestic violence. *J Res Behav Sci*. 2024;22(1):90-103. [DOI: 10.48305/22.1.90]
- Vos J, van Rijn B. The evidence-based conceptual model of transactional analysis: a focused review of the research literature. *Transactional Analysis J*. 2021;51(2):160-201. [DOI: 10.1080/03621537.2021.1904364]
- Eghbali M, Mousavi SV, Hakima F. The effectiveness of transactional analysis on mothers' parenting styles. *Iran J Family Psychol*. 2021;3(2):17-26. [Link]
- Thompson EM, Destree L, Albertella L, Fontenelle LF. Internet-based acceptance and commitment therapy: a transdiagnostic systematic review and meta-analysis for mental health outcomes. *Behav Ther*. 2021;52(2):492-507. [DOI: 10.1016/j.beth.2020.07.002.] [PMID]
- Qashqai M, Emadian SO, Ghanadzadegan H. Comparing the effectiveness of schema-based parenting training with compassion-based parenting training on mothers' parenting self-efficacy, self-concept, and parental acceptance of children with internalizing problems. *Med Surgical Nurs J*. 2024;12(3):e146992. [DOI: 10.5812/msnj-146992]
- Fazel Hamedani N, Ghorban Jahromi R. Effectiveness of group therapy using transactional analysis (ta) on cognitive emotion regulation and marital intimacy of betrayed women. *J Psychol Sci*. 2018;17(70):745-53. [Link]
- Asiegbu M. Understanding the impact of parent-child relationships on emotion regulation: a comprehensive review. *NIJCIAM*. 2024;4(1):25-31. [DOI: 10.59298/NIJCIAM/2024/4.1.253113]
- Azimifar S, Jazayeri RS, Fatehizade MS, Abedi A. The comparing the effects of parent management training and acceptance and commitment based parenting training on mother-child relationship among mothers who have children with externalizing behavior problems. *Family Counseling Psychother*. 2018;7(2):99-122. [DOI: 10.22034/fcp.2018.57613]
- Maughan AL, Lunsby Y, Lake J, Mills JS, Fung K, Steel L, et al. Parent, child, and family outcomes following acceptance and commitment therapy for parents of autistic children: a randomized controlled trial. *Autism*. 2024;28(2):367-80. [DOI: 10.1177/13623613231172241.] [PMID] [PMCID]
- Karimi Moghadam H, Ghasemzadeh S, Arjmandnia AA. The effectiveness of a schema-based parenting program on adolescents with behavioral problems' resilience. *J Appl Psychol Res*. 2023;14(2):217-29. [DOI: 10.22059/japr.2023.343884.644286]