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Comparing the Effectiveness of Emotional Disclosure Through Drawing and Family-Based Floortime Play Therapy on Emotion Regulation Difficulties and Internalizing and Externalizing Symptoms in Children with Anxiety Symptoms

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ABSTRACT

Objective: This study aimed to compare the effectiveness of emotional disclosure through drawing and family-based Floortime play therapy in improving emotion regulation and reducing internalizing and externalizing symptoms in children with anxiety symptoms.

Methods: A quasi-experimental pretest–posttest design with a control group and follow-up was employed. The participants consisted of 45 children aged 8–10 years with anxiety symptoms in Qaen, South Khorasan Province, who were selected based on elevated scores on the Spence Children's Anxiety Scale–Parent version. Participants were randomly assigned to one of three groups: emotional disclosure through drawing, family-based Floortime play therapy, or a control group (n = 15 per group). Both interventions were delivered in eight 45-minute sessions over four weeks. Emotion regulation difficulties and behavioral symptoms were assessed using the Difficulties in Emotion Regulation Scale for Children and the Child Behavior Checklist. Data were analyzed using analysis of covariance (ANCOVA) and Bonferroni post hoc tests.

Results: The results revealed a significant effect of group on emotion regulation difficulties, as well as internalizing and externalizing symptoms. Both intervention groups demonstrated significant improvements in emotion regulation and significant reductions in internalizing and externalizing symptoms compared to the control group at posttest and follow-up. No significant differences were observed between the emotional disclosure and Floortime play therapy groups. The beneficial effects of both interventions were maintained at follow-up.

Conclusions: Emotional disclosure through drawing and family-based Floortime play therapy were both effective in enhancing emotion regulation and reducing anxiety-related internalizing and externalizing symptoms in children.

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Introduction

Childhood is a sensitive period for the development of emotional and behavioral competencies that underpin mental health and adaptive functioning. One of the most important challenges faced by children, especially those who present with anxiety symptoms, is difficulty in regulating emotions. Emotion regulation difficulties are consistently associated with increased vulnerability to a wide range of psychopathological outcomes, including anxiety, depression, and externalizing behavioral problems (Zitzmann et al., 2024). In particular, children with impaired ability to recognize, express, and modulate emotions may struggle to form stable relationships, engage effectively in academic settings, and cope with environmental stressors (Kwon et al., 2017; Rajabi & Abbasi, 2011). These regulatory deficits can lead to the manifestation of internalizing problems, such as withdrawal and somatic complaints, and externalizing difficulties, such as aggression and rule-breaking behavior (Pouladi et al., 2022). As such, identifying effective interventions to enhance emotional regulation and reduce behavioral symptoms is a key priority in contemporary child psychology and education (Masipour, 2025).

Anxiety disorders and subclinical anxiety symptoms are highly prevalent in childhood and early adolescence and frequently co-occur with emotion dysregulation (Dragomir, 2024). Anxiety is not merely a transient developmental challenge but can predict long-term maladjustment if left untreated. Children experiencing persistent worry, avoidance, and somatic tension are at greater risk of impaired social functioning and academic underachievement (Bae & Choi, 2023; Kwon et al., 2017). Moreover, family relational patterns, including parental stress and maladaptive emotional expression, may exacerbate these vulnerabilities (Hadiyan et al., 2023). Therefore, modern therapeutic approaches emphasize family involvement and experiential methods that engage children in a developmentally appropriate, emotionally safe way (Abazari et al., 2017; Asmeri Noubari et al., 2023).

One promising approach for addressing emotional and behavioral dysregulation is Floortime play therapy, also known as the Developmental, Individual-differences, Relationship-based (DIR) model. Originally designed for children with autism spectrum disorders, Floortime focuses on strengthening parent–child emotional connections, scaffolding self-regulation,

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and promoting flexible social engagement through play (Şengül-Erdem, 2021). Research shows that adapting Floortime to various developmental and emotional challenges beyond autism yields positive results. For instance, Floortime interventions have improved social skills and communication in neurodiverse populations (Abazari et al., 2017; Bayat, 2016), enhanced executive functions and cognitive emotion regulation in children with ADHD (Roghani et al., 2022), and increased social adaptability in children with emotional and behavioral issues (Asmeri Noubari et al., 2023; Kohansal, 2021). Its family-based format strengthens caregivers' ability to interpret and respond to the child's affective signals, helping reduce parenting stress and support a secure emotional environment (Ebadi et al., 2021).

Another intervention with growing empirical support is emotional disclosure through drawing. Expressive writing has long been recognized as a method for processing traumatic and distressing experiences (Bottoms et al., 2014), but children often lack the verbal sophistication needed for such narrative work. Art-based emotional disclosure allows children to externalize painful or confusing feelings in a symbolic and developmentally appropriate way (Liu et al., 2024). By using drawings, children can represent complex inner states safely and tangibly, facilitating both catharsis and cognitive reorganization of distressing memories (Anjam & Dortaj, 2020). Evidence indicates that drawing-based disclosure can reduce aggression and anger (Anjam & Dortaj, 2020), alleviate stress in parents of children with developmental challenges (Ebadi et al., 2021), and contribute to improvements in emotional processing and resilience (Safikhani, 2022). Recent adaptations integrate digital art to further enhance engagement and self-expression among children (Liu et al., 2024).

The combination of art-based disclosure and play-based relational interventions reflects a broader movement toward experiential, child-centered therapies. These modalities are particularly well-suited for younger children, who may have difficulty with abstract discussion of emotions and instead benefit from tangible, action-oriented strategies (Abazari et al., 2017; Mohammadi Keshka et al., 2022). For example, integrating drawing and group play has been shown to reduce both internalizing and externalizing problems in children with

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separation anxiety disorder (Mohammadi Keshka et al., 2022). Likewise, play therapies that actively engage parents not only address child-level symptoms but also target family-level factors such as emotional climate and parental responsiveness (Abazari et al., 2017; Ebadi et al., 2021). Such family-based interventions can indirectly reduce maladaptive parentification, perfectionism, and suppression of emotion in both children and their caregivers (Bae & Choi, 2023).

From a developmental psychopathology perspective, internalizing and externalizing symptoms often share underlying vulnerabilities in emotion regulation systems (Pouladi et al., 2022; Zitzmann et al., 2024). Poor modulation of affect can lead to internal distress, such as anxiety and depression, or to outward behavioral difficulties, depending on environmental contingencies and individual temperament (Kwon et al., 2017; Rajabi & Abbasi, 2011). Consequently, treatments that strengthen emotional awareness, acceptance, and self-regulatory strategies may have broad transdiagnostic benefits (Masipour, 2025). Transdiagnostic approaches that address common affective mechanisms are increasingly recognized as cost-effective and clinically powerful (Pouladi et al., 2022). Floortime's emphasis on emotional signaling and relational repair aligns well with this transdiagnostic model, as does expressive art therapy, which fosters both affect labeling and nonverbal processing of distress (Liu et al., 2024).

Family dynamics also play a critical role in shaping children's emotional competencies. High levels of expressed emotion, parental criticism, and inconsistent support can reinforce maladaptive schemas and impede healthy affect regulation (Hadiyan et al., 2023). Conversely, interventions that train caregivers to attune to children's cues and respond contingently can transform these relational patterns (Abazari et al., 2017; Asmeri Noubari et al., 2023). Family-centered Floortime not only strengthens dyadic attunement but also reduces parenting stress, thereby creating a more stable emotional environment (Ebadi et al., 2021). When combined with child-centered emotional disclosure through drawing, which allows children to safely process and reorganize painful experiences, these interventions address both systemic and individual pathways to improved mental health (Mohammadi Keshka et al., 2022).

The relevance of these therapeutic methods extends beyond clinical populations, as emotion regulation competence is a key predictor of academic functioning, social integration, and

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resilience under stress (Bae & Choi, 2023; Kwon et al., 2017). Effective early interventions can prevent escalation of subclinical anxiety into more entrenched disorders and reduce long-term service needs (Dragomir, 2024). Furthermore, creative therapies may have cultural advantages, providing a non-stigmatizing entry point for families and children reluctant to engage in traditional talk therapy (Safikhani, 2022). The adaptability of art-based and play-based methods across cultural contexts, including Iran, has been supported by local research demonstrating positive outcomes for emotional regulation and behavioral adjustment (Abazari et al., 2017; Mohammadi Keshka et al., 2022).

Despite their promise, comparative studies examining the relative effectiveness of emotional disclosure through drawing and family-based Floortime in children with anxiety symptoms remain scarce. Much of the existing evidence evaluates each intervention in isolation or in populations with autism spectrum disorder or behavioral difficulties, but less is known about their direct impact on anxiety-driven internalizing and externalizing symptoms. Moreover, the potential maintenance of therapeutic gains over time—a critical aspect of clinical effectiveness—has been underexplored (Masipour, 2025).

Given the need for accessible, developmentally sensitive, and family-inclusive interventions, this study aimed to compare the effectiveness of emotional disclosure through drawing and family-based Floortime play therapy in reducing emotion regulation difficulties and alleviating internalizing and externalizing symptoms in children with anxiety symptoms. By directly contrasting these two promising approaches, the research seeks to inform clinical decision-making and provide evidence for targeted, culturally relevant therapeutic strategies to support children's emotional well-being and adaptive functioning.

Material and Methods

Study Design and Participants

This study employed a quasi-experimental design with a pretest–posttest control group and a follow-up period. The statistical population included all children aged 8 to 10 years residing in Qaen, South Khorasan Province, in 2024–2025. Children with anxiety symptoms were identified as those who met the study inclusion criteria and scored more than one standard

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deviation above the mean on the Spence Children's Anxiety Scale–Parent version (SCAS-P), which helps accurately identify children with elevated social anxiety and related internalizing problems (mean = 36.76, SD = 5.63).

Initially, 200 children were screened using the SCAS-P. Based on Cohen's table for comparing three groups with a medium effect size, a minimum statistical power of 0.80, and a significance level of 0.05, a sample size of 15 participants per group was determined. Therefore, a total of 45 participants were selected through purposive sampling after verifying eligibility criteria and were randomly assigned to three groups: emotional disclosure through drawing, family-based Floortime play therapy, and a control group.

Inclusion criteria were the absence of chronic physical illnesses, confirmed elevated anxiety symptoms on the SCAS-P, and the willingness of families to actively participate in family-based Floortime sessions. Exclusion criteria included absence from more than two intervention sessions and failure to provide signed informed consent. Parents provided written informed consent after receiving full explanations of the study aims and procedures. Both intervention groups underwent eight 45-minute sessions. The emotional disclosure group engaged in guided drawing activities designed to encourage expression of feelings and experiences. The family-based Floortime group participated in structured play sessions involving the child, parent(s), and therapist, aiming to enhance emotional connection, self-regulation, and communication. The control group was placed on a waitlist and, after the study follow-up, was offered two free educational sessions to ensure ethical fairness.

Data Collection

The Difficulties in Emotion Regulation Scale for Children (DERS-C), originally developed by Gratz and Roemer (2004) and adapted for children, was used to measure emotion regulation difficulties. The revised 36-item version assesses six dimensions: nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Items are scored on a Likert scale, with higher scores reflecting greater difficulties in emotion regulation. The DERS-C demonstrates strong internal consistency, with Cronbach's alpha reported at 0.93 for the full scale and above 0.80 for each subscale. In Iranian validation studies, Cronbach's alpha coefficients ranged from 0.82 to

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0.89, and test–retest reliability ranged between 0.79 and 0.91 over a one-week interval. In the present study, internal consistency was 0.89.

Behavioral and emotional problems were assessed using the Child Behavior Checklist for ages 6–18 (CBCL) developed by Achenbach (2001). The parent-report form evaluates competencies, adaptive functioning, and a broad range of emotional and behavioral difficulties. It includes 115 items rated on a 3-point Likert scale from 0 (not true) to 2 (very true/often true). The CBCL measures eight syndrome scales: anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. It also provides three broadband scores: internalizing problems, externalizing problems, and total problems. T scores below 60 are considered nonclinical, scores from 60 to 63 (or up to 65 for syndrome scales) are borderline clinical, and higher scores indicate a clinical range. The CBCL has demonstrated excellent reliability and validity across studies, with Cronbach's alpha up to 0.97 and test–retest reliability of 0.94. It has been standardized and validated for use in Iran, with strong internal consistency and construct validity confirmed in local samples.

Interventions

The family-based Floortime play therapy program was implemented in eight 45-minute sessions held twice weekly. The intervention followed the structured protocol developed by Zarrabi Moghadam and Yazdi (2019) and was delivered by the researcher. The sessions began with building rapport, introducing the therapy space, and familiarizing mothers and children with the principles and rules of Floortime play therapy. Mothers were guided to observe their children's unique sensory and emotional responses, understand individual differences, and engage in responsive and emotionally attuned interactions. As the program progressed, sessions focused on strengthening mother–child communication through guided play, encouraging children to lead activities while therapists and mothers scaffolded self-expression, impulse control, and goal-directed behavior. Activities included interactive games tailored to sensory processing, memory, and problem-solving, such as hiding and guessing objects, creating stories, drawing without certain letters, and symbolic play to improve emotional connection and cognitive flexibility. Mothers were taught to recognize

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and respond to their children's emotional cues, close communication loops, and reinforce adaptive self-talk. By the final sessions, the focus was on integrating acquired skills, enhancing mutual understanding, and helping children link ideas and emotions, while parents were coached to maintain therapeutic play at home. Each child received a commemorative gift at the conclusion of the program, and posttest assessments were conducted immediately after the last session.

The emotional disclosure through drawing program consisted of eight 45-minute sessions conducted twice weekly, based on the intervention framework of Ashour and colleagues (2023) and delivered by the researcher. The sessions started with establishing a safe therapeutic environment, explaining group rules in child-friendly language, and encouraging participants to express unpleasant or stressful memories through drawings that captured their deepest emotions and thoughts. In subsequent sessions, children expanded and reinterpreted their previous drawings to deepen their emotional expression without needing to recount specific events verbally. As therapy advanced, the focus shifted to enhancing social understanding and relationship building by assigning symbolic colors to interpersonal experiences and drawing facial expressions representing varied emotions such as happiness, sadness, anger, and calmness. Children were guided to reflect on their own and others' emotional states, examine the impact of hasty judgments on relationships, and explore healthier ways of responding. Later sessions targeted anger management and self-control by drawing aggressive and calm animals, comparing their appeal, and discussing personal choices. In the final meetings, children transformed negative and positive emotion words into images of people, animals, or objects, gradually recognizing their own emotional strengths and areas for growth. The closing session involved sharing these drawings with the group, fostering self-acceptance, and reinforcing the therapeutic gains before posttest assessment.

Data analysis

Data were analyzed in two stages: descriptive and inferential. Descriptive statistics, including means and standard deviations, were calculated for demographic variables (age, gender) and outcome measures at pretest, posttest, and follow-up stages. Inferential analyses were performed using SPSS version 26. To examine the effects of the interventions, analysis

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of covariance (ANCOVA) was employed, controlling for pretest scores to compare posttest outcomes across groups. Bonferroni post hoc tests were used to identify pairwise differences between the emotional disclosure, Floortime play therapy, and control groups. Prior to conducting ANCOVA, assumptions such as homogeneity of regression slopes, normality, and homogeneity of variances (Levene's test) were tested and confirmed. The statistical significance level was set at $p < .05$ for all analyses.

Results

The final study sample consisted of 45 children aged 8 to 10 years, distributed equally across the three groups of emotional disclosure through drawing, family-based Floortime play therapy, and control. In the emotional disclosure group, 2 children (4.4%) were 8 years old, 7 children (15.5%) were 9 years old, and 6 children (13.3%) were 10 years old. In the Floortime group, 1 child (2.2%) was 8 years old, 6 children (13.3%) were 9 years old, and 8 children (17.7%) were 10 years old. In the control group, 2 children (4.4%) were 8 years old, 6 children (13.3%) were 9 years old, and 7 children (15.5%) were 10 years old. Overall, the sample showed a relatively balanced age distribution, with the largest proportion of participants being 9 and 10 years old across all groups, ensuring comparability among intervention and control conditions.

Table 1. Descriptive indices of emotion regulation difficulties and internalizing and externalizing symptoms across groups

Variable	Group	Stage	Mean	SD	Stage	Mean	SD
Emotion Regulation Difficulties	Emotional Disclosure Drawing	Pretest	116.47	2.99	Posttest	70.13	1.60
	Floortime Play Therapy	Pretest	115.13	3.16	Posttest	73.06	2.05
	Control	Pretest	110.80	3.08	Posttest	90.06	1.79
Internalizing Symptoms	Emotional Disclosure Drawing	Pretest	88.06	12.40	Posttest	54.00	4.94
	Floortime Play Therapy	Pretest	83.00	11.03	Posttest	52.12	4.68
	Control	Pretest	88.33	13.98	Posttest	78.53	8.49
Externalizing Symptoms	Emotional Disclosure Drawing	Pretest	86.86	15.41	Posttest	54.40	5.61
	Floortime Play Therapy	Pretest	90.26	12.76	Posttest	52.60	5.43
	Control	Pretest	92.26	15.50	Posttest	70.46	7.84

As shown in Table 1, both intervention groups experienced marked improvements in emotion regulation and behavioral symptoms compared with the control group. In the emotional disclosure through drawing group, the mean score for emotion regulation difficulties dropped

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sharply from 116.47 at pretest to 70.13 at posttest and remained low at follow-up (71.06). Internalizing and externalizing symptoms also declined notably, with internalizing scores falling from 88.06 to 50.93 and externalizing scores from 86.86 to 53.20 by follow-up. Similarly, in the Floortime play therapy group, emotion regulation difficulties decreased from 115.13 to 73.06 at posttest and stayed stable (74.20), while internalizing symptoms declined from 83.00 to 52.46 and externalizing symptoms from 90.26 to 52.60. In contrast, the control group showed only modest reductions, with emotion regulation difficulties decreasing slightly from 110.80 to 89.30 and internalizing and externalizing symptoms remaining relatively high at follow-up. These descriptive trends indicate that both interventions were effective in improving emotion regulation and reducing anxiety-related behavioral difficulties, with effects persisting over time.

Before conducting the main statistical analyses, all necessary assumptions for analysis of covariance (ANCOVA) were examined and confirmed. The normality of the data distribution was assessed using skewness, kurtosis, and the Shapiro–Wilk test, indicating that scores for all key variables were normally distributed. Homogeneity of variances across groups was verified with Levene's test, which showed non-significant results, confirming equal error variances. The assumption of homogeneity of regression slopes was also met, as no significant interaction was found between the covariate (pretest scores) and the group variable. Additionally, linear relationships between the covariate and dependent variables were observed, and no outliers or influential data points were detected that could bias the results. These checks validated the suitability of the data for ANCOVA and ensured the reliability of the subsequent inferential analyses.

Table 2. Analysis of covariance (ANCOVA) results for emotion regulation difficulties, and multivariate ANCOVA for internalizing and externalizing symptoms

Effect	Variable	SS	DF	MS	F	p	Partial Eta Squared
Emotion Regulation Difficulties							
Corrected Model		12053.926	3	4017.975	11.334	.000	.453
Intercept		10215.139	1	10215.139	28.815	.000	.413
Pretest		304.192	1	304.192	0.858	.363	.020
Group		10582.907	2	5291.454	14.926	.001	.421
Error		14534.874	41	354.509			
Total		719253	45				
Internalizing Symptoms							
Corrected Model	Post-Internalizing	2460.862	4	615.216	15.219	.000	.603
Intercept	Post-Internalizing	2297.483	1	2297.483	56.836	.000	.587

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Pre-Internalizing	Post-Internalizing	11.447	1	11.447	0.283	.598	.007
Pre-Externalizing	Post-Internalizing	29.032	1	29.032	0.718	.402	.018
Group	Post-Internalizing	2454.698	2	1227.349	30.363	.000	.603
Error	Post-Internalizing	1616.915	40	40.423			
Externalizing Symptoms							
Corrected Model	Post-Externalizing	2985.747	4	746.437	18.421	.000	.648
Intercept	Post-Externalizing	2579.153	1	2579.153	63.650	.000	.614
Pre-Internalizing	Post-Externalizing	91.125	1	91.125	2.249	.142	.053
Pre-Externalizing	Post-Externalizing	2.745	1	2.745	0.068	.796	.002
Group	Post-Externalizing	2960.518	2	1480.259	36.531	.000	.646
Error	Post-Externalizing	1620.831	40	40.521			

Table 2 shows the results of the ANCOVA for emotion regulation difficulties and the multivariate ANCOVA for internalizing and externalizing symptoms after controlling for pretest scores. For emotion regulation difficulties, the group effect was significant ($F = 14.926$, $p = .001$, $\eta^2 = .421$), indicating that the type of intervention contributed substantially to changes in regulation abilities beyond pretest differences. Similarly, multivariate analysis revealed significant group effects for both internalizing symptoms ($F = 30.363$, $p < .001$, $\eta^2 = .603$) and externalizing symptoms ($F = 36.531$, $p < .001$, $\eta^2 = .646$), demonstrating large effect sizes and meaningful reductions in behavioral problems across the intervention groups compared to the control. Pretest scores did not significantly predict posttest outcomes, confirming the effectiveness of the interventions independent of initial symptom severity. These findings support the robust impact of both emotional disclosure through drawing and family-based Floortime play therapy in improving emotional and behavioral functioning in children with anxiety symptoms.

Table 3. Bonferroni post hoc comparisons for emotion regulation difficulties and internalizing and externalizing symptoms

Dependent Variable	Stage	Group (I)	Group (J)	Std. Error	Mean Difference (I–J)	Sig.
Emotion Regulation Difficulties	Posttest	Emotional Disclosure Drawing	Floortime Play Therapy	2.5952	-2.9	.794
		Emotional Disclosure Drawing	Control	2.5952	-19.9	.000
		Floortime Play Therapy	Control	2.5952	-17.0	.000
	Follow-up	Emotional Disclosure Drawing	Floortime Play Therapy	2.9604	-3.13	.888
		Emotional Disclosure Drawing	Control	2.9604	-18.26	.000
		Floortime Play Therapy	Control	2.9604	-15.13	.000
Internalizing Symptoms	Posttest	Emotional Disclosure Drawing	Floortime Play Therapy	2.2952	-1.86	.100

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		Emotional Disclosure Drawing	Control	2.2952	-14.5	.000
		Floortime Play Therapy	Control	2.2952	-12.4	.000
	Follow-up	Emotional Disclosure Drawing	Floortime Play Therapy	2.1839	-1.5	.100
		Emotional Disclosure Drawing	Control	2.1839	-16.2	.000
		Floortime Play Therapy	Control	2.1839	-14.6	.000
Externalizing Symptoms	Posttest	Emotional Disclosure Drawing	Floortime Play Therapy	2.3344	1.73	.100
		Emotional Disclosure Drawing	Control	2.3344	-16.06	.000
		Floortime Play Therapy	Control	2.3344	-15.8	.000
	Follow-up	Emotional Disclosure Drawing	Floortime Play Therapy	1.8295	0.6	.100
		Emotional Disclosure Drawing	Control	1.8295	-11.0	.000
		Floortime Play Therapy	Control	1.8295	-11.0	.000

Table 3 presents the Bonferroni post hoc comparisons among the three study groups for emotion regulation difficulties and internalizing and externalizing symptoms at posttest and follow-up. For emotion regulation difficulties, both the emotional disclosure and Floortime groups showed significantly lower posttest and follow-up scores compared with the control group ($p < .001$), while the difference between the two intervention groups was not significant at either time point ($p > .05$). Similarly, for internalizing symptoms, both active interventions produced significantly greater reductions compared with the control group at posttest and follow-up ($p < .001$), but no significant difference was observed between emotional disclosure and Floortime ($p > .05$). Externalizing symptoms followed the same pattern: both treatment groups improved significantly compared to the control group ($p < .001$), and no significant difference emerged between the two experimental interventions ($p > .05$). These findings confirm that while both interventions were highly effective relative to no treatment, their outcomes were comparable to each other in reducing emotion dysregulation and anxiety-related behavioral problems.

Discussion

The findings of this study demonstrated that both emotional disclosure through drawing and family-based Floortime play therapy produced significant improvements in children with anxiety symptoms, specifically by reducing emotion regulation difficulties and alleviating

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internalizing and externalizing behavioral problems. After controlling for pretest differences, both interventions outperformed the control group at posttest and follow-up, indicating robust and sustained therapeutic effects. Importantly, although each intervention significantly improved outcomes, there were no meaningful differences between the two active treatment groups, suggesting that both approaches are comparably effective in addressing the core emotional and behavioral difficulties of anxious children.

The strong reduction in emotion regulation difficulties aligns with the theoretical and empirical rationale underlying both interventions. Emotional disclosure through drawing provides children with a symbolic, developmentally appropriate medium to express distressing memories and unresolved affect, thereby reducing emotional avoidance and increasing self-awareness (Anjam & Dortaj, 2020; Bottoms et al., 2014). Visual representation of inner experiences helps reorganize negative emotions into coherent narratives, enhancing clarity and acceptance (Liu et al., 2024; Safikhani, 2022). Similarly, the Floortime approach facilitates emotion regulation by fostering safe parent–child interactions, helping caregivers respond to affective cues and co-regulate emotional arousal (Abazari et al., 2017; Şengül-Erdem, 2021). Our findings that emotion regulation improved substantially in both groups echo previous studies showing that play-based, relationship-focused interventions strengthen self-regulation capacities in children with developmental and emotional difficulties (Asmeri Noubari et al., 2023; Roghani et al., 2022).

Improvements in internalizing symptoms—including anxiety, withdrawal, and somatic complaints—further support the utility of experiential therapies for anxious children. Children who engaged in expressive art were able to externalize fears and sadness, reducing internal tension and avoidance (Anjam & Dortaj, 2020; Liu et al., 2024). Past research shows that structured emotional disclosure can decrease symptoms of anxiety and depression by increasing tolerance for negative affect and promoting meaning-making (Bottoms et al., 2014). Likewise, the Floortime model's emphasis on attunement and strengthening secure parent–child bonds likely helped reduce fearfulness and promote emotional safety, which are crucial for anxious children (Abazari et al., 2017; Bayat, 2016). These results also align with the transdiagnostic perspective, which suggests that interventions targeting underlying

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affective mechanisms can reduce multiple domains of psychopathology (Pouladi et al., 2022; Zitzmann et al., 2024).

The observed decrease in externalizing symptoms is noteworthy because anxious children are often assumed to present primarily with internalizing difficulties; however, poor emotion regulation can also manifest as aggression and defiance when children are overwhelmed (Kwon et al., 2017; Rajabi & Abbasi, 2011). Our findings parallel studies showing that interventions enhancing emotional expression and parent–child relational quality can reduce oppositional behaviors and impulsivity (Mohammadi Keshka et al., 2022; Roghani et al., 2022). The active involvement of parents in the Floortime program likely helped reduce maladaptive cycles of coercion and frustration, while art-based disclosure provided a non-threatening outlet for anger and irritability (Abazari et al., 2017; Anjam & Dortaj, 2020).

Another important aspect is the sustained effectiveness observed at follow-up. Many interventions show initial improvements but fail to maintain gains once sessions end. The continued progress in both groups indicates that the skills and emotional insights acquired during therapy may have generalized to daily life. Floortime's training of parents as emotional co-regulators could have contributed to ongoing support at home (Abazari et al., 2017; Ebadi et al., 2021). Similarly, emotional disclosure through drawing may have enhanced children's internal coping strategies and ability to self-soothe when faced with distress (Liu et al., 2024; Safikhani, 2022).

The comparable effectiveness of both methods is an important contribution to the literature. While Floortime is well-established in the treatment of autism and developmental disorders (Bayat, 2016; Şengül-Erdem, 2021), its use for anxiety and emotion dysregulation has been less systematically explored (Roghani et al., 2022). Likewise, while art-based emotional disclosure has shown promise for aggression reduction and stress relief (Anjam & Dortaj, 2020; Ebadi et al., 2021), comparative trials with relational therapies have been scarce. Our findings support the adaptability of these modalities to anxiety-related emotional and behavioral issues and underscore the potential for non-pharmacological, developmentally attuned interventions to promote mental health in young populations (Masipour, 2025; Pouladi et al., 2022).

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Furthermore, the family-based nature of Floortime appears to address relational vulnerabilities that can sustain anxiety. Studies have shown that high parental stress, unresolved trauma, and maladaptive emotional climates can intensify children's regulatory problems (Bae & Choi, 2023; Hadiyan et al., 2023). By coaching parents to tune into their child's emotional signals and maintain attuned interactions, Floortime interrupts these negative cycles. This aligns with earlier Iranian and international research demonstrating that parent-mediated interventions are crucial for sustainable child outcomes (Abazari et al., 2017; Kohansal, 2021).

In addition, the accessibility and cultural appropriateness of both interventions are notable. Drawing and play are natural communication tools for children across cultures and require minimal language complexity, making them highly adaptable in contexts where stigma or limited access to specialized services might hinder traditional therapy (Liu et al., 2024; Safikhani, 2022). Prior research in Iranian populations has confirmed that both Floortime and art-based interventions can be effectively localized while preserving their therapeutic essence (Abazari et al., 2017; Mohammadi Keshka et al., 2022). This cultural adaptability is essential for expanding child mental health care in diverse educational and clinical settings.

Despite the promising results, some limitations should be acknowledged. First, the study's sample size, while statistically adequate, was relatively small and drawn from a single geographic area, potentially limiting the generalizability of the findings. Children were selected using purposive sampling, which may introduce selection bias and reduce external validity. Second, the reliance on parent-report measures for internalizing and externalizing symptoms, while practical and widely used, might be influenced by parental perceptions and expectations, especially since parents were involved in one of the interventions. Including teacher reports or direct behavioral observations would strengthen future studies. Third, the follow-up period, although sufficient to observe short-term maintenance, was limited to a relatively brief post-intervention window; long-term durability of treatment effects remains unknown. Finally, while both interventions were manualized and structured, therapist effects and fidelity to the protocol were not independently assessed, leaving room for variability in implementation.

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Future studies could build upon these findings by employing larger, more diverse samples drawn from multiple regions to improve generalizability and cultural representativeness. Longitudinal research with extended follow-up periods would be valuable to determine the persistence of treatment gains and to identify factors that predict long-term success. Incorporating multi-informant and multi-method assessments, including teacher ratings, direct observations, and physiological markers of emotion regulation, would add depth and reduce rater bias. Comparative studies could also explore hybrid models, integrating elements of Floortime's relational coaching with art-based emotional disclosure to examine potential synergistic effects. Additionally, evaluating the cost-effectiveness and scalability of these approaches in school settings and community clinics would provide practical insights for broad implementation.

Practitioners working with anxious children may consider adopting both emotional disclosure through drawing and family-based Floortime as effective, non-invasive, and culturally flexible interventions. Floortime can empower caregivers by teaching them to become sensitive co-regulators and strengthen family emotional climates, while drawing-based disclosure can be easily implemented in individual or group settings to facilitate safe expression and processing of distress. Schools and mental health centers can integrate these interventions into preventive programs, offering support to children with early signs of anxiety before symptoms escalate. Training clinicians, educators, and parents in these approaches may enhance their capacity to nurture emotion regulation skills and reduce behavioral problems, ultimately promoting resilience and well-being in children.

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Data availability statement

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

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University.

Author contributions

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

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Conflict of interest

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

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