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Research Paper

A Comparative Analysis of Family-Focused and Metacognitive Therapies to Improve Parental Affective Regulation in Bipolar II Youth

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ABSTRACT

Background: Bipolar II disorder in children has a significant impact on family dynamics, often leading to parental stress and difficulties in affective control. These parental challenges can exacerbate the child's symptoms and hinder treatment outcomes.

Objectives: This study aimed to compare the effectiveness of family-focused therapy (FFT) and metacognitive therapy (MCT) on affective control in parents of children diagnosed with bipolar II disorder.

Materials & Methods: This study utilized a quasi-experimental design with a pre-test, post-test, and 3-month follow-up assessment. A convenience sample of 45 individual parents of children diagnosed with bipolar II disorder, who were seeking counseling services in Isfahan, Iran (2023), was recruited for this study. Participants were subsequently assigned to one of three groups: FFT (n=15; 7 mothers, 8 fathers), which consisted of nine 120-minute sessions; MCT (n=15; 8 mothers, 7 fathers), which comprised eight 120-minute sessions; or a wait-list control group (n=15; 7 mothers, 8 fathers). Affective control was measured using the affective control scale at pre-test, post-test, and follow-up. Data were analyzed using repeated measures ANOVA (SPSS software, version 26).

Results: Based on the results, both FFT and MCT led to improvements in parental affective control components at the post-test stage compared to the control group (P<0.001). Furthermore, the results of group comparisons indicated a significant difference between the effects of FFT and MCT on the components of depressed mood (P=0.041), anxiety (P=0.044), and the overall affective control score (P=0.006). These findings suggest that FFT was a more effective method than MCT for enhancing affective control.

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Conclusion: The study revealed that FFT and MCT enhanced parental affective control in bipolar II families, but FFT outperformed MCT in reducing parental depression, anxiety, and improving emotional regulation, indicating FFT's greater benefit for parental emotional challenges.

Introduction

Bipolar disorder, a complex psychiatric condition affecting 1.5 to 3 percent of the population, manifests in two primary forms: Bipolar I, characterized by full manic episodes often requiring hospitalization, and bipolar II, marked by less severe hypomanic episodes and prominent, prolonged depression [1]. While bipolar II exhibits slightly lower heritability than bipolar I, a significant 36.3% of individuals with bipolar II report a familial history, underscoring the genetic influence in both types [2]. Cognitive deficits in executive function, memory, and attention, coupled with maladaptive emotion regulation, are common in bipolar II patients [3]. A critical challenge for families affected by bipolar disorder is managing emotional fluctuations, which can severely strain relationships and diminish quality of life [4, 5].

Effective affective control, defined by the ability to regulate negative affect, anxiety, anger, and depressed mood, is crucial for navigating stressful situations [6-8]. In families with a member diagnosed with bipolar II, improving affective control not only enhances family dynamics but also significantly supports the mental well-being of all members [4]. Recognizing its importance, family-focused therapies are vital in improving the lives of those affected by bipolar disorder [9].

Family-focused therapy (FFT) is a psychosocial intervention designed for individuals with bipolar disorder and their families, typically used in conjunction with pharmacotherapy to stabilize symptoms and prevent relapse [10]. FFT equips families with strategies to manage crises and emotional challenges by enhancing their understanding of bipolar disorder's symptoms and triggers [11]. A core component of FFT is improving communication and problem-solving skills, enabling family members to provide effective support through active listening, constructive communication, and stress management [12]. Given that intense emotional reactions can exacerbate crises in these families, training in affective control is essential, particularly for caregivers [13]. FFT teaches families to identify triggers such as stressors and conflicts, and to strengthen coping strategies and family relationships, ultimately reducing relapse rates and improving overall functioning [14].

Alongside FFT, metacognitive therapy (MCT) has shown promise in managing bipolar disorder [15]. MCT focuses on regulating individual thinking, particularly in anxiety and psychological disorders, by addressing maladaptive metacognitions that perpetuate negative emotions and beliefs [16]. These patterns often involve excessive self-focused attention and focus on perceived threats, leading to emotional distress [17]. For caregivers of individuals with bipolar II, who often struggle with their own emotions, MCT can enhance affective control by modifying negative metacognitive beliefs, such as the belief in the uncontrollability of thoughts [18]. By reducing unhealthy thought patterns and strengthening adaptive coping strategies, caregivers can better support their loved ones [19, 20].

While research has predominantly focused on individuals with bipolar disorder, studies examining caregivers and family members are limited. Furthermore, direct comparisons between family-based therapies like FFT and metacognitive interventions like MCT are lacking. Despite the distinct strengths of MCT, a comparative evaluation of their effectiveness in enhancing parental affective control is needed. This gap necessitates a practical comparison to inform treatment selection and the development of combined interventions. The differing approaches and conflicting evidence regarding their efficacy in parental affective control in the context of bipolar II disorder justify this study. Therefore, this research aims to compare the effectiveness of FFT and MCT on affective control in parents of children diagnosed with bipolar II disorder.

Materials and Methods

This study employed a quasi-experimental pre-test, post-test, 3-month follow-up design. The study population consisted of parents of children diagnosed with bipolar II disorder, who were referred to counseling centers in Isfahan during 2023. A convenience sample of 45 individual parents was recruited and subsequently allocated to one of three groups: FFT (n=15), MCT (n=15), or a waitlist control group (n=15). The FFT group participated in nine 120-minute family therapy sessions, while

Table 1. Summary of FFT sessions

Sessions	Contents
1st	Initial session focused on introductions, establishing rapport, and creating a supportive environment conducive to member participation. Educational objectives, the number of sessions, group guidelines, and administrative procedures (including pre-test administration) were outlined.
2nd	Participants' goals were discussed, and psychoeducation regarding bipolar II disorder was provided. Therapeutic techniques were employed to address negative emotions such as anger, blame, and despair, while also exploring positive expectations among participants.
3rd	The reciprocal influence between the individual with bipolar disorder and their family system was examined. Family concerns regarding the affected member were addressed, and family members were encouraged to express their attitudes and feelings towards each other and the presenting situation. Negative attitudes and feelings were reframed, and family strengths and competencies were emphasized. Each family member's role in the current situation was explored.
4th	The outcomes of self-role examination in contributing to family issues were discussed. Instruction in effective communication and active listening skills was provided, including identifying barriers to active listening, practicing listening techniques, paraphrasing, clarifying, and providing constructive feedback.
5th and 6th	Participants discussed their experiences applying active listening and effective communication skills in their personal and family lives, particularly in interactions with the individual with bipolar disorder. Training in contingency contracting was provided, encompassing contract development, identification of desired behaviors, determination and implementation of rewards. Modeling techniques were also taught, including demonstrating specific behaviors, practicing these behaviors, and providing feedback.
7th and 8th	Participants discussed their experiences implementing contingency contracting and modeling techniques in their personal and family lives and interactions with the individual with bipolar disorder. Instruction was provided on negotiation skills, covering expression of feelings, interests, and desires, proposing solutions, and reaching mutual agreement. Problem-solving skills were also taught, including problem definition, goal setting, brainstorming solutions, solution implementation, and outcome evaluation.
9th	Participants discussed their experiences applying negotiation and problem-solving skills in their personal and family lives and interactions with the individual with bipolar disorder. Constructive changes achieved throughout the therapeutic process were reviewed, and strategies for maintaining and consolidating these changes were discussed. The sessions were summarized, member feedback was solicited, the post-test was administered, and therapy was concluded.

the MCT group received eight 120-minute therapy sessions. Session content for both interventions is summarized in Tables 1 and 2. Inclusion criteria were: (1) At least one year elapsed since the child's diagnosis; (2) no prior participation in similar interventions or training; (3) provision of informed and voluntary consent; and (4) a confirmed diagnosis of bipolar II disorder in the child. Exclusion criteria included: (1) Attendance at fewer than seven sessions (missing more than two); (2) non-completion of assigned tasks; (3) incomplete pre-test, post-test, or follow-up questionnaire data; and (4) parental separation or divorce. The affective control scale was administered to all three groups at pre-test, post-test, and 3 months after the completion of the interventions (follow-up assessments).

Measure

Affective control scale developed by Williams et al. in 1997 [21], is a 42-item instrument designed to measure emotional regulation, assesses four subscales: Anger (8 items), depressed mood (8 items), anxiety (13 items), and positive affect (13 items), with responses rated on a 7-point Likert scale from 7 ("strongly disagree") to 1 ("strongly agree"); for the anger, depressed mood, and anxiety subscales, higher scores indicate greater negative affect and thus poorer affective control, while for the positive affect subscale, higher scores reflect greater positive emotions and better control; subscale scores are derived by summing corresponding item scores, and the total scale score is the sum of all items, with score ranges of 8 to 56 for anger and depressed mood, 13 to 91 for anxiety and positive affect, and 42 to 294 for the total scale; the scale has demonstrated robust reliability, particularly in its Persian version, which has been normalized and validated with a Cronbach's α of 0.88, confirming its excellent internal consistency and suitability for use within the Iranian context [22].

Data analysis

Descriptive statistics (i.e. Mean±SD) were computed to characterize the dataset. The normality of data was assessed using the Shapiro-Wilk test, and the homogeneity of variances was examined using Levene's test to ensure the assumptions of repeated measures analysis of vari-

Table 2. Summary of MCT sessions

Sessions	Contents
1st	The initial session involved introductions to the patient's family and a comprehensive interview to explore family dynamics and attitudes toward the illness. Psychoeducation regarding bipolar disorder and its characteristic episodes was provided, along with identification of early warning signs and the family's role in managing initial symptoms.
2nd	Treatment modalities were introduced, emphasizing the importance of collaboration between the patient, family, and referring physician to ensure treatment adherence. The role of psychotherapy as an adjunctive treatment in mitigating disease recurrence was discussed, as was the influence of nutrition, sleep, and regular social activities on mood regulation.
3rd	The family's role in contributing to and alleviating stress was examined, along with the impact of stress on increasing the risk of disease recurrence. Sources of stress within the family system were identified, as were indicators of family tension. Characteristics of families who effectively manage stress were explored, and these characteristics were evaluated within the context of the patient's family.
4th	Training in problem-solving skills was conducted, focusing on the patient's current circumstances and interpersonal relationships. The level of illness acceptance within the patient and their family was discussed, along with the patient's role within the family hierarchy and their performance of assigned family responsibilities.
5TH	The importance of fostering self-worth among family members and the impact of unstable self-worth on behavior and mood were examined. The interplay between feelings of worthlessness, bipolar disorder, and unstable self-worth was explored, along with strategies to support the patient in achieving a positive sense of self-worth.
6th	The influence of cognitions on interpersonal relationships was discussed. Early relational schemas within the couple were identified, along with the relationship between cognitive biases and mood disorders, as well as the connection between cognitive biases and dysfunctional communication patterns. Effective strategies for reducing cognitive biases and promoting adaptive thinking were presented.
7th	The role of emotions in cognition and memory was examined, including the specific role of emotions in bipolar disorder and their contribution to family mental health. Strategies for expressing emotions within the family context were explored and practiced.
8th	The concept of conflict was defined, emphasizing the normalcy of interpersonal conflict. Various conflict resolution communication strategies were examined, with a focus on selecting optimal solutions. Participants practiced conflict resolution techniques and learned coping mechanisms. The sessions were summarized, participant feedback was gathered, the post-test was administered, and the training concluded.

ance (ANOVA) were met. To assess the intervention's impact on the outcome variables across time, repeated measures ANOVA was employed. Additionally, Bonferroni post-hoc tests were used for univariate analyses to examine pairwise comparisons between groups and time points. Statistical analyses were conducted using SPSS software, version 26.

Results

Forty-five parents of children diagnosed with bipolar II disorder participated in this study and were assigned to one of three groups: FFT (n=15; 7 mothers, 8 fathers), MCT (n=15; 8 mothers, 7 fathers), or a waitlist control group (n=15; 7 mothers, 8 fathers). Mean maternal ages were 41.43±4.47 years for the FFT group, 40.03±3.70 years for the MCT group, and 41.12±5.61 years for the control group. Mean paternal ages were 46.71±3.90 years for the FFT group, 43.86±4.10 years for the MCT group, and 48.38±6.87 years for the control group. Means±standard deviations for affective control components and total affective control scores across pre-test, post-test, and follow-up assessments are presented in Table 3. There was no statistically significant difference between three groups at baseline.

The normality of data was assessed using the Shapiro-Wilk test for each affective control component and the total score within each group at all three measurement points (pre-test, post-test, and follow-up). Results supported the assumption of normality. Levene's test was conducted to examine the homogeneity of variances for each component and the total score between groups. Findings indicated that the homogeneity of variance assumption was met.

The results of the repeated-measures ANOVA, as presented in Table 4, revealed a significant group by time interaction for all variables: Anger ($F=4.34$, $P=0.003$, $\eta^2=0.17$), depressed mood ($F=5.26$, $P=0.001$, $\eta^2=0.20$), anxiety ($F=6.80$, $P=0.001$, $\eta^2=0.25$), positive affect ($F=5.61$, $P=0.001$, $\eta^2=0.21$), and total affective control

Table 3. Intra-group and inter-group comparison of research variables

Variables	Groups	Mean±SD			P (Within-group)
		Pre-test	Post-test	Follow-up	
Anger	FFT group	34.64±5.97	22.64±4.92	24.36±4.63	0.001
	MCT group	33.47±5.96	26.13±4.64	27.2±5.27	0.001
	Control group	36.19±6.55	34.56±6.16	35.19±5.61	0.485
P (Between-group)		0.504	0.001	0.001	-
Depressed mood	FFT group	31.64±6.86	21.21±3.94	23.3±4.65	0.001
	MCT group	33.13±6.82	25.73±4.6	26.73±5.05	0.002
	Control group	32.69±6.75	33.19±5.75	33.62±6.1	0.695
P (Between-group)		0.676	0.001	0.001	-
Anxiety	FFT group	43.71±7.63	29.14±4.24	31.64±4.88	0.001
	MCT group	44.2±7.02	35.73±5.5	37.2±4.72	0.003
	Control group	45.31±8.34	44.68±6.88	43.37±5.4	0.440
P (Between-group)		0.588	0.001	0.001	-
Positive affect	FFT group	31.21±5.39	44.5±6.15	43.75±6.47	0.001
	MCT group	34.73±4.43	43.2±6.64	46.13±6.92	0.001
	Control group	32.21±5.6	35.07±4.15	34.93±5.53	0.123
P (Between-group)		0.173	0.001	0.001	-
Affective control (total)	FFT group	154.5±21.79	140.21±14.5	111.5±16.63	0.001
	MCT group	154±20.73	122.33±13.83	126.2±14.54	0.001
	Control group	160.31±23.9	156.19±21.61	157.13±16.96	0.623
P (Between-group)		0.492	0.001	0.001	-

(F=8.75, P=0.001, η^2=0.29). These significant interactions indicate that the effects of FFT and MCT on affective control components varied significantly across the pre-test, post-test, and follow-up assessments.

Table 5 illustrates within-group score change and pairwise comparisons of between-group chang through study time-points. The results revealed statistically significant mean score differences for the affective control subscales and total score between pre-test and post-test assessments, as well as between pre-test and follow-up assessments. However, no significant differences were observed between post-test and follow-up scores. Compared to the control group, both the FFT and MCT groups demonstrated statistically significant mean differences in affective control subscales and total scores. Specifically, both interventions resulted in reduced mean scores at post-test and follow-up compared to baseline (pre-test). Furthermore, a significant difference was found between the effects of FFT and MCT on depressed mood, anxiety, and total affective control, with FFT demonstrating a greater reduction in mean scores compared to MCT. These findings indicate a significant difference in the effectiveness of FFT and MCT in improving affective control within families of individuals diagnosed with bipolar II disorder, with FFT demonstrating greater efficacy.

Table 4. Repeated-measures ANOVA results

Variables	Source	MS	F	P	η_p^2
Anger	Time	1671.82	22.52	0.001	0.52
	Group	767.93	23.74	0.001	0.36
	Group×time	490.88	4.34	0.003	0.17
Depressed mood	Time	1387.83	15.84	0.001	0.43
	Group	476.04	17.57	0.001	0.30
	Group×time	575.19	5.26	0.001	0.20
Anxiety	Time	2100.67	17.72	0.001	0.46
	Group	1099.16	32.66	0.001	0.44
	Group×time	1675.62	6.80	0.001	0.25
Positive affect	Time	2085.07	23.03	0.001	0.52
	Group	1163.64	39.56	0.001	0.49
	Group×time	816.63	5.61	0.001	0.21
Affective control (total)	Time	28353.49	28.31	0.001	0.57
	Group	13644.77	47.82	0.001	0.53
	Group×time	9589.97	8.75	0.001	0.29

ANOVA: Analysis of variance.

Discussion

This study sought to investigate the comparative efficacy of FFT and MCT in enhancing affective control among parents of children diagnosed with bipolar II disorder. The results indicated a significant difference between the efficacy of FFT and MCT in improving affective control within families of individuals diagnosed with bipolar II disorder, with FFT demonstrating greater efficacy compared to MCT. Various studies have corroborated the effectiveness of FFT as an approach for managing bipolar disorder, particularly through the improvement of family relationships and the reduction of emotional distress. Research by Newman [23] and Miklowitz et al. [10] has demonstrated that FFT, by focusing on reducing negative behaviors and regulating emotions, can decrease anger, anxiety, and depressed mood in patients and their families. Furthermore, research by Tompson et al. [24] emphasized the efficacy of this method in controlling emotions in individuals with mood disorders. Similarly, a study by Bahrami et al. [25] showed that family-focused therapies have a greater impact on family attitudes and interactions compared to other methods such as psychoeducation or MCT. The findings of a study by Ochoa et al. [19] also support the positive role of metacognitive training in improving family relationships, although this effect is observed more in directly improving affective control within the family. Additionally, Miklowitz and Chung [16] have confirmed the impact of FFT on reducing family stress and improving social support.

Conversely, some studies have indicated that MCT can have a greater impact than FFT in certain aspects, particularly at the individual level. For instance, research by Steel et al. [26] emphasizes that MCT is highly effective in improving individual emotion regulation but pays less attention to family interactions, which contradicts the present study's findings regarding its limited impact on reducing family emotional distress. Similarly, research by Groves et al. [27] has shown that psychological therapies, including MCT, can contribute to improved cognitive function and mood, a result that contradicts the present study's emphasis on the priority of FFT. Furthermore, a study by Özdel et al. [28] confirmed the effectiveness of cognitive therapies, such as MCT, in reducing the severity of bipolar disorder symptoms, while the present study showed that MCT, compared to FFT, has

Table 5. Within-group change score and pairwise comparisons of between-group change scores for study variable

Variables	Group	Mean Difference (95% Confidence Interval)				
		Within-group		Between-group		
		Pre-test to Post-test	Pre-test to Follow-up	Groups	Pre-test to Post-test	Pre-test to Follow-up
Anger	Control	-1.63 (-4.37, 7.62)	-1.00 (-3.63, 5.64)	FET-Control	-11.73 (-16.31, -7.15)	-10.39 (-14.33, -6.46)
	FET	12.00 (6.80, 17.20)	10.29 (4.31, 16.26)	MCT-Control	-8.89 (-13.22, -4.55)	-8.23 (-11.95, -4.50)
	MCT	7.33 (2.45, 12.22)	6.27 (0.09, 12.62)	FET-MCT	-3.25 (-7.20, -0.71)	-1.98 (-5.35, 1.38)
Depressed mood	Control	0.50 (-6.49, 5.49)	0.94 (-3.85, 5.73)	FET-Control	-12.06 (-16.04, -8.07)	-9.98 (-14.29, -5.68)
	FET	10.43 (3.61, 17.24)	8.36 (2.42, 14.30)	MCT-Control	-7.90 (-12.09, -3.71)	-7.54 (-11.48, -3.61)
	MCT	7.40 (3.10, 11.70)	6.40 (1.66, 11.14)	FET-MCT	-4.23 (-7.87, -0.58)	-2.90 (-6.48, 0.68)
Anxiety	Control	0.63 (-4.84, 6.09)	1.94 (-3.78, 7.65)	FET-Control	-15.14 (-19.61, -10.63)	-11.56 (-15.60, -7.52)
	FET	14.57 (8.47, 20.67)	12.07 (6.04, 18.10)	MCT-Control	-7.40 (-11.96, -4.64)	-6.10 (-10.06, -2.13)
	MCT	8.47 (2.07, 14.86)	7.00 (1.46, 12.54)	FET-MCT	-6.52 (-10.71, -2.34)	-5.20 (-9.21, -1.18)
Positive affect	Control	2.38 (-4.05, 8.80)	1.19 (-7.74, 10.11)	FET-Control	-6.52 (-10.71, -2.34)	-12.13 (-16.21, -8.05)
	FET	13.29 (8.13, 18.44)	12.30 (6.93, 17.64)	MCT-Control	-9.26 (-13.88, -4.63)	-9.59 (-13.30, -5.88)
	MCT	8.47 (2.80, 14.14)	8.13 (1.95, 14.31)	FET-MCT	-4.49 (-9.71, -0.73)	-2.46 (-6.49, 1.56)
Affective control (total)	Control	4.13 (-16.65, 24.90)	7.19 (-11.80, 26.18)	FET-Control	-51.27 (-66.42, -36.13)	-44.07 (-56.75, -31.39)
	FET	50.29 (31.97, 68.60)	43.00 (24.15, 61.85)	MCT-Control	-33.45 (-48.29, -18.60)	-31.46 (-42.18, -20.73)
	MCT	31.67 (16.31, 47.02)	27.80 (11.08, 44.52)	FET-MCT	-17.74 (-29.24, -6.24)	-12.54 (-24.18, -0.91)

less impact on reducing family emotional distress. These results suggest that MCT can be an effective alternative in some areas, but at the family level, it has less effectiveness than FFT.

This finding can be explained by the fact that FFT focuses on improving the family's emotional environment and teaching communication and problem-solving skills within the family context. This approach is based on the premise that high levels of expressed emotion within families can exacerbate symptoms and lead to relapse [29]. Studies have shown that families receiving FFT, compared to those participating in standard crisis management programs, experience fewer relapses and are better able to manage symptoms, particularly depression [30]. Research has demonstrated that FFT, by improving communication patterns and reducing family conflicts, has been highly effective in reducing relapse and improving overall patient functioning, especially when combined with pharmacotherapy [9, 10]. In contrast, MCT focuses more on individual cognitive processes and metacognitive beliefs, aiming to improve the patient's ability to regulate emotional reactions and modify thinking patterns [26, 28]. Although MCT has been effective in treating various disorders, its application in the context of bipolar disorder, and especially in family dimensions, is less established [25]. Metacognitive interventions emphasize individual emotion regulation and pay less attention to family dynamics that play a role in managing bipolar disorder [26]. While FFT pays particular attention to family dynamics and strengthens emotional support and healthy communication within the family, these aspects are not sufficiently addressed in MCT [25].

Family therapy techniques are designed to enhance parents' communication and emotion regulation skills, and through step-by-step training in active listening, effective communication, negotiation, problem-solving, and modeling, they help parents play a more active role

in managing family relationships and supporting their child [13]. A better understanding of bipolar II disorder and the identification of the reciprocal influences of family members enable parents to reduce negative emotions such as anger, frustration, and blame, and to develop more positive attitudes toward their child's condition [29]. Furthermore, contingency management and modeling skills equip parents with practical ways to reinforce desired behaviors and reduce maladaptive behaviors. On the other hand, learning negotiation and problem-solving allows parents to react calmly and logically when faced with challenges [9]. These processes, as a whole, reduce parents' emotional stress, increase empathy, and strengthen emotional support within the family, which has a significant impact on emotion management and improving the quality of family relationships. Therefore, by learning how to identify early signs of relapse and establish healthy communication, families will be able to better manage bipolar disorder [11].

Given the cyclical nature of this disorder, with alternating periods of depression and mania placing significant strain on families, FFT, by enhancing emotion regulation within families, offers a comprehensive approach to managing this illness. Ultimately, the significant differences in the effectiveness of FFT and MCT in improving emotion regulation in families affected by bipolar II disorder can be attributed to FFT's specific focus on family dynamics and the strengthening of healthy communication patterns.

Conclusion

The present study offers important clinical implications for the treatment of families impacted by pediatric bipolar II disorder. Both FFT and MCT proved effective in enhancing parental affective control compared to a control condition. However, the observed significant differences between the two interventions indicate that FFT yields greater benefits in mitigating parental depressed mood, anxiety, and improving overall affective control. These findings support the consideration of FFT as a first-line intervention for addressing parental emotional distress and fostering a more supportive family environment in the context of bipolar II disorder.

Several limitations warrant consideration when interpreting the findings of this study. Firstly, the generalizability of the results may be limited due to the specific characteristics of the sample population. Secondly, the reliance on self-report instruments introduces the potential for response bias. A significant limitation of this study is the potential for within-family dependency arising from the inclusion of both parents from the same family. We did not employ statistical methods, such as multilevel modeling or generalized estimating equations (GEE), to control for this dependency. Consequently, the results of the repeated measures ANOVA may be influenced by within-family correlations. Future research should utilize statistical techniques that account for the nested structure of family data to ensure the independence of observations and provide more robust findings. To enhance the robustness of future studies, we recommend employing more homogeneous sampling strategies, extending the timeframe for longitudinal assessments, and integrating interview methodologies with questionnaire data.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the Ethical Committee of Sanandaj Branch, Islamic Azad University, Sanandaj, Iran (Code: IR.IAU.SDJ.REC.1402.090).

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Authors' contributions

All authors contributed equally to the conception and design of the study, data collection and analysis, interception of the results and drafting of the manuscript. Each author approved the final version of the manuscript for submission.

Conflict of interest

The authors declared no conflict of interest.

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