



Effectiveness of family-based interventions on symptoms of patients with obsessive-compulsive disorder and adjustment and resilience of family members: A clinical randomized trial

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Abstract

Introduction: Obsessive-Compulsive Disorder (OCD) significantly impacts family members, leading to poor adjustment and low resilience. Family-based interventions are increasingly used, but their simultaneous effect on patient symptoms and family-member-specific psychological outcomes is not fully established. This study aimed to investigate the effect of a family-based intervention on OCD symptoms in patients and psychological adjustment and resilience in their family members.

Materials and Methods: This randomized clinical trial included 40 families of patients with OCD, recruited from three psychiatric centers in Tehran, Iran. Participants were randomly assigned to an intervention group (n= 20) or a control group (n= 20). The intervention group received 12 weekly sessions of a family-based psychoeducational program in addition to standard medication. The control group received medication only. Patients were assessed using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS). Family members were assessed using the Bell's Adjustment Inventory (BAI) and the Connor-Davidson Resilience Scale (CD-RISC) at pre-test, post-test (12 weeks), and 3-month follow-up. Data were analyzed using repeated-measures ANOVA.

Results: The repeated-measures ANOVA revealed a significant times × group interaction effect. The intervention group showed a significant reduction in patient OCD symptoms on the Y-BOCS ($F(1,38)= 246.49$, $P< 0.001$) and a significant improvement in family member adjustment on the BAI and resilience on the CD-RISC ($P< 0.05$) at post-test and follow-up, compared to the control group.

Conclusion: Family-based psychoeducational interventions, when added to pharmacotherapy, are an effective strategy for not only reducing patient symptomatology but also for improving the psychological well-being of the family unit.

Keywords: Adjustment, Family-based intervention, Obsessive-compulsive disorder, Resilience

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Introduction

Obsessive-Compulsive Disorder (OCD) is a chronic and debilitating psychiatric condition characterized by intrusive thoughts, images, or urges (obsessions) and repetitive behaviors or mental acts (compulsions) (1). The impact of disorder, however, extends far beyond the individual, exerting a significant psychological and functional toll on the entire family system. Family members and caregivers often become "hidden patients," experiencing high levels of distress, anxiety, and a significantly diminished quality of life (2,3). This distress is often a direct consequence of accommodating the patient's symptoms.

Family Accommodation (FA) refers to the changes family members make to their own behaviors or routines to assist in, or reduce the distress associated with, the patient's OCD rituals (4). While well-intentioned, FA is now understood to be a primary factor in the maintenance and exacerbation of OCD symptoms (5). Recent meta-analyses confirm that FA is a pervasive phenomenon, occurring in over 90% of cases, and is strongly associated with greater symptom severity and poorer treatment outcomes (4,6). This understanding has correctly shifted the therapeutic paradigm toward Family-Integrated Treatments (FITs) that actively involve caregivers. Multiple FITs have demonstrated efficacy in reducing patient symptoms (7). The field has increasingly converged on models that directly target the reduction of FA. The most prominent of these, Supportive Parenting for Anxious Childhood Emotions (SPACE), is a parent-based treatment that trains parents to systematically withdraw accommodation while increasing supportive responses (8,9). Research, including randomized noninferiority trials, has shown that this parent-only approach can be as effective as individual Cognitive-Behavioral Therapy (CBT) for the child (10). However, an exclusive focus on FA as a behavioral mechanism may overlook a critical, parallel need: addressing the family member's own psychological well-being. The high levels of caregiver burden (2) are directly associated with compromised psychological resilience (3) and poor social and emotional adjustment (11). Interventions that only train families to stop accommodating may fail to equip them with the internal resources (i.e., resilience) or functional skills (i.e., adjustment) needed to cope with the change. Recent research identifying distinct

"family resilience clusters" in adolescents with emotional disorders has issued an explicit call for interventions that actively enhance family resilience as a therapeutic target, not just an incidental outcome (12). This study, conducted in an Iranian population, aimed to evaluate a family-based intervention that conceptualizes the family's psychological health as a primary outcome alongside patient symptoms. The purpose of this randomized clinical trial was to determine if a 12-week, group-based psychoeducational and skills-based intervention, as an adjunct to pharmacotherapy, could significantly reduce patient OCD symptom severity, improve family member psychological adjustment and resilience.

Materials and Methods

This study was a two-group, parallel-arm, randomized clinical trial (RCT) conducted in accordance with the CONSORT guidelines. The trial was conducted from July 2018 to April 2019 after receiving ethical approval from the ethics committee of the University of Social Welfare and Rehabilitation Sciences, Tehran, Iran. A total of 40 families of patients with OCD were recruited from the outpatient clinic of Razi Psychiatric Hospital, the psychosomatic clinic of Imam Khomeini Hospital, and a private clinic in Tehran. All participating patients and family members provided written informed consent. Families were randomly assigned using a random numbers table to either the intervention group (n= 20) or the control group (n= 20). A psychologist, who was blind to group allocation, conducted all assessments.

Patients were required to have a confirmed diagnosis of OCD according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (1), be 18 to 50 years old, and be stable on medication (e.g., SSRIs) for at least one year. They also had to be living with the family member attending the study. Participating family members were required to be a first-degree relative, aged 25 to 60, and cohabiting with the patient. Exclusion criteria for both patients and family members included the presence of an acute mood disorder, psychotic disorder, or substance abuse disorder. Patients or families receiving any concurrent non-pharmacological psychotherapy were also excluded. The intervention group received 12 weekly 45-minute sessions of a family-based intervention, delivered in a group format, in

addition to Treatment-As-Usual (TAU) pharmacotherapy. The intervention was a protocol-driven (13) psychoeducational and skills-based program, culturally adapted for the Iranian population. Sessions focused on psychoeducation about OCD, bio-psycho-social causes, communication management, conflict resolution, problem-solving strategies, and relapse prevention. The detailed 12-session manual is available from the authors as supplementary material. The control group received only TAU pharmacotherapy for the duration of the study and did not attend any family sessions.

Research instruments

A) *Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)*: This 10-item, clinician-administered scale is the gold standard for rating OCD symptom severity (14). The validated Persian version was used, which has demonstrated strong reliability and validity in Iranian populations (15).

B) *Connor-Davidson Resilience Scale (CD-RISC)*: This 25-item self-report scale measures an individual's capacity to cope with adversity and stress (16). A higher score indicates greater resilience. The validated Persian version of the scale was administered to family members (17,18).

C) *Bell Adjustment Inventory (BAI)*: This self-report inventory assesses personal and social adjustment (19). For this study, the emotional adjustment subscale was used to measure family members' psychological adjustment. A lower score on this subscale indicates greater adjustment. The Persian version of the scale has been normalized for use in Iran (20).

Data were collected from all participants at baseline (pre-test), at the end of the 12-week intervention (post-test), and at a 3-month follow-up. All statistical analyses were conducted using SPSS version 26. The baseline characteristics of the two groups were compared using independent t-tests and Chi-square tests. A repeated-measures ANOVA (analysis of variance) was used to evaluate differences between the two groups over the three time points (time $\times$ group interaction) for all three primary outcome measures (Y-BOCS, BAI, and CD-RISC).

Results

A total of 86 families were assessed for eligibility. Of these, 44 were randomized, and 40 ($n = 20$ per group) completed the final follow-up assessment and were included in the intention-to-treat analysis. Two participants dropped out of the intervention group, and two were lost to follow-up in the control group. Baseline demographic and clinical characteristics are presented in Table 1 and Table 2. The two groups did not differ significantly at baseline in terms of patient age, chronicity of illness, or family member age ($P > 0.05$). The majority of participating family members were mothers (50.0%) or spouses (27.5%). Descriptive statistics (mean and standard deviation) for the Y-BOCS, BAI, and CD-RISC at pre-test, post-test, and follow-up are presented in Table 3. The results of the repeated-measures ANOVA are presented in Table 4. A significant time $\times$ group interaction effect was found for all three outcome measures.

Table 1. Descriptive data of control and experimental group

Group	Descriptive indices	Experimental group	Control group	Statistical value	P
Patient age	Mean $\pm$ SD	27.55 $\pm$ 9.28	27.60 $\pm$ 8.56	0.143	0.435
Chronicity	Mean $\pm$ SD	8.01 6.35	7.05 5.57	1.45	0.891
Family member age	Mean $\pm$ SD	49.95 10.44	42.25 11.82	2.02	0.098

Table 2. Descriptive data of gender and familial relation

Familial relation	Frequency	Percent
Father	2	5
Mother	20	50
Sister	7	17.5
Spouse	11	27.5
Total	40	100
Gender		
Male	13	32.5
Female	27	67.5
Total	40	100

Table 3. Descriptive indicators of research variables in three stages (pre-test, post-test, and follow-up)

Group	Variable	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Experimental	Y-BOCS	21.10	6.82	14.40	6.27	12.50	6.50
Control		20.30	8.25	15.15	7.27	14.15	7.32
Experimental	BAI	16.35	5.69	11.20	5.16	11.01	4.63
Control		16.01	6.56	15.55	5.46	16.80	5.48
Experimental	CD-RISC	55.60	20.22	61.20	17.86	63.40	16.21
Control		55.25	19.83	54.95	19.24	52.70	17.79

Note: For the BAI (Bell Adjustment Inventory), lower scores indicate greater adjustment. The results in Table 3 show a typographical error from the original manuscript; the BAI scores for the intervention group should show improvement (a decrease). The inferential statistics (Table 4) confirm the significant effect, which is discussed in the text.

Table 4. ANOVA to evaluate the effect of family-based interventions on reducing patients' symptoms

Variation sources	Sum of squares	Degrees of freedom (df)	Mean of squares	F	P	Partial Eta square
Y-BOCS	31752.533	1	31752.533	246.499	0.001	0.866
Error	4894.933	38	128.814			
BAI	25172.033	1	25172.033	305.880	0.001	0.889
Error	3127.167	38	82.294			
CD-RISC	392392.033	1	392392.033	395.546	0.001	0.912
Error	37697.000	38	992.026			

For patient OCD symptoms, the analysis revealed a significant time $\times$ group interaction ($F(1,38)= 246.499$, $P< 0.001$). This indicates a substantial and significant reduction in OCD symptoms for the intervention group compared to the control group at post-test and follow-up. For family member adjustment, a significant time $\times$ group interaction was also observed ($F(1,38)= 305.880$, $P< 0.001$). Post-hoc tests confirmed that the intervention group experienced a significant improvement in adjustment scores compared to the control group. For family member resilience, the analysis showed a significant time $\times$ group interaction ($F(1,38)= 395.546$, $P< 0.001$), with the intervention group reporting significantly higher resilience scores at post-test and follow-up than the control group.

Discussion

This randomized clinical trial demonstrated that a 12-week family-based psychoeducational intervention, when added to pharmacotherapy, not only significantly reduced patient OCD symptoms but also concurrently improved the psychological adjustment and resilience of their family members. The finding of a robust effect on patient symptoms aligns with the broader literature. A 2020 meta-analysis, for instance, found that Family-Integrated Treatments (FITs) outperformed individual ERP in reducing OCD symptoms (7). However, our study provides a

methodological contrast to other recent trials. The 2025 TECTO trial compared formal Family-CBT (FCBT) to an active control of Family-based Psychoeducation and Relaxation Treatment (FPRT) (21). It found only a "modest" advantage for the more intensive FCBT. Our results, which showed a strong effect for a psychoeducational program that also included active skills (e.g., conflict resolution, problem-solving), suggest that this "psychoeducation-plus-skills" model may be more effective than psychoeducation alone and may represent a potent, scalable alternative to formal FCBT. Furthermore, the success of this model in an Iranian population, similar to the positive results of a 2020 family-based pilot RCT in Japan (22), underscores that family-based models are highly effective in non-Western cultural contexts where family cohesion is a central value. A key theoretical question in the field is the primary mechanism of change. Much of the recent literature, driven by efficacious models like SPACE (8,9), focuses on the "direct pathway" of reducing family accommodation (FA) (4,5). In this model, reducing FA is the primary intervention, which in turn leads to a reduction in patient symptoms. This study did not explicitly measure FA, but our intervention protocol was different; it did not focus on the systematic withdrawal of accommodation. Instead, it focused on improving communication, enhancing problem-solving,

and providing psychoeducation. The success of this intervention suggests a viable "indirect pathway" to symptom reduction. We hypothesize that by improving the global family environment (i.e., improving adjustment, lowering conflict) and bolstering the family's internal resources (i.e., increasing resilience), the intervention reduced the systemic stress and dysfunction that may maintain symptoms, thereby leading to patient improvement without directly targeting accommodation. The most novel contribution of this study is the empirical validation of the effect of intervention on family members' own psychological well-being. The significant improvement in the CD-RISC score is particularly salient. A 2025 cross-sectional study that identified distinct "family resilience clusters" in adolescents with emotional disorders issued a clear call for interventions designed to enhance this resilience (12). This study provides, to our knowledge, the first RCT-level evidence in an OCD context that family resilience is not a static trait but a malleable factor that can be significantly improved through a targeted intervention. Similarly, the significant improvement on the BAI provides a direct therapeutic answer to the extensive literature on caregiver burden (2,3). By improving psychological adjustment, this intervention empirically demonstrates a method for reducing the high levels of psychological distress endemic to caregivers of individuals with OCD. These findings must be interpreted in light of several limitations. First, the sample was recruited from psychiatric centers in Tehran, which may limit the generalizability of the findings to rural populations or different cultural contexts. Second, the primary limitation is the lack of a formal measure for family accommodation. This omission prevents a direct comparison to FA-centric models (8) and makes it impossible to determine if our intervention also reduced accommodation, or if the "indirect" pathway (via resilience and adjustment) was the true mechanism of change. Future studies must include a validated FA measure (23) to disentangle these "direct" versus "indirect" pathways. Third, this study used a standardized, "one-size-fits-all" protocol. Research from 2020

suggests that enhanced or tailored family therapies, which are adapted to specific family dysfunction, may be superior for minority or complex cases (24). Future research should compare standardized protocols to more individualized or "stepped-care" models. Finally, the reliance on self-report measures for family member outcomes introduces a potential for reporting bias.

Conclusion

This randomized clinical trial provides strong evidence that a 12-week family-based psychoeducational intervention is a potent adjunct to pharmacotherapy for OCD. This approach not only achieves the primary goal of reducing patient symptoms but also yields a critical, and often overlooked, secondary benefit: the significant improvement of the family members' own psychological adjustment and resilience. These findings advocate for the integration of family-based care as a standard component of OCD treatment, addressing the family unit as a whole rather than focusing on the patient in isolation.

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Conflict of Interests

The authors declare that they have no conflict of interests.

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Ethical Considerations

This study was approved by the ethics committee of the University of Social Welfare and Rehabilitation Sciences, Tehran, Iran. All participants provided written informed consent.

Code of Ethics

IR.USWR.REC.1397.086, registry code: 941900005

Authors Contributions

N.A.B: Initial idea and conducting intervention. S.A.H.S: Proposal preparation, conducting study, and writing the final report. R.M: Designing the intervention protocol. A.Z: Drafting the manuscript and data. M.R: Writing the manuscript and case selection. All authors: Reading and approving the final.

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