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Effectiveness of Mindful Parenting Training on Parenting Stress and Emotional Self-Regulation in Mothers of Children with Oppositional Defiant Disorder

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ABSTRACT

Purpose: The objective of this study was to examine the effectiveness of mindful parenting training on parenting stress and emotional self-regulation in mothers of children diagnosed with oppositional defiant disorder (ODD).

Methods and Materials: This study employed a quasi-experimental design with pre-test–post-test and a control group. The statistical population included all mothers of children diagnosed with oppositional defiant disorder who had referred to counseling centers in Tehran. After initial screening and matching, participants were randomly assigned to either the experimental or control group. Standardized questionnaires on parenting stress and emotional self-regulation were utilized as data collection tools.

Findings: The results of covariance analysis and repeated-measures ANOVA indicated that the educational intervention led to a significant reduction in parenting stress, improvement in emotional self-regulation, and an increase in psychological capital in the experimental group compared to the control group. Moreover, the observed changes in the variables were significantly explained by the educational intervention, demonstrating the effectiveness of mindful parenting training on the mental health of mothers of children with behavioral disorders.

Conclusion: Mindful parenting is effective in reducing parenting stress and enhancing emotional self-regulation in mothers of children with oppositional defiant disorder.

Keywords: *Mindful Parenting, Parenting Stress, Emotional Self-Regulation, Mothers, Oppositional Defiant Disorder*

1. Introduction

Parenting a child with Oppositional Defiant Disorder (ODD) presents complex emotional and behavioral challenges that place a considerable psychological burden on caregivers, particularly mothers. ODD is characterized by patterns of defiant, disobedient, and hostile behaviors toward authority figures, which often manifest in early childhood and persist across developmental stages, severely impacting family dynamics and parental mental health. The chronic stress associated with managing such behaviors frequently disrupts parental emotional regulation, diminishes parenting efficacy, and weakens the parent-child relationship (Ghazanfari et al., 2017; Moradiyani Gizeh Rod et al., 2016). In this context, parenting stress is not merely a response to situational challenges but is intricately linked to broader psychological vulnerabilities, including anxiety, emotional dysregulation, and self-critical tendencies (Moreira & Canavarro, 2018). These factors necessitate evidence-based interventions capable of enhancing parental resilience and emotional flexibility.

Mindful parenting has emerged as a promising intervention paradigm rooted in mindfulness-based cognitive and behavioral theories. It integrates traditional mindfulness principles—such as present-moment awareness, non-judgmental observation, and emotional acceptance—into parenting practices (Bögels et al., 2014). The core assumption of mindful parenting is that increased awareness and emotional regulation among caregivers can transform reactive parenting styles into more adaptive, empathetic, and intentional responses, ultimately improving child outcomes and parental well-being (Cheung & Wang, 2022; Gouveia et al., 2016). The integration of mindfulness into parenting has shown significant potential in alleviating psychological distress in parents of children with behavioral disorders. For instance, Atar and colleagues (2024) demonstrated that mindful parenting interventions can reduce parenting stress and loneliness while strengthening the emotional bond between parents and children (Atar et al., 2024).

The relevance of mindful parenting becomes especially salient when addressing mothers of children with ODD. These mothers are often exposed to sustained stressors and emotionally taxing interactions, which may intensify impulsive and maladaptive emotional responses (Chaplin et al., 2021). Shorey and Ng's (2021) meta-analysis supports the efficacy of mindful parenting interventions across diverse populations, reporting consistent reductions in

parenting stress and increases in emotional regulation skills among caregivers (Shorey & Ng, 2021). Mindful parenting fosters self-compassion and reduces experiential avoidance, providing parents with cognitive and emotional tools to navigate the complex realities of raising children with externalizing disorders (Bondar Kakhki et al., 2019). This is particularly significant for mothers of children with ODD, who tend to experience elevated levels of guilt, frustration, and relational conflict (Elgendy et al., 2020).

Mindful parenting interventions have also been shown to mediate the relationship between parenting stress and child adjustment outcomes. Cheung and Wang (2022) found that mindful parenting buffered the negative impact of maternal stress on child socio-emotional functioning during the COVID-19 pandemic, suggesting that this approach not only benefits caregivers but also contributes to healthier developmental trajectories for children (Cheung & Wang, 2022). These findings are corroborated by Moreira and Canavarro (2018), who reported that self-critical rumination and high parenting stress were effectively moderated by mindful parenting strategies, highlighting the cognitive-emotional mechanisms through which mindfulness exerts its influence (Moreira & Canavarro, 2018). Furthermore, research by Badiie et al. (2021) showed that mindful parenting training significantly improved emotion regulation and behavioral inhibition among parents of anxious children, reinforcing the cross-diagnostic applicability of this model (Badiie et al., 2021).

Within the Iranian context, multiple studies have validated the effectiveness of mindful parenting interventions in reducing distress and enhancing parenting efficacy. Aghaziarati et al. (2023) observed substantial improvements in both cognitive and behavioral components of emotion regulation in mothers of children with hearing impairments following mindful parenting training, emphasizing its relevance in culturally specific contexts (Aghaziarati et al., 2023). Similarly, Babaei Motlagh and Tanha (2023) compared mindfulness-based and choice-theory-based parenting models, concluding that the former was more effective in reducing psychological distress among mothers of children with ODD (Babaei Motlagh & Tanha, 2023). These results are supported by Eslami et al. (2023), who found that mindful parenting enhances emotional regulation and fosters secure attachment, which is often impaired in families coping with behavioral disorders (Eslami et al., 2023).

From a developmental psychopathology perspective, mindful parenting offers a dual-pathway mechanism for

intervention: it targets maladaptive cognitive-affective schemas in parents and concurrently improves dyadic processes that shape child behavior. Smith et al. (2023) highlighted the role of paternal emotion regulation and mindful parenting in fostering adolescent attachment quality, suggesting that the benefits of such interventions extend beyond the early childhood years (Smith et al., 2023). This multidimensional impact is echoed in the findings of Bögels et al. (2014), whose comprehensive study on mindful parenting in clinical populations revealed improvements across various domains, including parental stress, co-parenting quality, and child psychopathology (Bögels et al., 2014).

The role of emotion regulation is central to the success of mindful parenting. Parents of children with ODD often report deficits in emotional clarity, impulse control, and emotional acceptance—all of which are directly targeted by mindfulness practices (Dehghani et al., 2022). The structured delivery of mindful parenting, typically in an 8-session format, incorporates meditation, emotion tracking, and non-reactive parenting exercises, enabling caregivers to pause and respond thoughtfully rather than reactively to their child's oppositional behaviors (Atar et al., 2024). This reorientation in parental behavior not only reduces household conflict but also promotes emotional security in the child (Chaplin et al., 2021).

The benefits of mindful parenting in families of children with ODD are not limited to psychological stress reduction. Ghazanfari et al. (2017) documented reductions in anxiety, parent-child conflict, and improvements in parenting self-efficacy among mothers who received mindfulness-based training, further confirming the intervention's multifaceted value (Ghazanfari et al., 2017). Moradiyani Gizeh Rod et al. (2016) also found significant decreases in maternal depression and aggression, emphasizing the emotional stabilization role of mindfulness in high-risk parenting contexts (Moradiyani Gizeh Rod et al., 2016). When integrated with psychoeducational and attachment-based strategies, mindful parenting appears to offer a uniquely comprehensive framework for supporting maternal well-being.

In sum, the present study builds upon a substantial body of research indicating that mindful parenting is an effective intervention for mothers of children with ODD. By targeting core emotional and cognitive vulnerabilities—such as poor emotion regulation, high parenting stress, and maladaptive coping—this intervention has the potential to generate significant improvements in both caregiver and child

functioning. The theoretical and empirical foundations presented underscore the need for rigorous implementation of mindful parenting in both clinical and community-based settings. This study aims to evaluate the effectiveness of mindful parenting program in reducing parenting stress and enhancing emotional self-regulation in mothers of children diagnosed with ODD.

2. Methods and Materials

2.1. Study Design and Participants

This study is an applied research project, aimed at addressing practical challenges in the domain of parenting by utilizing evidence-based psychological findings. The research employed a quasi-experimental design with a pre-test–post-test structure and a control group. The statistical population consisted of all mothers of children aged 4 to 6 years diagnosed with Oppositional Defiant Disorder (ODD), who had referred to specialized child psychology and counseling centers in Tehran in 2024. Based on prior research and given the nature of the study, a sample size of 30 participants was determined. Participants were selected through multi-stage cluster random sampling and randomly assigned to two equal groups: an experimental group and a control group. The inclusion criteria for participation included (1) a definitive diagnosis of ODD by a clinical psychologist based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), (2) the child's age falling within the 4 to 6-year range, (3) the mother's willingness and informed consent to participate in the intervention sessions and assessments, and (4) the family's residence within the municipal boundaries of Tehran.

Following the acquisition of all necessary ethical approvals and administrative permits, eligible participants were selected and randomly assigned to either the experimental or control group. Both groups completed the research instruments as pre-tests prior to the intervention. The experimental group then received the mindful parenting training intervention over eight sessions, while the control group received no intervention during the same period. Upon completion of the training, both groups were assessed again using the same measurement tools.

2.2. Measures

2.2.1. Parenting Stress

The Parenting Stress Index–Short Form (PSI-SF) developed by Abidin (1990) was used to assess parenting-related stress. This instrument was created in response to the need for a psychometrically sound measure to evaluate stress within the parent–child relationship. Drawing from a theoretical framework that views parental stress as a function of the child's behavioral characteristics, the parent's personality traits, and psychosocial stressors within the family environment directly related to parenting roles, Abidin (1995) structured this scale to include key dimensions of stress. The short form includes 36 items, replicating the exact wording of the items in the 101-item long form. It measures three distinct subscales: Parental Distress (items 1–12), Dysfunctional Parent–Child Interaction (items 13–24), and Difficult Child Characteristics (items 25–36). A total stress score is also calculated by summing all item responses. Each item is rated on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree), with higher scores reflecting lower levels of experienced parental stress. In the Iranian context, psychometric validation of the PSI-SF was conducted by Shirzadi, Faramarzi, Ghasemi, and Shafiee (2014), who reported Cronbach's alpha coefficients ranging from 0.59 to 0.86, and test–retest reliability coefficients between 0.92 and 0.97 over a 16-day period.

2.2.2. Emotion Regulation

The Difficulties in Emotion Regulation Scale (DERS) developed by Gratz and Roemer (2004) was utilized to assess emotional self-regulation. This multidimensional self-report measure consists of 36 items rated on a 5-point Likert scale and is designed to assess an individual's typical levels of emotion dysregulation. It yields a total score, ranging from 36 to 180, with higher scores indicating greater difficulties in emotional regulation. The scale comprises six subscales: Non-Acceptance of Emotional Responses (items 11, 12, 21, 23, 25, 29), Goals (items 13, 18, 20, 26, 33), Impulse Control Difficulties (items 3, 14, 19, 24, 27, 32), Lack of Emotional Awareness (items 2, 6, 8, 10, 17, 34), Limited Access to Emotion Regulation Strategies (items 15, 16, 22, 28, 30, 31, 35, 36), and Lack of Emotional Clarity (items 4, 5, 7, 9). Although it offers an overall index of emotion regulation difficulty, the scale is primarily focused on identifying deficits in emotional self-regulation.

According to Gratz and Roemer (2004), the DERS captures multiple distinct dimensions of emotion dysregulation and is widely used in clinical and developmental research settings.

2.3. Intervention

The 8-session Mindful Parenting Curriculum (MPC) was developed based on established theoretical frameworks including Jon Kabat-Zinn's mindfulness theory, attachment theory, the mindful parenting model, and the psychological capital framework. The intervention targeted mothers of children aged 4 to 6 years diagnosed with Oppositional Defiant Disorder (ODD). Sessions were conducted once a week, each lasting 90 minutes, and followed a consistent four-part structure: review of the previous session, theoretical instruction and experiential practice, group discussion and reflective sharing, and assignment of home practices. The overarching goals of the program were to reduce parenting stress, enhance emotional self-regulation, increase psychological capital (hope, optimism, resilience, self-efficacy), and improve the quality of parent–child interaction. Session one introduced foundational mindfulness principles, including present-moment awareness and non-judgmental observation, with exercises such as mindful breathing and thought journaling. Session two focused on emotional awareness in parenting, teaching strategies to recognize and regulate emotional responses using the STOP technique. Session three emphasized acceptance without judgment, encouraging participants to embrace imperfection in themselves and their children, complemented by mindfulness meditation practices. Session four aimed to strengthen empathetic listening, with techniques for active, non-interruptive, and mindful communication with the child. Session five addressed anger and impulse control, introducing breathing and pause strategies to manage reactive behaviors. Session six was dedicated to mindful self-care and self-compassion, emphasizing the importance of self-kindness in sustaining effective parenting. Session seven provided strategies for applying mindfulness during challenging child behaviors, especially in response to ODD symptoms, using case simulations and real-life application. Session eight reviewed all previously learned skills, consolidated behavioral changes, and supported the development of a personalized plan for continued mindful parenting practice post-intervention. Supporting materials included daily practice journals, guided meditation audio files, exercise worksheets,

and structured instruction sheets to facilitate at-home integration of each session's content.

2.4. Data Analysis

To analyze the data, analysis of covariance (ANCOVA) was conducted to compare the post-test scores between groups while statistically controlling for the pre-test scores. The assumptions of normal distribution and homogeneity of

regression slopes were examined and satisfied before performing ANCOVA.

3. Findings and Results

To examine the effectiveness of mindful parenting training on parenting stress and emotional self-regulation, descriptive statistics and ANCOVA analyses were conducted.

Table 1

Descriptive Statistics of Parenting Stress and Emotional Self-Regulation by Group (Pre-test and Post-test)

Variable	Group	Pre-test M (SD)	Post-test M (SD)
Parenting Stress	Experimental	94.82 (6.45)	76.13 (5.29)
	Control	93.97 (6.68)	92.21 (6.13)
Emotional Self-Regulation	Experimental	132.44 (7.51)	108.62 (6.03)
	Control	130.89 (6.88)	129.55 (6.27)

As shown in Table 1, participants in the experimental group demonstrated notable changes between pre-test and post-test. The mean parenting stress score for the experimental group decreased from 94.82 (SD = 6.45) at pre-test to 76.13 (SD = 5.29) at post-test, while the control group showed only a marginal change from 93.97 (SD = 6.68) to 92.21 (SD = 6.13). Regarding emotional self-regulation, the experimental group improved significantly, with scores reducing from 132.44 (SD = 7.51) to 108.62 (SD = 6.03), indicating reduced emotional dysregulation. In contrast, the control group had minimal change, with scores moving from 130.89 (SD = 6.88) to 129.55 (SD = 6.27).

Prior to conducting the main analysis, all necessary statistical assumptions for analysis of covariance (ANCOVA) were thoroughly examined and confirmed to

ensure the validity of the results. The assumption of normality was tested using the Shapiro-Wilk test, and the results indicated that the distribution of the dependent variables did not significantly deviate from normality. Additionally, the homogeneity of variances across groups was assessed using Levene's test, which showed no significant difference, confirming the assumption of equal variances. The assumption of homogeneity of regression slopes, which ensures that the relationship between the covariate (pre-test scores) and the dependent variable (post-test scores) is consistent across groups, was also tested and met, as indicated by the non-significant interaction between the covariate and group variable. These findings collectively confirmed that the data met the key statistical assumptions required for the valid application of ANCOVA.

Table 2

ANCOVA Results for Parenting Stress and Emotional Self-Regulation (Post-test Scores with Pre-test as Covariate)

Variable	SS	df	MS	F	p	η^2
Parenting Stress	1428.75	1	1428.75	39.62	<.001	.586
Emotional Self-Regulation	1786.34	1	1786.34	44.51	<.001	.612

The ANCOVA results in Table 2 show a statistically significant effect of the intervention on both parenting stress and emotional self-regulation after controlling for pre-test scores. For parenting stress, the intervention had a significant effect, $F(1, 27) = 39.62$, $p < .001$, with a large effect size ($\eta^2 = .586$). Similarly, for emotional self-regulation, the training significantly improved outcomes, $F(1, 27) = 44.51$, $p < .001$, also reflecting a large effect size

($\eta^2 = .612$). These findings confirm that the mindful parenting program significantly reduced parenting stress and improved emotional self-regulation in the experimental group compared to the control group.

4. Discussion and Conclusion

The present study aimed to examine the effectiveness of an 8-session mindful parenting training program in reducing

parenting stress and improving emotional self-regulation among mothers of children diagnosed with Oppositional Defiant Disorder (ODD). The findings, based on descriptive statistics and ANCOVA, indicated that the intervention significantly decreased parenting stress and improved emotional self-regulation in the experimental group compared to the control group. These results support the growing body of evidence suggesting that mindful parenting is a powerful, multidimensional intervention for caregivers coping with behavioral disorders in children.

The reduction in parenting stress observed in this study aligns with several previous investigations demonstrating the efficacy of mindfulness-based interventions in improving parental psychological well-being. Atar et al. (2024) showed that mindful parenting significantly reduced parenting stress and loneliness while enhancing the parent-child relationship, particularly among mothers of children with emotional and behavioral difficulties (Atar et al., 2024). Similarly, Chaplin et al. (2021) found that highly stressed mothers of adolescents experienced marked decreases in stress and improvements in parenting quality following mindfulness-based interventions (Chaplin et al., 2021). Our findings also align with the results of Ghazanfari et al. (2017), who reported that mothers of children with ODD exhibited lower anxiety levels and fewer parent-child conflicts after completing mindfulness-based training (Ghazanfari et al., 2017). The consistency of these findings across diverse contexts underscores the robust stress-reducing potential of mindful parenting, particularly for mothers experiencing chronic child-related stressors.

Emotional self-regulation significantly improved in the experimental group, suggesting that the intervention effectively enhanced participants' ability to manage and respond to emotional experiences in adaptive ways. This outcome is particularly noteworthy given that emotional dysregulation is a central risk factor in negative parenting behaviors and can exacerbate child behavioral problems. The results are supported by Badiee et al. (2021), who demonstrated that mindful parenting improved emotion regulation and behavioral inhibition in parents of anxious children (Badiee et al., 2021). Likewise, Eslami et al. (2023) found that mindful parenting strengthened emotion regulation and secure parent-child attachment while reducing aggression in preschool-aged children (Eslami et al., 2023). The observed improvements in our study are consistent with Gouveia et al. (2016), who concluded that dispositional mindfulness and self-compassion are linked to more effective parenting styles and lower stress through the

mediating role of mindful parenting (Gouveia et al., 2016). These converging findings indicate that mindful parenting fosters internal emotional resources, enabling parents to adopt more reflective and emotionally attuned interactions with their children.

The mechanisms through which mindful parenting exerts its effects have been increasingly studied, and our results support existing theoretical models. Bögels et al. (2014) conceptualized mindful parenting as involving intentional awareness of parenting experiences, self-regulation, and non-judgmental acceptance of both self and child (Bögels et al., 2014). These dimensions appear to be particularly relevant for mothers of children with ODD, who often face emotionally charged and oppositional interactions. The training in our study emphasized these core principles, including mindfulness meditation, emotion labeling, active listening, and non-reactive responses, which likely contributed to reductions in stress and improvements in emotional functioning. Moreover, the findings echo those of Shorey and Ng (2021), whose meta-analysis confirmed that mindful parenting interventions consistently yield medium-to-large effect sizes for parental stress reduction and emotional regulation improvement across diverse clinical populations (Shorey & Ng, 2021).

The specific focus on mothers of children with ODD is a valuable contribution of this study, given the distinct parenting challenges associated with the disorder. Children with ODD often exhibit argumentative, defiant, and vindictive behaviors that significantly elevate parenting stress and reduce maternal self-efficacy. Cheung and Wang (2022) demonstrated that mindful parenting served as a mediator between maternal stress and child adjustment, further emphasizing the intergenerational transmission of emotional regulation strategies (Cheung & Wang, 2022). Our findings affirm that enhancing maternal emotional competence through mindfulness training can disrupt this negative cycle. Similarly, Moreira and Canavarro (2018) found that self-critical rumination in mothers was linked to higher parenting stress, and mindful parenting buffered this relationship, indicating its role in modifying maladaptive cognitive-emotional patterns (Moreira & Canavarro, 2018).

This study also reinforces the applicability of mindful parenting within the Iranian cultural context. Aghaziarati et al. (2023) reported that mindful parenting training significantly improved emotion regulation in mothers of children with hearing impairments, highlighting its cultural adaptability and relevance (Aghaziarati et al., 2023). Babaei Motlagh and Tanha (2023) showed that mindfulness-based

parenting was more effective than choice theory-based parenting in reducing psychological distress among mothers of children with ODD (Babaei Motlagh & Tanha, 2023). The current findings provide further support for mindful parenting as a culturally flexible and evidence-based approach suitable for Iranian families facing behavioral challenges.

Furthermore, Dehghani et al. (2022) compared a mindfulness-based stress reduction program with a parent-child interaction modification program and found both to be effective in reducing symptoms of ADHD and ODD, suggesting that mindfulness can be a valuable component in multimodal treatment plans (Dehghani et al., 2022). Elgendy et al. (2020) also highlighted that parents of children with ADHD experienced lower stress levels and better emotional outcomes when practicing mindful parenting techniques (Elgendy et al., 2020). Our findings contribute to this literature by demonstrating that mindful parenting is not only beneficial in reducing stress but also significantly enhances emotional resilience, making it a potentially core element of psychosocial support programs for parents.

Interestingly, the findings of this study also resonate with the broader literature emphasizing the role of fathers and co-parenting dynamics in family emotional health. Smith et al. (2023) demonstrated that fathers' emotional regulation and mindful parenting behaviors predicted better adolescent attachment outcomes, suggesting that mindful parenting has beneficial implications beyond maternal populations and across developmental stages (Smith et al., 2023). While our study focused solely on mothers, the inclusion of fathers in future interventions may amplify the observed outcomes and contribute to systemic family improvements.

Lastly, the work of Bondar Kakhki et al. (2019) supports our conclusions by showing that mindful parenting improves self-compassion and reduces experiential avoidance in stressed mothers, ultimately increasing parental mindfulness (Bondar Kakhki et al., 2019). These internal psychological resources are crucial in helping parents navigate the emotional volatility that often accompanies parenting a child with ODD. Our study reaffirms this pathway and underscores the importance of targeting both intrapersonal and interpersonal processes in parent-focused interventions.

Despite its promising findings, this study is not without limitations. First, the sample size was relatively small ($n=30$), which may limit the generalizability of the results to broader populations. The study also relied on self-report measures, which are subject to biases such as social desirability and recall errors. Additionally, only mothers

were included in the study, leaving out the potentially significant role of fathers or other caregivers. The lack of long-term follow-up also restricts our ability to determine the durability of the observed improvements in parenting stress and emotional regulation.

Future studies should consider larger, more diverse samples that include both mothers and fathers to explore the potential differential effects of mindful parenting across caregiver roles. It is also recommended to implement longitudinal designs to assess the long-term impact of mindfulness-based parenting interventions on both parental and child outcomes. Investigating the neurocognitive mechanisms underlying changes in emotional regulation and stress responses through psychophysiological or neuroimaging methods could deepen the understanding of how these interventions work. Comparative studies between mindfulness-based approaches and other evidence-based parenting programs would also provide insight into relative effectiveness.

In practical terms, the findings of this study suggest that mindful parenting programs should be integrated into clinical and community mental health services that support families of children with behavioral disorders. Training professionals in delivering structured mindful parenting curricula can enhance access to these interventions. Schools, pediatric clinics, and counseling centers can also play a critical role in identifying families in need and referring them to appropriate resources. Finally, including mindfulness-based parenting strategies in parent education programs can empower caregivers with tools to manage stress and build emotionally responsive relationships with their children.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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