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The Relationship Between Mindful Parenting and Parental Burnout in Mothers of Children with Attention-deficit Hyperactivity Disorder

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Abstract

Aim: Parental burnout is common among mothers of children with attention deficit hyperactivity disorder (ADHD); however, evidence regarding protective psychological factors is limited. This study aimed to examine mindful parenting and child symptom severity as determinants of burnout among mothers of children with ADHD.

Methods: This cross-sectional study included mothers of 127 children diagnosed with ADHD. The Mindfulness in Parenting Questionnaire (MIPQ), Maslach Burnout Inventory (MBI), and Children and Adolescent Behavior Inventory were administered to the participants. Associations were examined using correlation analyses, followed by multiple linear regression models to identify the determinants of maternal burnout dimensions.

Results: Mindfulness in Parenting Questionnaire-parental self-efficacy (MIPQ-PSE) and being in the moment with the child (MIPQ-BMC) were negatively correlated with depersonalization (MBI-DP) and emotional exhaustion (MBI-EE) and positively correlated with personal accomplishment (MBI-PA) ($p < 0.05$). Hyperactivity-impulsivity and attention deficit were positively correlated with MBI-EE and MBI-DP, and negatively correlated with MBI-PA ($p < 0.05$). Regression analysis showed that MIPQ-PSE negatively predicted MBI-EE and MBI-DP, whereas hyperactivity-impulsivity positively predicted them ($p < 0.05$). Maslach Burnout Inventory-personal accomplishment was positively predicted by MIPQ-PSE and MIPQ-BMC and negatively predicted by attention deficit ($p < 0.05$).

Conclusion: Mindful parenting is associated with reduced maternal burnout. Interventions that promote mindfulness have the potential to mitigate burnout among mothers of children with ADHD.

Keywords: Attention deficit-hyperactivity disorder, mindfulness, parenting, burnout

Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental condition that begins in childhood and is characterized by a decreased attention span, impulsivity, and hyperactivity (1). The global prevalence in children and adolescents ranges between 3% and 7.6% (2,3), and it is one of the most common childhood psychiatric disorders (4). Children with ADHD tend to

behave less collaboratively and exhibit more negative behavior than their peers. This causes parents to face greater difficulty in coping with damaging behaviors that emerge in such settings as school, the home, or the social environment (5). A child with ADHD behaving in a manner such as to require constant observation and intervention can gradually lead to the development of burnout symptoms by depleting the parent's psychological

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resources (6). Studies have shown that symptoms such as chronic stress, mental problems, and burnout are more common in the parents, particularly mothers, of children diagnosed with ADHD (6,7). However, existing research has predominantly emphasized child-related risk factors, while psychological resources that may buffer parental burnout remain unexplored. In recent years, the concept of mindfulness in parenting has emerged as a potential protective psychological resource (8,9).

Mindfulness in parenting involves responding to the child's behavior with awareness rather than an emotional reaction, understanding the child's need in an empathetic manner, and being a more conscious entity in parent-child interactions (10). Mindfulness in parenting can reduce adverse experiences such as impatience, hopelessness, and burnout by increasing parental emotional regulation (11). Research shows that a high degree of mindfulness can help parents develop more effective strategies for coping with their children's difficult behavior and that they will experience less parental stress and will be able to establish more positive parent-child relationships (12,13). From that perspective, a high level of mindfulness in parenting can also be regarded as an important protective factor against parental burnout (14). Although the effects of ADHD symptom severity on parental burnout have been examined within the framework of risk factors, the combined contribution of mindful parenting and child symptom severity to maternal burnout has not been adequately investigated. We hypothesized that higher levels of mindful parenting are associated with lower maternal burnout, whereas greater severity of child ADHD symptoms is associated with higher maternal burnout.

The present study aimed to examine mindful parenting and the severity of child symptoms as determinants of burnout in mothers of children with ADHD. By addressing both risk and protective factors, this study aims to provide clinically relevant evidence to inform supportive interventions for mothers of children with ADHD.

Materials and Methods

Compliance With Ethical Standards

The study was completed with 127 participants. Approval for the study was granted by the Alanya Alaaddin Keykubat University Faculty of Medicine Clinical Research Ethics Committee (approval no.: 02-08, date: 22.01.2025). This study was conducted in accordance with the principles of the Declaration of Helsinki. The purpose of the study was explained to the participants before commencement, and written and verbal consent was obtained from all participants.

Study Design and Population

This was a cross-sectional study. The participants were mothers of children aged 6-18 who presented to the Alanya Education and Research Hospital Child and Adolescent Psychiatry Clinic, Türkiye, and who were diagnosed with ADHD. Participants were consecutively recruited according to their order of presentation at the clinic. The sample size was determined based on the number of eligible participants who attended the clinic during the study period. The study included 149 mothers of children diagnosed with ADHD. All children included in the study had a confirmed diagnosis of attention-deficit/hyperactivity disorder and were receiving ongoing ADHD treatment at the time of assessment. None of the children had been newly diagnosed. All children underwent psychiatric evaluation based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision. Comorbid psychiatric and chronic diseases in children were adopted as exclusion criteria since these might create independent effects on maternal burnout. Twenty-two children with comorbid psychiatric and chronic disorders were excluded. Children with chronic diseases such as neurological, genetic, or metabolic disorders and their siblings were also included (Figure 1).

Psychometric Instruments

The study data were collected through face-to-face interviews with mothers at the time of presentation to the clinic. The mothers of children/adolescents diagnosed with ADHD were administered a sociodemographic data form, the Mindfulness in Parenting Questionnaire (MIPQ), and the Maslach Burnout Inventory (MBI). The Children and Adolescent Behavior Inventory (CABI)-parent version was used to assess the severity of children's ADHD.

Mindfulness in Parenting Questionnaire: This 28-item Likert-type scale was developed by McCaffrey et al. (15) to evaluate mindfulness in parent-child interaction. It was adapted into Turkish by Gördesli et al. (16), resulting in 24 items and two subdimensions, parental self-efficacy (MIPQ-PSE) and being in the moment with the child (MIPQ-BMC), which were obtained in the validity and reliability study. The MIPQ has no cut-off point. Mindfulness levels were evaluated based on the subdimensions. Higher scores indicate higher levels of mindfulness.

Maslach Burnout Inventory: The MBI is a 22-item Likert-type scale developed by Maslach and Jackson (17) to measure individuals' burnout levels. The validity and reliability of the MBI were confirmed by Ergin (18). It consists of three subscales: emotional exhaustion (MBI-EE), depersonalization (MBI-DP), and personal accomplishment (MBI-PA). The EE and DP subscales contain negative responses, whereas the PA subscale contains positive responses. The MBI has no cut-off point.

Children and Adolescent Behavior Inventory-Parent Version: This scale was developed by Burns et al. (19). The validity and reliability study for Turkish was performed by Çiftçi et al. (20). CABI consists of 67 items and nine subscales: sluggish cognitive tempo, anxiety disorder, depressive disorder, attention deficit, hyperactivity-impulsivity, oppositional-defiant disorder, emotionless personality traits, social disorder, and academic impairment. The CABI is a continuous scale with no cutoff points. The total score was the sum of the subscale item scores. Higher total scores indicate greater symptom severity. Attention-deficit and hyperactivity-impulsivity subscales were employed in the present study.

Statistical Analysis

Statistical analyses were performed using the Jamovi, version 26.0 (Jamovi Project, Sydney, Australia). Participants' sociodemographic data were summarized using descriptive statistics (frequencies and percentages). Skewness, kurtosis, and graphical methods (histogram and Q-Q plot) were used together to evaluate the distribution characteristics of the scale scores. Skewness and kurtosis values between -1 and +1 were regarded as consistent with normal distribution (21). The internal consistency of the scales was evaluated using Cronbach's alpha. Cronbach's alpha values of 0.70 and above indicate an acceptable level of internal consistency. Pearson's correlation analysis (for normally distributed data) and Spearman's rank correlation coefficient (for non-normally distributed data) were used to examine correlations between variables. The independent sample t-test was applied to compare paired groups exhibiting a normal distribution, and one-way analysis of variance was used for multiple groups. In the case of non-normal distribution, the Mann-Whitney U test was applied for pairwise group comparisons, and the Kruskal-Wallis H test was used for comparisons among multiple groups. The MBI-EE, MBI-DP, and MBI-PA subscales were used as the dependent variables for the primary aim of the research. Multiple linear regression analyses were applied separately to each of these three subscales. For each analysis, child-related variables (gender, age, duration of treatment, level of attention deficit, and level of hyperactivity-impulsivity) and parent-related variables (MIPQ subscales) were included in the model as predictors. The model hypotheses were tested using regression analyses. The normality of the distribution of errors was examined using histograms and P-P plots. The regression scatter plot and Durbin-Watson values (1.5-2.5) were examined to assess the assumption of homoscedasticity. Multicollinearity was assessed using the variance inflation factor (VIF) ($VIF < 10$). Pre-test examination revealed that these assumptions were not violated. P-values < 0.05 were regarded as significant for all analyses.

Results

The study included mothers of 127 children with ADHD. The majority of the children were male (73.2%), and most were firstborn (63.0%). Nearly half (47.2%) of the families had two children. Approximately one-third of the mothers had primary education (33.9%), high school education (33.1%), or university-level education (33.1%). More than half of the mothers were unemployed (52.8%), and most families had a nuclear family structure (84.3%). Burnout subscale scores (EE, DP, and PA) did not differ significantly across sociodemographic characteristics (all $p > 0.05$).

Correlation analyses revealed significant positive associations between attention deficit levels and both EE ($r = 0.409$, $p < 0.001$) and DP ($r = 0.407$, $p < 0.001$). Similarly, hyperactivity-impulsivity symptoms were positively correlated with EE ($r = 0.442$, $p < 0.001$) and DP ($r = 0.383$, $p < 0.001$) and negatively correlated with PA ($r = -0.192$, $p = 0.030$) (Table 1). Significant correlations were also observed between parental mindfulness and burnout. The MIPQ-PSE subdimension was negatively correlated with EE ($r = -0.319$, $p < 0.001$) and DP ($r = -0.352$, $p < 0.001$) and positively correlated with PAPA ($r = 0.426$, $p < 0.001$). Similarly, the MIPQ-BMC subdimension exhibited a significant positive correlation with PA ($r = 0.455$, $p < 0.001$) (Table 1).

In the multiple linear regression analysis performed to identify variables predicting maternal burnout levels, the ages of the child and the mother, the sex of the child, duration of treatment, attention deficit, hyperactivity-impulsivity, PSE, and BMC were included in the study. The model in which EE (MBI-EE) was the dependent variable was significant [$F(8,118) = 7.52$, $R^2 = 0.293$, $p < 0.001$]. Hyperactivity-impulsivity levels emerged as a significant and positive predictor of EE ($\beta = 0.369$, $p < 0.001$). The MIPQ-PSE was a significant negative predictor of EE ($\beta = -0.347$, $p < 0.001$) (Table 2).

Regression analysis of the model in which the MBI-DP subscale was the dependent variable was successful [$F(8,118) = 7.31$, $R^2 = 0.286$, $p < 0.001$]. Hyperactivity-impulsivity was a significant positive predictor of the DP burnout subscale ($\beta = 0.331$, $p = 0.002$). The MIPQ-PSE was a significant negative predictor of DP ($\beta = -0.335$, $p = 0.001$) (Table 2).

The final model, in which MBI-PA was the dependent variable, was also significant [$F(8,118) = 7.46$, $R^2 = 0.291$, $p < 0.001$]. Attention-deficit levels had a significant negative effect on PA ($\beta = -0.240$, $p = 0.019$). The MIPQ-PSE and MIPQ-BMC significantly and positively predicted PA ($\beta = 0.200$, $p = 0.046$, and $\beta = 0.343$, $p < 0.001$, respectively) (Table 2).

Table 1. Analysis of the measurement tool data and the relationships with burnout sub-dimensions

	Mean±SD median (Q1-Q3)	Skew	Kurt	α	MBI-EE	MBI-DP	MBI-PA
					r (p-value)	r (p-value)	r (p-value)
Child's age	10.18±2.74	0.533	-0.447	-	-0.069 (0.443)	0.037 (0.679)	0.006 (0.946)
Mother's age	38.36±6.28	0.300	-0.303	-	-0.076 (0.393)	0.008 (0.926)	-0.009 (0.921)
Duration of treatment	12 (6-30)	1.717	2.765	-	-0.018* (0.838)	-0.048* (0.590)	0.069* (0.443)
Attention deficit	19.76±10.27	0.319	-0.684	0.909	0.409 (<0.001)	0.407 (<0.001)	-0.320 (<0.001)
Hyperactivity-impulsivity	21.83±12.48	0.209	-0.984	0.931	0.442 (<0.001)	0.383 (<0.001)	-0.192 (0.030)
MIPQ-PSE	42.69±5.97	-0.329	-0.626	0.857	-0.319 (<0.001)	-0.352 (<0.001)	0.426 (<0.001)
MIPQ-BMC	36.02±4.58	-0.277	-0.574	0.747	-0.160 (0.073)	-0.219 (0.014)	0.455 (<0.001)
MBI-EE	9.45±6.28	0.831	0.392	0.815	-	-	-
MBI-DP	5.20±4.33	0.904	0.549	0.793	-	-	-
MBI-PA	24.97±4.64	-0.515	-0.405	0.763	-	-	-

Pearson correlation coefficients were calculated for normally distributed variables, and Spearman rank correlation coefficients were used for non-normally distributed variables. Cronbach's alpha (α) values indicate internal consistency. Statistically significant correlations ($p < 0.05$) are shown in bold. SD: Standard deviation, Skew: Skewness, Kurt: Kurtosis, MBI-EE: Maslach Burnout Inventory-emotional exhaustion, MBI-DP: Maslach Burnout Inventory-depersonalization, MBI-PA: Maslach Burnout Inventory-personal accomplishment, MIPQ-BMC: Mindfulness in Parenting Questionnaire-being in the moment with the child, MIPQ-PSE: Mindfulness in Parenting Questionnaire-parental self-efficacy

Table 2. Regression analysis of factors affecting burnout subscales

DV	Predictor	Estimate	Standardized estimate	95% CI (for standardized estimate)		t	p
				Lower	Upper		
MBI-EE	Child's age	0.186	0.081	-0.142	0.304	0.721	0.472
	Mother's age	-0.113	-0.112	-0.296	0.071	-1.213	0.228
	Sex (Ref: female)	0.046	0.007	-0.333	0.348	0.042	0.966
	Duration of treatment	-0.003	-0.011	-0.198	0.176	-0.116	0.908
	Attention deficit	0.094	0.154	-0.045	0.354	1.534	0.128
	Hyperactivity-impulsivity	0.186	0.369	0.160	0.579	3.486	<0.001
	MIPQ-PSE	-0.365	-0.347	-0.543	-0.151	-3.506	<0.001
	MIPQ-BMC	0.024	0.017	-0.182	0.216	0.172	0.864
F(8-118)=7.52. $p < 0.001$. Adjusted $R^2 = 0.293$							
MBI-DP	Child's age	0.295	0.187	-0.037	0.411	1.655	0.101
	Mother's age	-0.045	-0.065	-0.249	0.120	-0.695	0.488
	Sex (Ref: female)	0.249	0.058	-0.285	0.400	0.334	0.739
	Duration of treatment	-0.016	-0.085	-0.273	0.103	-0.898	0.371
	Attention deficit	0.076	0.179	-0.021	0.380	1.772	0.079
	Hyperactivity-impulsivity	0.115	0.331	0.120	0.542	3.111	0.002
	MIPQ-PSE	-0.243	-0.335	-0.532	-0.138	-3.372	0.001
	MIPQ-BMC	-0.018	-0.019	-0.219	0.181	-0.187	0.852
F(8-118)=7.31. $p < 0.001$. Adjusted $R^2 = 0.286$							
MBI-PA	Child's Age	0.068	0.040	-0.183	0.263	0.355	0.723
	Mother's age	0.013	0.017	-0.167	0.201	0.185	0.853
	Sex (ref: female)	-0.127	-0.028	-0.369	0.314	-0.159	0.874
	Duration of treatment	0.005	0.026	-0.162	0.213	0.270	0.788
	Attention deficit	-0.108	-0.240	-0.440	-0.041	-2.382	0.019
	Hyperactivity-impulsivity	-0.032	-0.085	-0.295	0.125	-0.799	0.426
	MIPQ-PSE	0.155	0.200	0.004	0.396	2.018	0.046
	MIPQ-BMC	0.347	0.343	0.144	0.542	3.412	<0.001
F(8-118)=7.46. $p < 0.001$. Adjusted $R^2 = 0.291$							

Multiple linear regression analysis was performed using the enter method. Standardized estimates (β) with 95% confidence intervals are presented. Model fit is indicated by F statistics and adjusted R^2 values. Statistically significant results ($p < 0.05$) are indicated in bold font. DV: Dependent variable, 95% CI: 95% Confidence interval, MBI-EE: Maslach Burnout Inventory-emotional exhaustion, MBI-DP: Maslach Burnout Inventory-depersonalization, MBI-PA: Maslach Burnout Inventory-personal accomplishment, MIPQ-BMC: Mindfulness in Parenting Questionnaire-being in the moment with the child, MIPQ-PSE: Mindfulness in Parenting Questionnaire-parental self-efficacy

Discussion

This study examined the effects of mindful parenting and child ADHD severity on burnout among mothers of children with ADHD. Previous studies investigating the relationship between mindfulness and burnout in parents are few. To the best of our knowledge, this study is the first to examine the relationship between mindfulness and burnout levels in the mothers of children with ADHD. The study findings show associations among mothers' mindfulness-in-parenting subscales, ADHD symptom severity levels, and burnout levels. In addition, regression analysis showed that higher mindfulness-in-parenting subscale scores and lower attention-deficit symptoms predicted increased PA among mothers. Decreased PSE and increased child hyperactivity-impulsivity predicted EE and DP in mothers. The findings thus support our first hypothesis that maternal burnout levels will decline as mindfulness in parenting increases. They also support our second thesis that maternal burnout levels increase with the severity of ADHD symptoms in children. This study makes a significant contribution to the literature by enhancing our understanding of the factors that affect maternal burnout.

Although several studies have reported that burnout is frequently observed in the mothers of children with ADHD (6,22), those examining the relationship between parental factors and parental burnout are notably limited in clinical ADHD samples. Studies have suggested that imbalances between risk factors and protective factors during the care of children with chronic and mental diseases may lead to the development of burnout among parents (23). This study found that PSE, a sub-dimension of awareness in parenting, negatively predicted EE and DP (sub-dimensions of burnout) and positively predicted PA. This finding aligns with the findings of recent studies examining the relationship between PSE and overall parental burnout in non-clinical samples (14,24,25) and contributes to the existing literature by providing a detailed analysis of the effect of self-efficacy on burnout sub-dimensions. Parental self-efficacy refers to a parent's self-efficacy in the parent-child relationship (26). Parents' beliefs about their competence reported directly influence their vulnerability to burnout (24). In this context, elevated PSE may act as a significant protective factor, enhancing parents' perceived control and coping skills in the face of persistent ADHD-related challenges, thereby reducing vulnerability to burnout and constituting a clinically important target for preventive interventions.

In contrast to the findings related to PSE, the "BMC" sub-dimension of mindful parenting exhibited a more selective pattern of association with burnout. Despite the correlation between being present with the child and DP, this association was no longer significant in the regression

model after controlling for PSE and other variables. This suggests that the effect of being present with the child on DP may be indirect or secondary. Conversely, "BMC" emerged as a robust and independent correlate of PA in both correlation and regression analyses. This pattern suggests that increased mindfulness in parenting during mother-child interactions primarily contributes to the development of positive and rewarding aspects of parenting rather than to the reduction of the negative components of burnout. A preceding study reported a correlation between mindfulness in parenting and mother-child interactions, with parents demonstrating higher levels of mindfulness in their parenting (27). Mothers who demonstrate effective parent-child interaction have been shown to exhibit a higher level of competence in their parenting roles and are thought to experience a greater sense of accomplishment in this role (28). From the perspective of ADHD, it is reported that parents of children with ADHD experience more strained and less satisfying interactions with their children compared to parents of typically developing children (29). Such interactional difficulties may contribute to mothers perceiving themselves as less successful in their parenting role, thereby negatively influencing the PA dimension of burnout. In this context, mindful parenting within the parent-child relationship may selectively support the PA dimension of burnout, even in the presence of ADHD-related challenges.

In addition to parenting-related factors, ADHD symptom dimensions demonstrated differential associations with burnout subdimensions. Hyperactivity-impulsivity was independently associated with EE and DP, suggesting that externally disruptive and dysregulating behaviors may place a substantial emotional burden on mothers. Recent studies have provided evidence that externalizing behavioral problems in children may be related to parental burnout (30-32). From an ADHD perspective, hyperactivity and impulsivity are conceptualized as prominent externalizing behaviors (33). In this context, hyperactivity-impulsivity symptoms may be interpreted as child-related behavioral characteristics that are more closely associated with emotionally taxing aspects of maternal burnout, such as EEEE and DP, rather than with mothers' perceptions of PA in their parenting role. In contrast to hyperactivity-impulsivity, which is associated with the emotionally taxing dimensions of burnout, attention-deficit symptoms demonstrate a distinct pattern of association with burnout. Specifically, attention deficit was independently associated with the PA dimension of maternal burnout. Research has also reported that the problems experienced in academic and daily life skills by children with attention deficits are linked to the mother's feeling of being effective and successful in

her role (34). This distinction underscores the importance of considering ADHD symptom dimensions separately when examining the mechanisms of parental burnout. All the children included in the current study were receiving treatment for ADHD at the time of assessment. This ongoing treatment may have contributed to a relative reduction in attention deficit symptoms. This could affect the independent association between attention-deficit symptoms and mothers' perceptions of PA in multivariate models.

This study found no significant relationship between a child's age and the sub-dimensions of maternal burnout. This differs from previous studies that suggest child age has an effect on parental burnout (35,36). That all children in the current sample were undergoing treatment may have masked the effect of children's age on maternal burnout. However, responses to ADHD treatment vary among children (37). In particular, younger children who respond more favorably to treatment may exhibit more manageable behavioral profiles, which could reduce caregiving demands and mitigate maternal burnout. Accordingly, the lack of an age-burnout association in this study may reflect the moderating influence of treatment response rather than the absence of an age-related effect on burnout.

Study Limitations

Although this is the first study to examine the relationship between mindfulness in parenting and burnout in mothers of children with mental disorders, several limitations should be addressed. First, due to its cross-sectional design, it is not possible to make any definite judgments concerning causal relationships. Second, all data relied on mothers' self-reports, and such subjective measurements may entail a risk of bias and measurement error. Third, fathers' or other caregivers' nonparticipation may have resulted in the multifaceted nature of the parenting process not being sufficiently reflected in the study. Additionally, the relatively modest sample size may limit the generalizability of the findings.

Despite these limitations, the present study has several strengths that should be noted. To our knowledge, this is one of the few studies to examine the relationship between mindful parenting and maternal burnout in a clinical sample of mothers of children with ADHD. Furthermore, the dimension-specific and simultaneous assessment of mindful parenting and ADHD symptom profiles provides a more nuanced understanding of burnout mechanisms and may have clinically significant implications for targeted interventions.

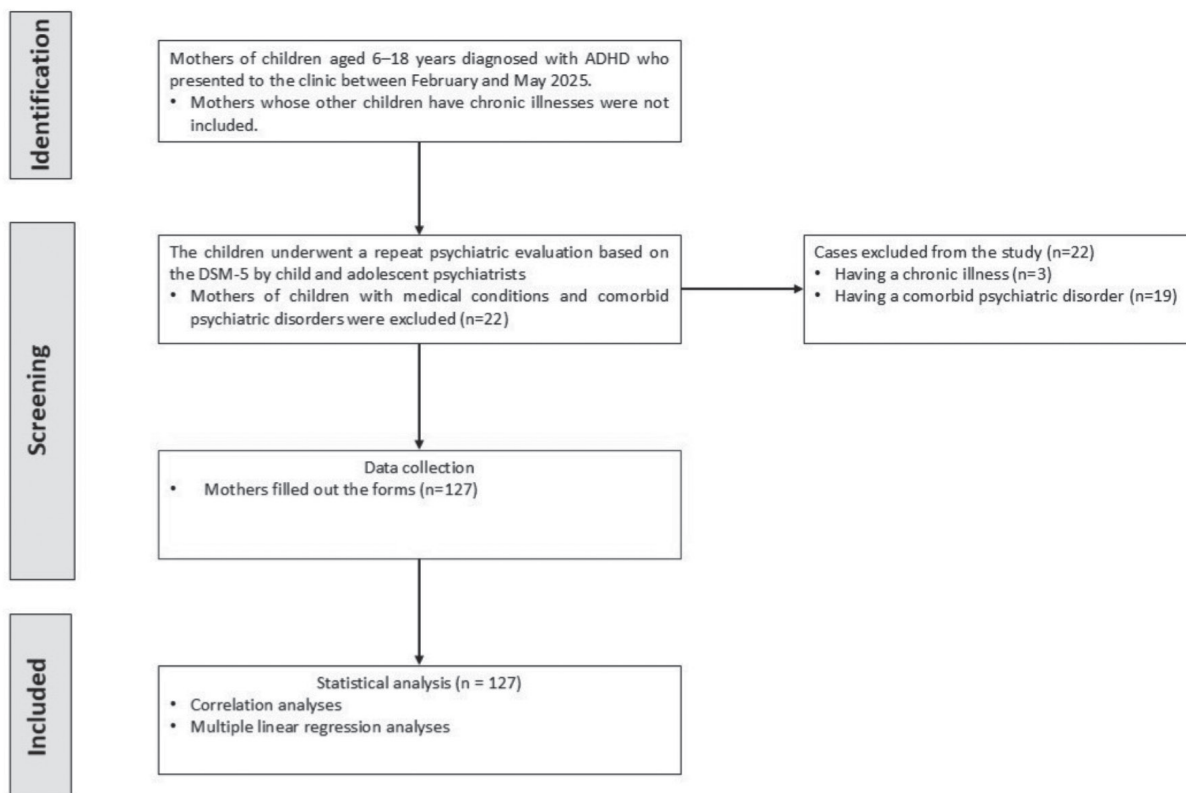


Figure 1. Flowchart of the study
ADHD: Attention deficit hyperactivity disorder

Conclusion

This study revealed significant relationships between mothers' burnout and parenting mindfulness and the severity of their children's ADHD symptoms. The findings show that increased mindfulness in parenting reduces parental burnout. These findings indicate that mindfulness-based parenting intervention programs may be effective in reducing parental burnout. Mindfulness-based approaches and psychoeducational programs aimed at reinforcing parenting experiences may be beneficial in this area. We also believe that further longitudinal and multidimensional studies will yield a more comprehensive analysis of the burnout process by including different parental figures, such as fathers, and external observers, such as teachers or clinicians.

Ethics

Ethics Committee Approval: The study was completed with 127 participants. Approval for the study was granted by the Alanya Alaaddin Keykubat University Faculty of Medicine Clinical Research Ethics Committee (approval no.: 02-08, date: 22.01.2025).

Informed Consent: The purpose of the study was explained to the participants before commencement, and written and verbal consent was obtained from all participants.

Footnotes

Authorship Contributions

Surgical and Medical Practices: O.K., M.S.A., T.K., T.K., P.A.A., Concept: O.K., M.S.A., T.K., Design: O.K., T.K., P.A.A., Data Collection or Processing: O.K., M.S.A., T.K., Analysis or Interpretation: T.K., Literature Search: O.K., P.A.A., Writing: O.K., T.K.

Conflict of Interest: No conflicts of interest were declared by the authors.

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