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The Relationship between Dyadic Adjustment, Attachment Styles, and Parenting Sense of Competence in Parents of children with ADHD

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Abstract

Introduction: This study examined the relationship between attachment styles and parental sense of competence in parents of children with ADHD, with dyadic adjustment as a mediator.
Method: The study employed correlation-based structural equation modeling. Population consisted of parents of children with ADHD in Isfahan in 2021-2022, and 150 couples were selected through convenience sampling. Data were collected using the Parental Sense of Competence Scale (PSOC), Revised Adult Attachment Scale (RAAS) developed by Collins and Read, and Dyadic Adjustment Scale (DAS) developed by Spanier. Data were analyzed using Smart PLS-3.
Results: Dyadic adjustment significantly mediated the relationships of closeness and dependence attachment with parental sense of competence among mothers of children with ADHD. However, the indirect effect of anxious attachment was not significant. Between-group comparisons showed significant differences in the direct relationships of closeness attachment and dyadic adjustment with parental sense of competence, as well as the indirect relationship between dependence attachment and parental sense of competence through dyadic adjustment.
Conclusion: These findings highlight the importance of relational processes in understanding parental sense of competence among parents of children with ADHD. They underscore the role of the couple relationship in shaping parents' experiences of competence when raising a child with ADHD.

Keywords: Children, Attention deficit hyperactivity disorder, Parents' sense of competence, Attachment styles, Dyadic adjustment

Introduction

Attention deficit hyperactivity disorder (ADHD) is one of the most common developmental disorders, affecting approximately 5.9% of children and adolescents worldwide [1]. It is characterized by persistent patterns of inattention, hyperactivity, and impulsivity that typically emerge during childhood [2]. The emotional and behavioral difficulties associated with ADHD can increase parenting demands and stress [3, 4], while the relationship between children's ADHD symptoms and parent–child interactions appears to be bidirectional [5]. Compared with parents of typically developing children, parents of children with ADHD may also experience greater psychological distress and stress, as well as lower parental satisfaction, self-efficacy, and dyadic adjustment [6–16]. These findings highlight the importance of considering both individual and relational factors in understanding parental competence.

Parental sense of competence refers to parents' perceptions of their effectiveness and satisfaction in the parenting role and comprises two related dimensions: parental self-efficacy and parental satisfaction [17–20]. These dimensions may be particularly relevant in the context of ADHD, where persistent behavioral and emotional difficulties can increase parenting demands and challenge parents' perceived effectiveness [4, 21]. Consistent with

this perspective, previous research has reported lower parental sense of competence among parents of children with ADHD compared with parents of typically developing children [14, 18, 22].

Attachment styles are relevant to parenting because they shape how parents perceive, regulate, and respond to interpersonal and parenting demands [23–28]. In families of children with ADHD, where persistent behavioral and emotional difficulties may place greater demands on parents and their relationships with their children, these attachment-related processes may become particularly salient. Parents' attachment styles can influence their expectations of close relationships, emotional responses to parenting challenges, and ways of managing stress, thereby potentially shaping their experiences of parental competence [25, 29]. Accordingly, examining attachment styles among parents of children with ADHD may provide a relational perspective for understanding individual differences in parental competence. Furthermore, the quality of the couple relationship may be relevant to parents' experiences of competence and their ability to manage parenting demands. Dyadic adjustment refers to the degree to which partners adapt to one another and experience satisfaction and effective functioning within their relationship [31]. In families of children with ADHD, the increased demands associated with parenting may place additional strain on the couple relationship, making dyadic adjustment a potentially important relational factor in understanding parental competence [15, 16].

According to research findings, the couples who exhibit a high level of dyadic adjustment tend to experience greater satisfaction with their lives. They also demonstrate higher levels of resilience in the face of stressful situations and exhibit signs of enhanced well-being and self-esteem [32]. Previous studies conducted by Oltra-Benavent et al. [33, 34], Salcuni et al. [34] and Suzuki [35] have consistently shown a positive correlation between couple dynamics and the quality of parenting. Conversely, multiple studies have demonstrated the impact of dyadic adjustment on the attachment style of adults [34, 36-38]. A study conducted by Calvo and Bianco [39] also revealed that attachment insecurities served as significant negative predictors for both the quality of couples' relationships and the parents' sense of competence. In that study, dyadic adjustment emerged as a significant positive predictor of parents' self-esteem. Also, according to Schirl et al. [5], a child's ADHD can be classified as a minor and chronic external stressor for parents, which is an external child-related stressor that arises outside of the relationship between the couple. Considering these findings, the present research aims to investigate the direct and indirect factors that influence the sense of competence in parents of children with ADHD, who face challenging circumstances due to their children's behavioral difficulties. Additionally, it is worth exploring the differences between mothers and fathers in terms of how they behave when dealing with their children's ADHD conditions. As Hevers and Psych [40] indicated, both avoidant and anxious attachment styles had significant negative correlations with fathers' sense of self-efficacy and parental satisfaction. Conversely, Baker [41] postulated that fathers may perceive less attachment and involvement than mothers when dealing with their ADHD-suffering children. Calvo and Bianco [39], found that attachment insecurity negatively predicted both parental competence and relationship quality, whereas dyadic adjustment positively predicted parental self-esteem. These findings prompted an investigation into the distinctions between mothers and fathers within the research framework of the present study. The main research question to answer is 'Can dyadic adjustment serve as a mediating factor in the relationship between the attachment style and the sense of competence for parents of children with attention deficit hyperactivity disorder (ADHD)?' Given the significance of enhancing the well-being of families with children diagnosed with ADHD, as well as the lack of investigations exploring the associations between these variables and potential differences between mothers and fathers, further investigation is warranted. Therefore, this study aims to examine the direct and indirect associations among attachment styles, dyadic adjustment, and parental sense of competence among parents of children with ADHD, with particular attention to potential differences between mothers and fathers.

Method

The study population consisted of parents of children with ADHD who were referred to child psychiatrists in Isfahan, Iran, during the study period. Based on the minimum sample size required for structural equation modeling (SEM) [42], convenience sampling was used to recruit eligible participants who were accessible through the participating clinical settings. A total of 300 parents (150 couples) of children aged 6–15 years participated in the study. Inclusion criteria were having at least one child with a confirmed psychiatric diagnosis of ADHD, consent from both parents to participate, and no previous initiation of pharmacological treatment for the child. Exclusion criteria included parental non-cohabitation, single-parent guardianship, incomplete questionnaires, and a diagnosed comorbid disorder in the child. After reviewing clinical records and obtaining informed consent, eligible parents completed online questionnaires due to COVID-19 restrictions. All instruments had previously demonstrated acceptable validity and reliability in Iranian samples. Ethical approval for the study was obtained from Yazd University (IR.YAZD.REC.1400.039), the researcher's affiliated academic institution, while participants were recruited from clinical settings in Isfahan, Iran. Data were analyzed using SPSS 26 and SmartPLS 3. Descriptive statistics and correlations were calculated, and SEM based on the partial least squares approach was employed to test the proposed model. Reliability and validity were assessed through internal consistency, composite reliability, Dillon–Goldstein's coefficient, AVE, and HTMT indices. The structural model was evaluated using path coefficients, R^2 values, and overall model fit indicators.

Parenting Sense of Competence (PSOC) Questionnaire (1989): This scale was developed by Johnston and Mash [20]. It is a questionnaire consisting of 16 items aimed at assessing parents' emotions and beliefs regarding their parenting abilities. It comprises the two subscales of satisfaction, which includes 9 items, and self-efficacy, which includes 7 items. The scoring is based on the Likert scale ranging from 1 to 6, where 1 represents complete agreement and 6 suggests complete disagreement. However, 7 items (1, 6, 7, 10, 11, 13, 15) are reversely scored, such that 1 represents complete disagreement and 6 represents complete agreement. After reverse scoring, higher scores indicate greater parental sense of competence. The overall score is obtained by summing up the scores on the two subscales. Johnston and Mash (1989) reported an internal consistency reliability coefficient (Cronbach's alpha) of 0.79 for the entire scale, and 0.76 and 0.75 for the self-efficacy and satisfaction subscales, respectively. In the present study, Cronbach's alpha was calculated for mothers (0.61) and fathers (0.86).

Revised Adult Attachment (RAAS) Questionnaire (1996): This scale was initially developed by Collins and Read [38] and later revised in 1996. The scale consists of 18 items which are rated on the Likert scale ranging from complete disagreement (1) to full agreement (5). It should be noted that the scoring for these items (2, 8, 13, 14, 16, 18, 18) are reversed. The questionnaire includes three sub-scales as follows: Dependence (D): This sub-scale measures the extent to which individuals trust and rely on others, considering their accessibility when needed. Closeness (C): It evaluates the level of comfort that individuals experience in terms of intimacy and closeness. Anxiety (A): This sub-scale explores individuals' fear of entering into relationships. Collins and Reed [38] provided Cronbach's alpha coefficients for each questionnaire measuring attachment styles in a sample of 173 students. The reported values were 0.69 for Closeness, 0.75 for Dependence, and 0.72 for the Anxiety sub-scale. In the present study, Cronbach's alpha coefficients for the three subscales were 0.75 for Closeness, 0.79 for Dependence, and 0.82 for Anxiety among mothers. Among fathers, Cronbach's alpha coefficients were 0.72 for Closeness, 0.73 for Dependence, and 0.81 for Anxiety. Furthermore, Cronbach's alpha coefficients for the styles of closeness, dependence, and anxiety were found to be 0.72, 0.73, and 0.81, respectively.

Dyadic Adjustment Scale (DAS) Questionnaire (1976): Graham Spanier [43] developed a comprehensive scale with 32 questions designed to assess the adaptation and overall quality of dyadic relationships for married couples and partners. Factor analysis identified four dimensions: Dyadic Satisfaction, Dyadic Cohesion, Dyadic Consensus, and Affective Expression. Spanier [33] reported a Cronbach's alpha coefficient of 0.96 for the total scale, indicating high internal consistency. The subscales also demonstrated good internal consistency, with coefficients of 0.86 for Dyadic Cohesion, 0.90 for Dyadic Consensus, and 0.93 for Affective Expression [33]. Furthermore, Spanier [33] assessed the validity of the questionnaire by comparing it with the Locke-Walcecetal Adjustment Scale (1959), resulting in a correlation of 0.86 for married individuals and 0.88 for divorced individuals, thereby confirming the questionnaire's structural and content validity. In the present study, Cronbach's alpha coefficients of 0.88 for mothers and 0.81 for fathers were obtained to evaluate the scale reliability.

Results

The study consisted of 150 male and 150 female participants. Regarding their level of education, 141 individuals (81 males and 60 females) had associate or bachelor's degrees. In terms of age, 148 individuals (69 males and 79 females) were 30-40 years old. As for the number of children, 78 couples had two children. Furthermore, 49 children with ADHD were aged 6 to 8. These findings suggest that nearly half of the participants were in their fourth decade of life when they completed the questionnaire, more than half of the couples had two children, and the majority of the ADHD children were aged 6 to 8. Table 1 presents the descriptive statistics, specifically the measures of central tendency (average values) and variability (standard deviations), for the variables of attachment style, parental competence, and dyadic adjustment.

Initially, the measurement model was evaluated for both mothers and fathers. In both groups, factor loadings exceeded 0.3, indicating acceptable item reliability. Composite reliability, Dillon–Goldstein's ρ, and internal consistency values were within acceptable ranges (generally above 0.6–0.7), confirming adequate reliability of the measurement model. In addition, some constructs showed acceptable convergent validity, with AVE values exceeding 0.5 for anxiety attachment, dyadic adjustment, and sense of competence, while AVE values for dependent attachment and closeness were slightly below 0.5. Although the constructs showed adequate composite reliability (CR > 0.70), as recommended by Fornell and Larcker [44] and Hair et al. [45], convergent validity was supported only for constructs with AVE values exceeding 0.50; closeness and dependent attachment showed AVE values below this recommended threshold.

Regarding structural results for mothers, dyadic adjustment significantly mediated the relationship between attachment styles and sense of competence. Specifically, closeness attachment had a positive and significant indirect effect ($\beta = 0.09$, $p < 0.05$), while dependent attachment had a negative and significant indirect effect ($\beta = -0.08$, $p < 0.05$). However, no significant mediating effect was found for anxious attachment, indicating partial mediation through dyadic adjustment in mothers. These findings suggest that dyadic adjustment plays an important mediating role in the relationship between attachment styles (closeness and dependence) and parental competence among mothers of children with ADHD, while this mediating effect is not observed for anxious attachment (Table 2).

Table 1. Descriptive Statistics of Research Variables by Gender

Variable			Average	SD
The attachment style components	Closeness attachment style	Father	12.54	2.62
		Mother	12.28	2.64
	Dependent attachment style	Father	11.14	2.82
		Mother	11.09	2.70
	Anxiety attachment style	Father	9.44	5.32
		Mother	10.42	5.75
The components of the sense of competence	Sense of competence	Father	58.95	9.09
		Mother	57.31	10.15
	Satisfaction	Father	31.64	7.05
		Mother	29.83	7.68
	Self-efficacy	Father	27.31	5.42
		Mother	27.48	5.41
Dyadic adjustment components	Dyadic adjustment	Father	98.12	19.07
		Mother	96.46	19.71
	Marital satisfaction	Father	34.91	4.74
		Mother	33.57	5.67
	Dyadic cohesion	Father	13.98	3.89
		Mother	13.95	3.92
	Dyadic consensus	Father	41.32	11.50
		Mother	40.96	10.67
	Expression of affection	Father	7.90	2.06
		Mother	7.96	2.19

Table 2. Convergent Validity of the Research Variables for the Mothers and Fathers

Research variables	Cronbach's alpha	Rho_A	CR	AVE
Closeness attachment style (mothers)	0.74	0.79	0.82	0.45
Dependent attachment style (mothers)	078	0.78	0.80	0.41
Anxiety attachment style (mothers)	0.81	0.81	0.86	0.52
Dyadic adjustment (mothers)	0.87	0.89	0.91	0.72
Sense of competence (mothers)	0.60	0.63	0.71	0.57
Closeness attachment style (fathers)	0.71	0.71	0.80	0.41
Dependent attachment style (fathers)	0.72	0.80	0.80	0.40
Anxiety attachment style (fathers)	0.80	0.81	0.86	0.51
Dyadic adjustment (fathers)	0.84	0.84	0.89	0.68
Sense of competence (fathers)	0.85	0.85	0.71	0.58

Rho_A: ρDillon-Goldstein, CR: composite reliability, AVE: average common variance

The divergent validity of the proposed model was assessed using the Fornell–Larcker criterion (1981) and the heterotrait–monotrait (HTMT) ratio. According to the Fornell–Larcker criterion, the square root of the average variance extracted (AVE) for each construct was greater than its correlations with the other constructs (off-diagonal values; Tables 4-5 and 4-9). For mothers, the HTM, values ranged from 0.31 to 0.80, whereas for fathers, they ranged from 0.34 to 0.80. All HTMT values were below the recommended threshold of 0.85, supporting satisfactory discriminant validity in both groups [45]. The structural component of the proposed model was then evaluated. The R^2 value represents the proportion of variance in an endogenous construct explained by its predictors. For mothers, the R^2 value for sense of competence was 0.278, indicating that attachment styles and couple compatibility jointly explained approximately 27.8% of the variance in mothers' sense of competence regarding their children with attention deficit hyperactivity disorder (ADHD). According to Cohen (1992), R^2 values of 0.02, 0.13, and 0.26 represent weak, moderate, and strong levels of explanatory power, respectively. Thus, the obtained R^2 value indicated a strong level of explanatory power [46]. For fathers, the R^2 value for sense of competence was 0.296, indicating that attachment styles and couple compatibility jointly explained approximately 29.6% of the variance in fathers' sense of competence regarding their children with ADHD. Based on the same criteria proposed by Cohen (1992), this value also represented a strong level of explanatory power [46]. The composite reliability and predictive relevance indices of the constructs were also examined. The obtained values supported the adequacy of the measurement and structural components of the proposed model [45]. The overall model fit was additionally assessed using the Goodness-of-Fit (GOF) index, which is

calculated as the geometric mean of the average variance extracted (AVE) and the R^2 values of the endogenous constructs. According to Latan and Ghozali (2012), GOF values of 0.10, 0.25, and 0.36 represent weak, moderate, and strong levels of model fit, respectively [47]. The GOF value was 0.37 for mothers, exceeding the 0.36 threshold and therefore indicating a strong level of overall model fit. For fathers, the GOF value was 0.32, which exceeded the 0.25 threshold but was below 0.36, indicating a moderate level of overall model fit. Overall, the findings support the adequacy of the measurement and structural models in explaining the study variables for both mothers and fathers.

The results showed in Table 3 show that the R^2 values for dyadic adjustment were 0.24 for mothers and 0.11 for fathers, while the R^2 values for sense of competence were 0.27 and 0.29, respectively. Thus, the model explained 24.0% and 11.0% of the variance in dyadic adjustment and 27.8% and 29.6% of the variance in sense of competence among mothers and fathers, respectively. The positive CV-red and CV-com values for the endogenous constructs indicated the predictive relevance and explanatory quality of the model. The GOF values were 0.37 for mothers and 0.32 for fathers, indicating strong and moderate levels of overall model fit, respectively.

Based on the evaluated indicators, the mediating role of dyadic adjustment in the relationship between attachment styles and the perception of competence among the mothers of ADHD children was proved. Diagram 1 illustrates the structural model of the study based on the standard regression coefficients for the mothers of ADHD children.

Table 3. Quality Indicators of the Structural Model for the Mothers

Variables	Coefficient of determination (R2)	Adjusted coefficient of determination (Adj. R2)	CV-red	CV-com	GOF
Closeness attachment style (mothers)	-	-	-	0.26	0.37
Dependent attachment style (mothers)	-	-	-	0.20	
Anxiety attachment style (mothers)	-	-	-	0.33	
Dyadic adjustment (mothers)	0.24	0.22	0.15	0.51	
Sense of competence (mothers)	0.27	0.25	0.10	0.04	
Closeness attachment style (fathers)	-	-	-	0.19	0.32
Dependent attachment style (fathers)	-	-	-	0.18	
Anxiety attachment style (fathers)	-	-	-	0.32	
Dyadic adjustment (fathers)	0.11	0.10	0.06	0.45	
Sense of competence (fathers)	0.29	0.28	0.12	0.07	

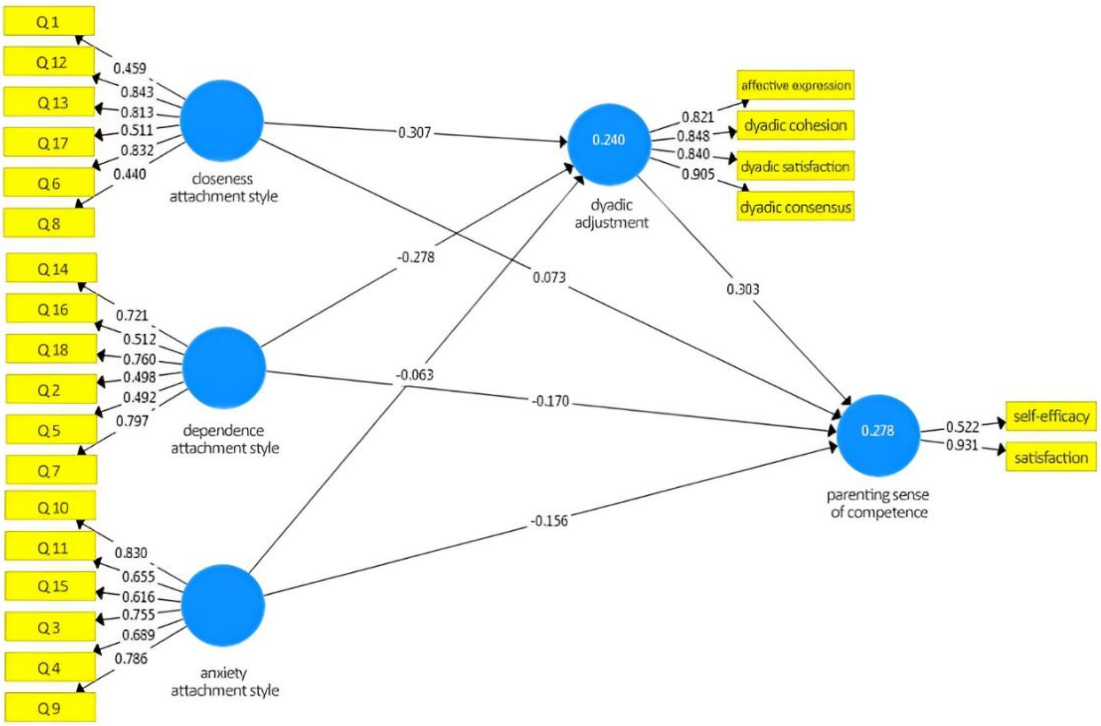


Diagram 1. The structural model of the research (standard regression coefficients).

Diagram 2 depicts the research model using standard regression coefficients for fathers raising children diagnosed with attention deficit hyperactivity disorder. The corresponding calculations were done with the PLS software.

The VIF (Variance Inflation Factor) index was used to examine the multi collinearity. Notably, all the VIF index values (ranging from 1 to 3.85) were found to be below 2. In other words, there was no multi collinearity. In line during the examination of multiple non-collinearity, all the VIF indices (ranging from 1 to 4.83) were below 2, indicating the absence of significant collinearity. The details regarding the direct and indirect effects of the research model can be found in Table 4.

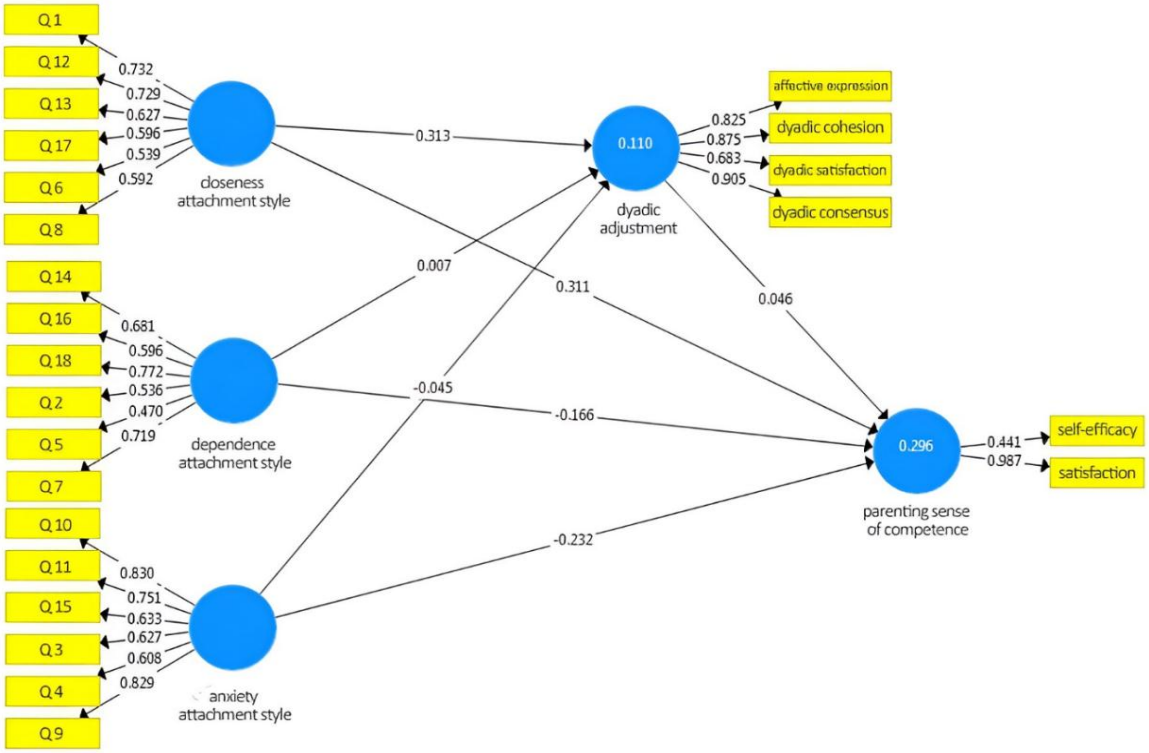


Diagram 2. The structural model of the research (standard regression coefficients).

Table 4. The Outcome of the Direct and Indirect Effects of the Research Model on the Mothers

	Path	Hypothesis	Path coefficient (β)	t-value	Result
Mothers	Closeness attachment style → Dyadic adjustment	H1	0.30	3.85	Confirmation
	Closeness attachment style → Sense of competence	H2	0.07	0.90	Rejection
	Dependent attachment style → Dyadic adjustment	H3	-0.27	2.77	Confirmation
	Dependent attachment style → Sense of competence	H4	-0.17	1.76	Rejection
	Anxiety attachment style → Dyadic adjustment	H5	-0.06	0.65	Rejection
	Anxiety attachment style → Sense of competence	H6	-0.15	1.51	Rejection
	Dyadic adjustment → Sense of competence	H7	0.30	3.07	Confirmation
	Closeness attachment style → Dyadic adjustment → Sense of competence	H8	0.09	2.19	Confirmation
	Dependent attachment style → Dyadic adjustment → Sense of competence	H9	-0.08	2.09	Confirmation
	Anxiety attachment style → Dyadic adjustment → Sense of competence	H10	-0.01	0.64	Rejection
Fathers	Closeness attachment style → Dyadic adjustment	H1	0.31	3.19	Confirmation
	Closeness attachment style → Sense of competence	H2	0.31	4.42	Confirmation
	Dependent attachment style → Dyadic adjustment	H3	0.007	0.06	Rejection
	Dependent attachment style → Sense of competence	H4	-0.16	1.88	Rejection
	Anxiety attachment style → Dyadic adjustment	H5	-0.04	0.45	Rejection
	Anxiety attachment style → Sense of competence	H6	-0.23	2.92	Confirmation
	Dyadic adjustment → Sense of competence	H7	0.04	0.78	Rejection
	Closeness attachment style → Dyadic adjustment → Sense of competence	H8	0.002	0.24	Rejection
	Dependent attachment style → Dyadic adjustment → Sense of competence	H9	0.001	0.03	Rejection
	Anxiety attachment style → Dyadic adjustment → Sense of competence	H10	-0.002	0.24	Rejection

The findings presented in Table 4 demonstrate that the attachment style of closeness had a positive and significant impact on both dyadic adjustment (P = 0.001, β = 0.31) and the sense of competence (P < 0.001, β = 0.31). Conversely, the anxiety attachment style negatively and significantly influenced the sense of competence (P = 0.004, β = 0.23). Furthermore, examination was performed of the indirect effects of the dependence, closeness, and anxiety attachment styles on the dyadic adjustment-mediated sense of competence among the fathers of children with attention deficit hyperactivity disorder. However, the results indicated that these indirect effects were not statistically significant at the 0.05 level. The confidence level being 95%, it can be concluded that the variable of dyadic adjustment did not serve as a mediating factor in the relationship between attachment styles and the sense of competence among the fathers of children with attention deficit hyperactivity disorder. To assess the stability of the causal relationships between the research variables across genders, a multi-group analysis was done through comparing the variables in terms of path coefficients. This analysis aimed to examine the variation in the coefficients, t-statistics, and significance levels derived from comparing the mothers and fathers in terms of structural paths. The results of this analysis are presented in Table 5, shedding light on the observed differences between the two groups.

Table 5 indicates significant differences between mothers and fathers in some of the direct and indirect pathways linking attachment, dyadic adjustment, and parental sense of competence. No significant difference was observed between mothers and fathers in the direct path from closeness attachment to dyadic adjustment (coefficient difference = 0.006, t = 0.05, p = 0.96). In contrast, significant differences were observed in the direct path from closeness attachment to sense of competence (coefficient difference = 0.23, t = 2.15, p = 0.03) and in the direct path from dyadic adjustment to sense of competence (coefficient difference = 0.26, t = 2.24, p = 0.02). Regarding the indirect effects, a significant difference was observed between mothers and fathers in the indirect effect of dependence attachment on sense of competence through dyadic adjustment (coefficient difference = 0.084, t = 2.18, p = 0.03). No significant differences were observed between the two groups in the other indirect pathways, including closeness attachment (coefficient difference = 0.08, t = 1.68, p = 0.09) and anxiety attachment (coefficient difference = 0.01, t = 0.57, p = 0.56).

Table 5. Test of Differences between the Mothers and Fathers in Terms of Path Coefficients

Relations	Coefficient difference	t	P
Closeness attachment style → Dyadic adjustment	0.006	0.05	0.96
Closeness attachment style → Sense of competence	0.23	2.15	0.03
Dependence attachment style → Dyadic adjustment	0.28	1.96	0.05
Dependence attachment style → Sense of competence	0.01	0.07	0.93
Anxiety attachment style → Dyadic adjustment	0.01	0.13	0.89
Anxiety attachment style → Sense of competence	0.07	0.55	0.58
Dyadic adjustment → Sense of competence	0.26	2.24	0.02
Indirect impacts			
Closeness attachment style → Dyadic adjustment → Sense of competence	0.08	1.68	0.09
Dependence attachment style → Dyadic adjustment → Sense of competence	0.08	2.18	0.03
Anxiety attachment style → Dyadic adjustment → Sense of competence	0.01	0.57	0.56

Discussion

The findings of the present study addressed the proposed relationships among attachment styles, dyadic adjustment, and parental sense of competence in mothers and fathers of children with ADHD. Among mothers, dependent and anxious attachment styles were negatively associated with parental sense of competence and dyadic adjustment, whereas dyadic adjustment was positively associated with parental sense of competence. Among fathers, dependent and anxious attachment styles were negatively associated with parental sense of competence, while closeness attachment was positively associated with it. These findings provide support for the proposed associations among the study variables, with the pattern of associations differing between mothers and fathers.

The present findings regarding the association between attachment and parental sense of competence are consistent with previous research [23, 25–28]. Handelzalts et al. [23], Kim et al. [25], Hugill et al. [26], Jones et al. [27], and Kohlhoff and Barnett [28] have similarly reported associations between attachment-related characteristics and parents' experiences and perceptions of competence in the parenting role. Consistent with this body of research, the present study found that attachment dimensions were associated with parental sense of competence in both mothers and fathers, although the specific pattern differed between the two groups. In mothers, dependent and anxious attachment were negatively associated with parental sense of competence, whereas among fathers, closeness attachment was positively associated with parental competence. These findings indicate that different dimensions of attachment may be differentially associated with parents' perceptions of their competence in managing the demands of parenting a child with ADHD. The positive association between dyadic adjustment and parental sense of competence was also consistent with the findings of Oltra-Benavent et al. [33] and Salcuni et al. [34], further

indicating that the quality of the couple relationship is associated with parents' perceptions of competence.

The first hypothesis was supported, indicating that dyadic adjustment mediated the relationship between specific attachment dimensions and parental sense of competence among mothers of children with ADHD. These findings are consistent with the research outcomes of Ben-Naim et al. [16] and Shelton et al. [22]. Similar findings were also reported by Salcuni et al. [34], who examined parents' experiences and challenges in the parent–child relationship. However, Calvo et al. [39] reported findings that differed from those of the present study. Research examining the mediating role of dyadic adjustment in the association between attachment and parental sense of competence, particularly among parents of children with ADHD, remains limited. One possible explanation for the present findings is that attachment-related characteristics may be reflected in the way individuals experience and regulate close relationships. These characteristics may be associated with perceptions of intimacy, trust, support, and the management of interpersonal difficulties within the couple relationship. In turn, the quality of the couple relationship may be associated with parents' perceptions of their effectiveness and competence in the parenting role. From this perspective, dyadic adjustment may represent a relational pathway through which attachment-related characteristics are associated with parental sense of competence. The fact that this indirect association was observed among mothers but not fathers may indicate that the relationships among attachment, dyadic adjustment, and parental competence are not identical across parents; however, the reasons for this difference cannot be determined from the present correlational data and require further investigation.

The mediating role of dyadic adjustment in the relationship between fathers' attachment dimensions and their sense of competence in parenting children with ADHD was examined. Unlike the findings for mothers, the indirect associations through dyadic adjustment were not statistically significant among fathers; therefore, the second hypothesis was not supported. This finding differs from the results reported by Ben-Naim et al. [16], Fatiha Yahya [48], and Shelton et al. [22]. However, the absence of a significant association between dyadic adjustment and fathers' sense of competence is consistent with the findings of Caldwell et al. [49]. Research specifically examining fathers in this context remains limited, as many previous studies have focused primarily on mothers or have analyzed parents without examining mothers and fathers separately. One possible explanation for the absence of a significant mediation effect among fathers is that the relational pathway identified in mothers may not operate in the same way for fathers. Although attachment-related characteristics and dyadic adjustment may both be relevant to parenting experiences, the present findings suggest that dyadic adjustment did not significantly transmit the association between attachment and parental sense of competence among fathers. This may indicate that fathers' perceptions of parental competence are associated with other individual or relational factors that were not examined in the present model. In addition, differences in coping processes may be relevant. For example, previous research has suggested that fathers of children with ADHD may use more avoidant coping strategies when dealing with parenting-related challenges [50], which could represent an alternative pathway linking parenting demands to their perceptions of competence. Thus, the difference between mothers and fathers may reflect differences in the pathways through which attachment and relational experiences are associated with parental competence, rather than a simple difference in the importance of the couple relationship itself. Further research examining father-specific relational and individual factors is needed to clarify these differences.

Significant differences between mothers and fathers were observed in several pathways linking attachment, dyadic adjustment, and parental sense of competence. Although no significant difference was found between the two groups in the relationship between closeness attachment and dyadic adjustment, significant between-group differences were observed in the direct relationships of closeness attachment and dyadic adjustment with parental sense of competence. In addition, the indirect relationship between dependence attachment and parental sense of competence through dyadic adjustment differed significantly between mothers and fathers. Regarding the direct relationship between attachment dimensions and parental sense of competence, the findings were consistent with those reported by Calvo and Bianco [39], Hevers and Psych [40], and Steele et al. [24]. However, Caldwell et al. [49] did not find a significant relationship between anxious attachment and parental sense of competence. Regarding the relationship between dyadic adjustment and parental sense of competence, the findings were consistent with those reported by Salcuni et al. [34], Calvo and Bianco [39], and Suzuki [35], but differed from the findings of Nagi et al. [3]. Previous research has rarely examined differences between mothers and fathers in the relationships among attachment, dyadic adjustment, and parental sense of competence, particularly among parents of children with ADHD [50]. Some studies have reported differences in parental satisfaction between mothers and fathers [39]. Wang et al. [51], using a dyadic approach among married mothers and fathers, found significant associations between parents' adult attachment and co-parenting and parent–child relationship processes. These findings support the relevance of attachment within the broader family relationship context. Ankori et al. [52], in a study of parents of children with ADHD, found that parental anxious attachment was associated with child behavioral problems, with parental rejection/non-warmth mediating this association. These findings support the relevance of attachment-related characteristics to parenting processes in parents of children with ADHD. The present findings indicate that the pattern of relationships among attachment, dyadic adjustment, and parental sense of competence differs between mothers and fathers. One

possible explanation is that attachment-related characteristics and the quality of the couple relationship may be associated with parental competence through different relational processes in the two groups. The significant difference in the indirect relationship involving dependence attachment suggests that dyadic adjustment may have a different role in this specific association for mothers and fathers.

Future studies should compare parents of children with ADHD with parents of typically developing children, examine these variables in families affected by other childhood disorders, and investigate whether ADHD treatment status and the presence of multiple children with ADHD are associated with the study variables. The findings may also have implications for parent education and counseling interventions addressing attachment, parental competence, and parenting stress. Several limitations should be considered. First, the use of convenience sampling may have introduced selection bias because parents who were more accessible or more willing to participate may have differed from parents who were not recruited, thereby limiting the generalizability of the findings. Second, the sample was drawn from parents of children with ADHD in Isfahan, Iran, and the findings should therefore be interpreted within the sociocultural and clinical context of this population. This context may limit the extent to which the findings can be generalized to parents of children with ADHD in other regions or cultural settings. Third, data were collected through online questionnaires during the COVID-19 pandemic, which may have influenced participation and the quality of self-reported responses. In addition, some parents may have been reluctant to participate because of concerns about disclosing their child's condition, which may have further introduced participation bias. Finally, comorbid disorders in the children and possible psychological disorders in the parents were not assessed. These factors may have influenced attachment, dyadic adjustment, parental competence, or parenting stress and may therefore have contributed to variability in the observed associations. Consequently, the findings should be interpreted with caution because the potential effects of these unmeasured characteristics could not be separated from the relationships examined in the present study.

Conclusion

This study examined the relationships among attachment dimensions, dyadic adjustment, and parental sense of competence among parents of children with ADHD. The findings showed that the associations among these variables differed between mothers and fathers. In mothers, dyadic adjustment mediated the associations of specific attachment dimensions with parental sense of competence, whereas the corresponding indirect effects were not significant among fathers. In addition, significant differences between mothers and fathers were observed in selected direct and indirect pathways, while other pathways did not differ significantly between the two groups. From a theoretical perspective, these findings suggest that parental competence may be linked not only to individual attachment-related characteristics but also to the quality of the couple relationship, with these associations operating through different pathways across mothers and fathers. From a practical perspective, parent-focused interventions for families of children with ADHD may benefit from assessing both attachment-related patterns and dyadic adjustment rather than addressing parental competence as an exclusively individual characteristic. Interventions may also consider the couple relationship when difficulties in parental competence are accompanied by relational difficulties. Future research should examine these pathways longitudinally and identify additional individual and relational factors that may account for the differences observed between mothers and fathers.

Conflict of Interest

The authors declare that they have no financial or non-financial conflicts of interest related to this study.

Ethical Approval

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki and was approved by the Ethics Committee of Yazd University (Ethics Approval No. IR.YAZD.REC.1400.039). Participation was voluntary, and written informed consent was obtained from both parents before participation. All data were collected and handled confidentially, and participants' anonymity was maintained throughout the study.

Declaration of Generative AI and AI-Assisted Technologies

During the preparation of this manuscript, generative AI tools (ChatGPT, OpenAI, 2025) were used solely for language editing, paraphrasing, and improving clarity. The final content was reviewed and edited by the author to ensure accuracy, scientific rigor, and integrity. The author takes full responsibility for the content of the final manuscript.

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